THE UNIVERSITY OF ADELAIDE AUSTRALIA

DEVELOPMENTAL RESETTLEMENT AND SUSTAINABLE DEVELOPMENT:

THE THREE GORGES PROJECT IN CHINA

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I dedicate this work to my family;

And all the migrants of the Three Gorges Project, China
whose sacrifices make it possible for the progress of the nation.

TABLE OF CONTENTS

CHAPTER 3: FIELDWORK AND METHODOLOGGY

CHAPTER 4: DEVELOPMENTAL RESETTLEMENT

CHAPTER 5: FRAMEWORK FOR IMPACT ASSESSMENTS OF RESETTLEMENT OF THE THREE GORGES PROJECT

CHAPTER 8: GOVERNMENT-ORGANISED DISTANT RESETTLEMENT

CHAPTER 9: IMPLEMENTATION OF THE GOVERNMENT-ORGANISED DISTANT RESETTLEMENT: THE CASE IN SICHUAN PROVINCE

CHAPTER 10: PREDICAMENT OF RURAL WOMEN DISPLACED BY THE THREE GORGES PROJECT

CHAPTER 11: CONCLUSION

LIST OF TABLES

LIST OF FIGURES

GLOSSARY

ACFTU	All-China Federation of Trade Unions
ACWF	All-China Women's Federation
ADB	Asian Development Bank
APRB	Anhui Provincial Resettlement Bureau (China)
CAS	Chinese Academy of Science
CCCPC	Central Committee of the Communist Party of China
CEPB	Chongqing Environment Protection Bureau
CMG	Chongqing Municipal Government
CMPC	Chongqing Municipal Planning Commission
CNSB	Chinese National Statistical Bureau
CRB	Chongqing Resettlement Bureau (Chongqing Municipality)
CWRC	Changjiang Water Resources Commission (China)
DIDR	Development-induced Displacement and Resettlement
EIA	Economic Impact Assessment
EIAs	Environmental Impact Assessments
GIS	Geographical Information Systems
GODR	Government-Organised Distant Resettlement
HRS	Household Responsibility System
IRN	International River Network
IMDD	Institute of Mountain Disasters and Development (Chinese Academy of Science)
KRB	Kaixian Resettlement Bureau (Kaixian County)
LAL	Land Administration Law (China)
MWR	Ministry of Water Resources (China)
MWREP	Ministry of Water Resources and Electric Power (China)
NPCC	National People's Congress of China
NR	Near Resettlement
OED	Operation Evaluation Department (World Bank)
REG	Resettlement Expert Group of the TGP
ROMWR	Resettlement Office of the Ministry of Water Resources (China)
SCC	State Council of China

SETC	State Economic and Trade Commission (China)
SIA	Social Impact Assessment
SPRO	Sichuan Provincial Resettlement Office
TGP	Three Gorges Project
SEPA	State Environmental Protection Administration (China)
TGPCC	Three Gorges Project Construction Commission
UNDP	United Nations Development Programme
UNHCR	United Nations High Commissioner for Refugees
VSDR	Voluntary Self Distant Resettlement
WCD	World Commission on Dams
WCED	World Commission on Environment and Development

ABSTRACT

Resettlement of people displaced by large hydro projects is an important development issue. Research into the consequences of development-induced displacement and resettlement (DIDR) has increased in the last decade, but studies about strategies for overcoming the potential negative socio-economic and environmental consequences for both the displaced people and the affected areas are lacking. This particularly applies to the Three Gorges Project (TGP) in China. This thesis examines the existing 'developmental resettlement' policy and its implementation in this region, identifies the restrictive factors which influence rural resettlement approaches (both near and distant resettlement) and their impacts, and analyses critical issues affecting sustainability of rural resettlement in the contexts of the social and economic transformations and contemporary migration in China.

Employing empirical data derived from in-depth interviews and a survey conducted in the case study areas in 2000-01 and using GIS-based multicriteria analysis with landuse type and population data as the basic datasets, the main body of the thesis analyses the factors which influence the sustainability of rural resettlement, the nature and problems of the new 'government-organised distant resettlement', and the predicaments of the vulnerable group of female resettlers. It goes on to develop frameworks for assessing the social and environmental impact of population resettlement. The thesis investigates crucial factors constraining rural resettlement:

- incompatibility between local agriculture-based resettlement and limited human carrying capacity of land in the reservoir area;
- unfair compensation for land and other asset losses;
- low-level participation of the migrants in decision-making regarding their resettlement; and
- inadequate strategies for resettlement rehabilitation and process of social integration of people into their new and distant resettlement communities.

The study reveals that social, environmental, economic and political factors play important roles in the readjustments of the resettlement policy and the implementation of resettlement schemes. For the sake of environmental sustainability in the reservoir area, a large number of rural residents were moved out of the reservoir area and resettled in 11 designated provinces via a distant resettlement scheme organised by the government in 2000-02. On one hand, the Chinese government has played significant roles in the TGP distant resettlement, in policy adjustment and its implementation and organisation, while on the other hand, issues relating to resettlement location selections, land adjustment, rational compensation and allocation, strategies and planning for re-establishment of livelihood of migrant households, social mobility and discontinuity and gender combine to make the distant resettlement complicated and difficult.

This thesis attempts to explore the interactions between resettlement and sustainable development which are the two major themes of a 'people-centred' relocation. It has an emphasis on the impacts of market-oriented economic mechanisms and the governmental administrative mechanisms and sustainable development. Finally, major experiences, lessons and implications of the Chinese 'developmental resettlement' for the theory of involuntary migration and resettlement are presented.

DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to my dissertation being available for photocopying and loan.

SIGNED: _____ DATE: 17/02/04

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Chapter One

INTRODUCTION

1.1 Research Context

Involuntary resettlement can be caused by wars, religious conflicts, political upheaval, natural disasters and development projects such as reservoirs and dams. While governments and private investors in developed countries largely avoid constructing dams in preference to cheaper and less risky means of power generation, the construction of dams and reservoirs in developing countries has continued over the last half a century to meet the increased demands of consumption. Some 45,000 large dams (higher than 15 metres) have been built during the past five decades in over 150 countries, of which almost half are located in China (Bosshard 2001). It is estimated that about 10 million people were displaced by development projects each year in the mid-1990s, or at least 80–90 million over the past decade worldwide (Cernea 1997). The majority of these persons (between 30 and 60 million people) were in China, followed by India (OED 2000; WCD 2000). Most dams and reservoirs are situated in relatively poor rural areas. Scarce land resources, limited carrying capacity, fragile environments with serious water issues and soil erosion, lagging socio-economic development, and low literacy levels of the labour force are problems frequently encountered. Displacement includes the expropriation of land and other assets and movement of people. Involuntary resettlement consists of two closely related social processes: displacement of people and reconstruction of their livelihoods (Cernea 1996a). Reconstruction is concerned with how the displaced people regain their capacity to seek a livelihood and form a new community.

Resettlement of people displaced by major infrastructure projects is an important developmental issue with concerns about the economic, social, environmental consequences for the displaced population (Cernea and McDowell 2000; World Bank 2001a). It is noted that 'the most widespread effect of involuntary displacement is the impoverishment of a considerable number of people… such impoverishment, with its de facto lack of social justice and equity, is manifest in numerous countries throughout the developing world when involuntary resettlement occurs' (Cernea and McDowell 2000, p. 12). Displacement and resettlement produced by developmental projects, particularly hydro projects, has been

studied from a number of perspectives (Oliver-Smith and Hansen 1982; Scudder and Colson 1982b; Kearney 1986; Cernea 1988, 1997; World Bank 1990, 2001a; Scudder 1991, 1993). The World Bank began conceptualising resettlement as a development opportunity in the early 1980s (OED 1998a). They advocate that resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits (World Bank 2001a). No definitive theory on migration has managed to encompass the total process of displacement and resettlement because of its complexity (Skeldon 1997).

The involuntary resettlement issue is one of China's biggest problems with the ongoing Three Gorges Project (TGP), involving 17-years of displacement and resettlement of over 1.3 million involuntary resettlers (CWRC 1997). This project has special political, demographic, and socio-economic characteristics that differentiate it from any other.

This thesis is a study of development-oriented resettlement produced by the construction and associated displacement of the TGP, with particular attention to the rural resettlement of rural residents. It is based on both primary and secondary sources of information which are combined in order to arrive at an understanding of the patterns and processes involved in rural resettlement in the TGP. It is expected that this will not only contribute to the understanding of this process in China but also to the more general understanding of involuntary human displacement and resettlement. The study seeks to contribute toward the formulation of policies and programmes which will help in the restoration of livelihoods and means of production of those persons relocated, and to be relocated, in the Three Gorges reservoir area, and in other provinces. The study examines the consequences of various approaches to agricultural or land-based rural resettlement, mainly via 'Near Resettlement' (NR) within the local communities in the reservoir area and the 'Government-Organised Distant Resettlement' (GODR) in more distant provinces.

The construction of the TGP and displacement of people have taken place during a period of socio-economic transformation that has profoundly influenced all aspects of urban and rural life in China. The first is the accelerated transformation from a rural agrarian society to a more urbanised society. The second is the transformation from a centrally planned economy to a socialist market economy. Although China is in the process of establishing a market economy and has made significant progress in building market mechanisms, the TGP displacement and resettlement has been manipulated and implemented by government. The

Chinese government has committed itself to fully resettling 1.3 million persons displaced by the project since its commencement in the early 1990s. It has carried out a 'developmental resettlement' policy in dealing with involuntary migration and resettlement induced by hydro projects as well as other infrastructure projects. However, relocation of people and the interrelationships between development in the reservoir area and/or in any resettlement locations and displacement of migrants remain in heated dispute.

1.2 Objectives and Aims

The principal purpose of this study is to provide some insight into developmental resettlement associated with the TGP. The major focus is on rural resettlement, with specific reference to the new trend toward 'distant resettlement' and the consequences of resettlement for the large number of forced migrants. In pursuit of this general objective the study has a number of more specific aims:

1. To examine the consequences of involuntary displacement and resettlement produced by past hydro projects in China and similar projects in other developing countries to examine how impoverishment of the displaced is caused by development projects;
2. To understand the existing developmental resettlement policy associated with the TGP and its implementation;
3. To examine the restrictive factors which influence rural resettlement approaches and their consequences;
4. To elucidate some critical issues impacting on sustainability of rural resettlement:
    - The incompatibility between agriculture based resettlement and the human carrying capacity of land in the reservoir area;
    - Contradictions between the administrative mechanisms of the government and market forces;
    - Unfair compensation for the losses of land and other assets;
    - Disparity of development in the reservoir area and regions which the TGP benefits, and conflicts of interests between individual migrants and the nation.
5. To reveal the nature and major problems of the GODR scheme;

6. To examine the impacts of displacement on the situations of woman migrants, one of the vulnerable groups of migrants in the process of displacement and resettlement; and
7. To draw out some major socio-economic and environmental implications of rural resettlement for both the migrants and affected communities in migrant sending areas and in the resettlement areas.

1.3 Voluntary and Involuntary Migration

Migration is an extremely varied and complex manifestation with components of equally complex economic, social, cultural, demographic, and political processes operating at the local, regional, national, and international levels (Castles and Miller 1993). In the voluminous literature on migration there are different topologies which differentiate migrants and migrations in terms of the temporal dimension, distance traversed, nature of the boundaries crossed, causes of the move, characteristics of the migrants and so forth. One of the earliest distinctions was made by Fairchild (1925). He categorised the types of human migration into voluntary and forced migrations. The most frequently cited topology of migration is that of Peterson (1958), in which a principal division employed is the degree to which a move is 'forced'. Voluntary and involuntary migration can be identified based on motivation and willingness of migrants. The distinction between the two types of migration reflects not only the relative level of freedom in deciding whether to move out but also personal characteristics and the context of the society in which the migrants live (Boyle *et al.* 1998).

1.3.1 Voluntary Migration

Theories on the causes of voluntary migration flows can generally be categorised into two broad approaches. The first is a 'neo-classical economics equilibrium approach' (Harris and Todaro 1970). It suggests that population movement is a 'natural' response to inter-regional differences in social and economic opportunities, and that people generally move from where labour is plentiful and capital is scarce to labour-deficient and capital-abundant areas (Greenwood 1994). Thus, the level of development in various regions of a country or the globe is seen as determining the scale and direction of migratory flows. From this theoretical perspective, some phenomena and features relating to the contemporary 'floating population' (*liudong renkou)* in China since the 1980s can be explained (Fan and Huang 1998). The

second theoretical framework is the 'structuralist' approach (Bach and Schraml 1982; Wood 1982; Goss and Lindquist 1995). In this approach, migration is conceptualised as a macro-social process with reference to a broader context of socioeconomic and political change based mainly on historical materialism. It criticises the neo-classical economic perspective for placing too much emphasis on the free choice of individuals, and for neglecting the macro-structural forces which lie at the base of the regional disparities to which people respond (Chant and Radcliffe 1992). According to this approach, human movements lie in the deeper, underlying forces which structure the unequal distribution of opportunities between regions or countries. From this perspective, population movement is a response to broader structural forces in society which have created substantial spatial inequalities.

The two broad theoretical approaches not only offer opposing views of the causes of human migration, but they also imply very different outcomes. The neo-classical approach, arguing that population displacements are natural occurrences, suggests that they are positive events and that policy development should reflect and reinforce the beneficial aspects of these movements. Conversely, the structuralist approach stresses that population migration is a response to unnatural imbalances in power and opportunities. As a result, the negative aspects of human displacements are a function of inequities in development. Policy on population displacement should emphasise these imbalances and attempt to stem what must be viewed as a consequence of the inequitable distribution of resources in society (Lonergan 1998).

1.3.2 Involuntary Migration

There is no absolute distinction between the voluntary and involuntary migrations (Speare 1974). Hugo (1996, p. 107) states that:

> Population mobility is probably best viewed as being arranged along a continuum ranging from totally voluntary migration, in which the choice and the will of the migrants is the overwhelmingly decisive element encouraging people to move, to totally forced migration, where the migrants are faced with death if they remain in their present place of residence.

There is some diversity in the literature in relation to the specific types of involuntary migration. Three subsets of many migrants who have no realistic choice but to move are labeled as 'involuntary' or 'forced' migrants (Boyle *et al.* 1998, Chapter 8). Three major categories can be identified: political refugees, environmental refugees or environment-related migrants, and people produced by infrastructure projects (including dams).

Much attention has been paid to political refugees. This term is defined by the 1967 United Nations Protocol on Refugees as 'every person who, owing to a well founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country' (Keely 1981, p. 6). The United Nations High Commissioner for Refugees (UNHCR) in a 1993 publication '*State of the World's Refugees*' identified four root causes of refugee flows. These were political instability, economic tensions, ethnic conflict and environmental degradation. Even though some institutions and researchers have extended this term to a broader context (Olson 1979; Nobel 1985), the definition of refugee for this subset of involuntary migration is still used to identify those migrants who are forced to move by pressures of political conflicts, or human origins (Zolberg and Suhrke 1984).

Since its first official mention in 1985 by El-Hinnawi (1985), the term 'environmental refugee' has appeared with increasing frequency in the literature on environment, migration and development. Jacobsen (1988) defines it as referring to people who have been forced to leave their origin area because of environmental disruption. Richmond (1993) argues that migrants induced by infrastructure projects can be categorised as environmental migrants.

It is necessary to differentiate between refugees and environmentally induced migrants. Some scholars argue that it is best not to refer to migrants forced to move for environmental reasons as refugees, given the specific legal connotation of the term refugee (Hugo 1996; Bates 2002). Given that infrastructure projects usually include resettlement components, a few scholars argue that they are unlikely to produce 'waves of environmental refugees' (Homer-Dixon 1991). Migration and displacement produced by development projects (including industrial, urban, or transportation infrastructure projects) should be treated separately from the categories of environment-related relocation and also from political refugees. Compared with the former two categories of migrants, people displaced by dams share some characteristics but also display differences. First, they are similar in that people under each category are forced to move against their will. However, resettlement schemes arising from dam building are usually planned by governments. Second, unlike political refugees, people displaced by dams do not normally leave their origin country and are settled internally. They have some time to make the arrangements for their displacement though their choice of destination location is limited, greatly depending on the government planning of relocation

schemes. Third, people displaced by reservoirs have no opportunity to return to their place of origin. By contrast, political refugees have a few options (Cunny and Stein 1989).

The most widespread and fundamental outcome of this category of people resulted from development-induced displacement and resettlement (DIDR) is the impoverishment of considerable numbers of people (Cernea and McDowell 2000). One of the most obvious features of displacement and resettlement involving hydro projects is its compulsory nature. The people have no choice but to move or be moved. All people, regardless of age, sex, profession, length of residence, religious belief, or other characteristics, must leave the reservoir area before it is inundated and resettle in other places (Eidem 1973). Due to this involuntary nature, the relocatees usually expect the government or the project authority to assume the responsibility for their rehabilitation (Scudder 1973). Voluntary migrants usually have strong desires to move for various reasons, make careful arrangements for their migration, and are willing to run the risks and uncertainties in their new environment. In contrast, involuntary resettlers have no say whether or not they move. More possibly, they are forced to move urgently after the expropriation of their land (Cernea 1985). The other feature of this type of forced displacement is massive displacement, moving all the residents (comprising individual family units) residing in an area to be flooded by a reservoir. Massive removals and the search for new resettlement locations and appropriate land occur at about the same time as the commencement of the hydro project construction (Eidem 1973). The resettlers confront problems in finding favorable locations and farmland of equivalent quality in resettlement areas. Another feature is characterised by multi-dimensional stresses: social, cultural, and psychological. Forced migration caused by dams and reservoirs has turned out to be a process even more complex and painful, which involves developing new production systems and rebuilding new patterns of community organisation (Cernea 1985). The subset of involuntary people produced by development projects is the focus of this study.

Displacement is a multi-dimensional phenomenon. Bartolome *et al.* (2000, p. 3) take displacement to be 'the result of a model of development that enforces certain technical and economic choices without giving any serious consideration to those options that would involve the least social and environmental costs' (Bartolome *et al.* 2000, p. 3). Cernea (see Cernea and McDowell 2000) sees displacement as not only the physical eviction from a dwelling but also the expropriation of productive land and other assets to make possible an alternative use. Displacement caused by infrastructure projects usually possesses the following five characteristics. First, most displacement is involuntary. There is usually little

meaningful participation of the affected people in the planning and implementation of any projects, e.g., dam construction, resettlement and livelihood rehabilitation. Second, submergence of land and other property, and displacement of residents sometimes occur without prior and sufficient warning of the impending filling of the reservoir, more often in developing countries and past projects. Third, the numbers of both the people directly affected (whose land or housing or both is flooded) and those indirectly affected (e.g., downstream people and host people who receive the migrants) are frequently underestimated. There is an inadequate understanding of the exact nature and extent of the negative effects involved. Fourth, the notion of displacement as a 'sacrifice' has considerably influenced the conception of displacement. It implicitly demands that the people to be displaced lose regional or individual benefits for the nation's overall benefits. Lastly, this has led to a perception of resettlement and rehabilitation as a 'reward' for sacrifice rather than as a basic right or entitlement of the displaced.

In this study, human displacement refers to those that are forced to be physically relocated in order to make way for a hydro project and its related aspects. It is commonly experienced through the losses of land and other assets, resource base and livelihood, and the disruption of social and economic networks.

Resettlement is a process that could reverse the risks of displacement, as the 'Impoverishment Risks and Reconstruction' (IRR) model of Cernea (1998, p. 47) suggests:

> ... from landlessness to land-based resettlement; from joblessness to re-employment; from food insecurity to safe nutrition; from homelessness to house reconstruction; from increased morbidity and mortality to improved health and well being, and from social disarticulation and deprivation of common property resources to community reconstruction and social inclusion.

In China, the context of forced displacement in its broadest sense centres on four fields: (1) involuntary displacement caused by development projects; (2) controlled displacement resulted from political persecution; (3) massive labour dislocations; and (4) disaster-induced displacement. This study focuses on the first of these fields.

1.4 Development and Resettlement

The development of currently underdeveloped countries requires advances in technology, development of natural resources and the establishment of infrastructure such as large dams,

reservoirs, urban development and transportation (McCormack 2001). Hydroelectric power schemes have been widely used to ensure access to sustainable, cheap and clean electricity (Butcher 1990). The World Energy Council estimates that hydroelectricity production in developing countries will double between 1990 and 2020, along with increase in energy requirement as the global population continues to expand. Dams on the world's larger rivers will contribute to much of this increase and the associated involuntary resettlement of people will remain for generations (Picciotto *et al.* 2001). The principal purposes of building dams or reservoirs are to generate electricity, supply water for agriculture, industries and households (Altinbilek 2002), control floods and improve river navigation (Jackson and Sleigh 2000; Schultz 2002).

However, development often comes at a cost in ecological, social, economic and cultural terms (Choudhary 2000). Persons displaced by dams or reservoirs are a consequence of development (Scudder and Colson 1982; Cernea 1990). The construction of hydro projects usually produces a series of far-reaching and adverse environmental, social and economic impacts in the reservoir areas or nationwide (Bose *et al.* 2001; He and Chen 2001). Displacement of people is unavoidable, and the concern of displacement is how to avoid or minimise it, or how to minimise its negative impacts. If a development project is properly planned and implemented, it is possible for the affected people to become beneficiaries of the project, becoming better off than before.

Sustainable livelihoods are a main issue of sustainable development. A sustainable livelihood includes: (1) tangible benefits like low morbidity and mortality, an increasing level of education, increasing incomes through opportunities for employment; and (2) empowering the displaced people by their participation in the entire decision-making process of the development project and resettlement (Bartolome *et al.* 2000, p. 8). A major problem of rural resettlement is that the loss of farmland can hardly be compensated for with alternative land. Reconstruction of livelihoods is only possible where development takes place. Thus resettlement must be planned as an integral part of a comprehensive development project, instead of a mere restoration of incomes (Jain 1999). This brings us to the question of development in the context of resettlement and rehabilitation (Bartolome *et al.* 2000).

A development project should centre around: (1) enhancement of human capabilities; and (2) the expansion of social opportunities by addressing the social and personal constraints that restrict peoples' choices. Some critical issues relate closely to involuntary resettlement, such

as human rights, governance and accountability, participation, the complexities of resettlement goals, options and strategies, and the relevant legal and policy instruments. These factors are determinants in developmental resettlement (Bartolome *et al.* 2000). Resettlement is not a simple issue of people moving voluntarily or involuntarily from one place to another. It is not just an internal issue but also a social and political reality which links local, national, even global projects and realities in complex ways (Malkki 1990).

Improving the livelihoods of the displaced is a primary goal of displacement. The structural weakness of industrial sectors in the Three Gorges reservoir area, in conjunction with a bulk of laid-off workers in urban areas, is a major contributory factor to the problems of the rural resettlement of the TGP. The socio-economic transformations in China and the resettling of the rural people in agricultural sectors and moving some of them out of the reservoir area to resettle in other provinces through a 'distant resettlement' approach are the main contexts to understanding the ongoing processes of the TGP resettlement. This study, through researching the practice of forced resettlement associated with the TGP, especially rural resettlement, is an effort to reveal contributions of 'developmental resettlement' to the theory and practice of involuntary resettlement.

1.5 Contemporary Migration in China

Examining internal migration in China provides us with an opportunity to gain a general understanding of the broad context in which human resettlement from dam projects has been taking place. This section examines patterns, restrictions, policies of migration, new trends of rural-to-urban migration, and the impacts of migration in both the sending and receiving areas in contemporary China, where migration in the last fifty years has been more influenced by the government than any other countries. For this purpose, migration is divided into two phases: before the late 1970s and after the late 1970s, when economic reforms emerged in rural China.

1.5.1 Origin of Migration Control Before the Late 1970s

National government has played a central role in contemporary migration in China. A number of China scholars, notably Christiansen (1990), Chan (1994a), Cheng and Seldon (1994) and

Mallee (1995), have studied the 'household registration system' (*hukou*) and its impacts on population mobility from rural to urban areas. *Hukou* has been the primary apparatus controlling population mobility in China (Cheng and Seldon 1994). The *hukou* system has functioned as a major tool of social control on the basis of households. It was first established in the urban areas in 1951 and extended to the rural areas in 1955, being officially formalised as a permanent system in 1958. Some important modifications have been made since the early 1980s. In mainland China all the personal *hukou* status has two related parts: residential location (cities or towns and rural residential locations like villages or state-owned farms) and socio-economic ('agricultural' or 'non-agricultural') status. To the government, *hukou* serves not only for the purpose of blocking any rural-to-urban migration but also for overall state administration. In the '*Temporary Regulation on Urban Hukou Management*', the Ministry of Public Security (MOPS 1951) stipulated that the purpose of the regulation was to protect social order, and safeguard the safety and freedom of residence and migration. The State Council issued a '*Directive Concerning the Establishment of a Permanent System of Hukou Registration*' in 1955 (Population Research Centre of CASS 1986), requiring all changes of residence to be registered by the origin and destination governments. The strict enforcement of the rural-to-urban migration controls started in the early 1960s as a result of the devastating 'Great Natural Famine' (1960–62). The food shortage continued through the 1970s and ended in the mid 1980s. To effectively control rural-to-urban migration, *hukou* was utilised in conjunction with the practices of job assignment and rationing of living necessities in urban areas.

The heavy-industry-oriented development in the 1950s was set forth to accelerate the process of industrialization because China has been ranked as one of the nations with the smallest amount of arable land per capita in the world (World Bank 2001b). The process of initiating industrialisation in the 1950s was built on a shortage of food supply, especially grains and edible oils (Chan 1988). The government implemented artificial depression of food prices to support industrialisation (Lin *et al.* 1996). The low state price for agricultural products facilitated the transformation of accumulated funds from rural to urban areas (Christiansen 1990). 'The unified purchase and marketing of grain' (*tong gou tong xiao*) established compulsory sales to the state of specified amounts of grain at low state prices. This rationing system has been the basis of 'price scissors' between industrial commodities and agricultural products for a long time. Since urban *hukou* was the prerequisite for getting low state-priced food quota, disparities between rural and urban areas and between the agricultural and non-agricultural population resulted.

The government speeded up the process of the rural collectivisation to enhance agricultural productivity and to support industrialisation in urban areas, and urban citizens had priority over rural residents in getting rationed substances such as grain, cotton, oil, cloth, meat and sugar. Cities were of great attraction to rural dwellers. Consequently, a large number of peasants immigrated to the cities in search of jobs. To safeguard the progress towards collectivisation in rural areas and to control the total demand for food of the urban residents, the Standing Committee of the National People's Congress (NPC) issued '*Regulations on Hukou Registration in the People's Republic of China (PRC)*' in January 1958. Yet this policy was not practically implemented due to the large demand for workers in urban factories during the period of the 'Great Leap Forward' (1958). Workers were recruited from the rural areas. A typical case was the rural-urban migration from the 1950s through to the 1970s in order to develop new industrial bases in inland cities, such as Anshan, Baotou, Xi'an, Nanzhou, Daqing, and the 'Third Front Construction' of industrialisation in the south-western and central China, mainly in Sichuan, Hubei, and Shaanxi provinces (Chen *et al.* 1996). The 'Third Front Construction' aimed to prevent the nation from being attacked by the superpowers (USA and former Soviet Union), through transferring heavy industry from the eastern coastal region to the hinterland. The total population in cities and towns increased by 10 million people from 1957–59, which was the fastest growth since 1949 (CNSB 1995, p. 376). But soon after, about 26 million urban workers and their dependents were sent back to their original rural areas as a result of the failure of industrial development of the 'Great Leap Forward' (CNSB 1995, p. 376).

1.5.2 Restrictions in Changing *Hukou* Status Before the Late 1970s

Industrialisation and political factors were two important drivers of migration over this period. Transfer of *hukou* status was possible with the official approval of authorities. Migrations from the countryside to urban areas, or from smaller urban areas to larger ones were rare (Mallee 1995). Zhao (1997) used data on the number of people who changed residency status from rural to urban areas between 1949 and 1985 and also converted *hukou* status from agricultural to non-agricultural (commonly called *nongzhuanfei* in China) to calculate the migration rate which is defined as the ratio of rural population that migrates to urban areas annually. This was an average of 0.24% in China which was far lower than the international migration rate of 1.84% for the period of 1950–90 (Zhao 1997). In China, the fluctuation of migration was closely in step with the economic and political movements. Migration surged during the 'Great Leap Forward' as a result of the increased demand for

labour in the industrial sector, but it plunged during the 'Great Natural Famine' (1960–62). After a brief increase, migration experienced a setback during the 'Cultural Revolution' (1966–76). This 10-year period saw some 17 million youths who were educated in the cities and a number of intellectuals being sent to the countryside to be 're-educated' in the ways of the peasants, as it was the ideology of the 'Cultural Revolution' that peasants and manual labourers, who toiled to fulfil the basic needs of the people, were far superior than the likes of the pen-wielding office-workers or intellectuals who were perceived to be unproductively engaged in trivial pursuits that were characteristic of capitalists (Hu and Zhang 1984). Most of them returned to the cities after the disastrous movement.

However, the migration policy then made it extremely hard to change one's residency status. Under the rural *hukou* system, there were basically three routes to changing one's rural registration but none was easy. One way was to be reunited with spouse or parent(s) or be adopted by a close childless relative. The second way was to wait for the occasional recruitment of workers for urban factories. Such recruitment exercises were few and far between and farmers could not count on it. The third way was to be admitted to a college or be promoted in the army, but this had to be the most restrictive route. Generally, rural people could not depend on securing a change of household registration status to go to cities. The real power of the *hukou* system in regulating people's movement did not come from just the system itself but from its integration with other social and economic control mechanisms (Chan and Zhang 1999). Urban dwellers had many privileges, not available to peasants. Urban citizens could easily obtain employment in factories and governmental departments and buy basic necessities at low prices. They enjoyed free or cheap houses allocated by their work units, medical care, pensions, and education opportunities for their children. As a result of the inequity institutionalised by rural-urban segregation, the income gap between rural and urban people widened. Sheng and Sun (1994) estimated that the income ratio of urban residents to rural dwellers was 3.09 in 1980, taking into consideration the government subsidies on housing, health care and food. The difference in absolute income increases the resolve of rural people to move to cities. Urban residents perceived themselves as being superior to their rural counterparts. This became the historical and psychological basis for the widespread discrimination toward farmers, which still impacts profoundly on rural migration and resettlement in China today. Changing registration status from rural to urban has been a dream for most peasants. Non-agricultural *hukou* status may imply vastly different opportunities, obligations, and socioeconomic status (Chan 1996a).

1.5.3 Patterns of Migration Before the Late 1970s

The spatial patterns of migration before and after the 1980s were different. Hu and Zhang (1984) estimated that several million people moved from the eastern coastal developed cities to new development areas and key heavy-industrial bases in the north-eastern, western, and south-western regions between the 1950s and 1970s under arrangements made by the government (Figure 1.1). The mainstream of migration was from the traditionally densely populated and eastern costal areas to the sparsely populated and frontier areas: Helongjiang, Inner Mongolia, Xinjiang, Qinghai, Tibet, Yunnan, and Guizhou (Yang and Xiao 1996). According to Ma (1993), the characteristics of the migration policy were defined by the following three aspects: (1) The rural population was strictly prevented from moving into cities and towns, or converting their status from agricultural to non-agricultural; (2) Migration from towns to cities or from small cities to major cities was strictly forbidden; and (3) Migration from border areas to inland places or from less developed and developing areas to developed and well developed regions was restricted.

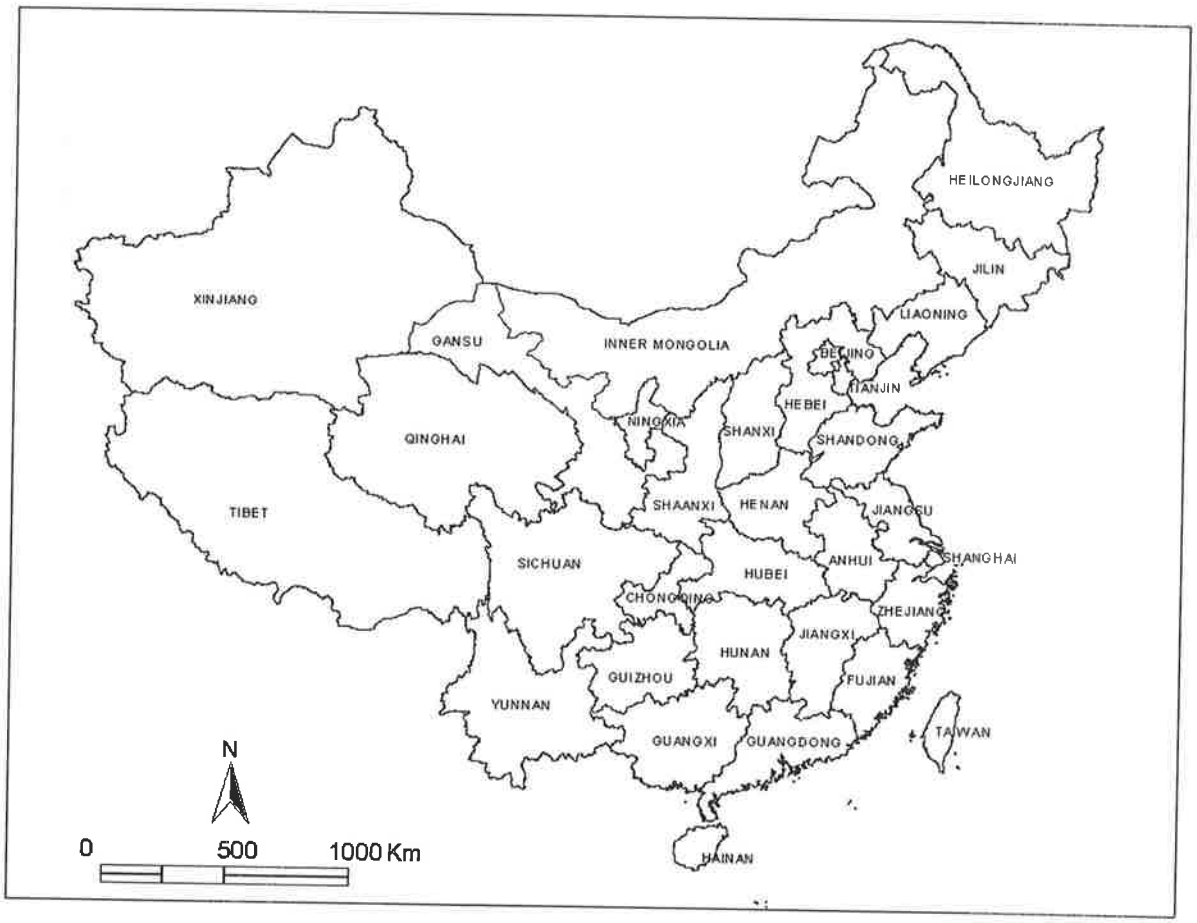


Figure 1.1 Provinces in China.

1.5.4 Floating Labourers After the Late 1970s

Commencing in late 1978, the Chinese leadership has been trying to change the economy from a sluggish, centralised, planned economy to a market-oriented economy. One of the steps taken was the replacement of rural collectivisation with the 'household responsibility system' (HRS). Under the rural collectivisation system, all members of a village worked collaboratively in the fields and the harvests were shared equally by everyone in the village. With the implementation of the HRS, each household was contracted a piece of land for which they were responsible and allowed to cultivate on their own. More significantly, whatever the land produced was theirs to keep. This created a major shift in the mindsets of the people: they were more willing to work, and work harder, since they were able to enjoy all the fruits of their labours. Consequently, productivity levels increased and surpluses in food grains and other agricultural products were created, leading to a prosperous development of agriculture in the 1980s (Oi 1999). As the productivity of each farmer increased, fewer labourers were needed to work the same area of land, the downside of which was the emergence of surplus rural labourers. Given the low level of industrialisation and the slow pace of economic growth (which is a characteristic of the early stage of development), the surplus labour was unable to be absorbed by the workforce; and this led to a large volume of temporary migration (Nelson 1976). The authorities, local officials in management and managers in industry permitted a variety of small-scale enterprises in services and light manufacturing. The economy and market were subsequently opened to overseas investors in order to increase foreign trade and investment, especially in the eastern coastal region. Since the mid-1980s, a large number of migrants have spontaneously rushed into cities without official permission.

Adoption of the HRS in rural areas in the early 1980s gave the farmers more control and responsibility over their land they worked on. Subsequently, production rates improved and the food shortage was alleviated by the mid 1980s as Lin (1992) revealed. The grain output increased by 40–50% between 1979 and 1983. The government started to relax some aspects of migration but maintained overall control. A free grain market emerged in urban areas with the abandonment of the rationing system in the early 1990s. The rural reform, together with the commodification of food, brought about two outcomes. Firstly, rural residents were now able to move to the cities in search of jobs, albeit temporarily. Secondly, the peasants had the freedom to choose whether to work on their land or not; if they so desired, they could even leave their land altogether, and instead seek employment in the cities. But the government

was principally unwilling to let rural people move into cities. It adopted a policy of relaxing restrictions on non-farm activities and in 1984 officially allowed farmers to engage in domestic trade and long-distance transportation. This policy was explained as 'leaving the land but not the village' (*li tu bu li xiang*). Since then, township and village-owned enterprises in rural areas, especially in the coastal provinces, have boomed. In the 1980s township/village enterprises (TVEs) played a leading role in transferring rural labour to non-agricultural sectors. The number of rural labourers who moved from farming into TVEs increased from 29.99 million in 1980 to 92.65 million in 1990. During the same period, China took on a new approach to urbanisation, which entailed 'limiting the expansion of major cities (population over 1 million), sensible development of medium-sized cities (a population of 0.2–0.5 million) and encouraging the development of small cities or towns (population of less than 0.2 million)' (*Renmin Ribao*1980). Migration to cities, especially big and medium-sized cities, was discouraged. With the commencement of reform of state-owned enterprises by granting them financial autonomy in the mid 1980s, there was a boom in urban construction. Many construction jobs, which were regarded as dangerous and labourious were available, especially in the four 'special economic zones' (Shengzhen, Zhuhai, Shantou and Xiamen) along the southern coastal areas. According to Banister and Taylor (1989), there were about 5 million rural construction workers employed in urban areas in 1988.

Since the 1980s, migration policy has changed from overall control to a combination of control and flexibility (Ma 1993; Zai and White 1997). The *hukou* system reforms have been characterised by conditionally opening urban residency to rural residents and relaxing some degree of the policy control of status transfer from rural to urban (Chan and Zhang 1999). As a result, the relaxation of *hukou* control has significantly increased migration propensity and has made it possible for millions of women and men to migrate. The main direction of migration is from inland areas to the coast, and from the west toward the east. 'Floating' or 'temporary population' forms the majority of migrants. The spatial patterns of migration, in terms of distance, fall into three categories: (1) to different provinces, which usually implies a long stay, returning home only during the Chinese Spring Festival (Chinese New Year). This type of migration is called 'leaving the township or villages but not the land' (*lixiang bu litu*); (2) to main cities and the provincial capital in the same province; and (3) to the main town or township/village enterprises in the same county, where migrants may return home frequently. This type of migration is called 'leaving the land but not leaving the town or villages' (*litu bu lixiang*). A recent study (He and Pooler 2002) has revealed the spatial characteristics of the

interprovincial migration flows between the early 1980s and the early 1990s and identified the causes, mainly uneven distribution of the economy and relaxed control over rural-to-urban migration.

With the growing economy, many problems inherent in the traditional industrial structures surfaced. The 15th National Party Congress of the Chinese Communist Party (*www.chinadaily.com.cn*) approved a motion to accelerate the reform of state-owned enterprises. The reform sought to convert large and medium-sized state-owned enterprises into highly regulated corporations. As the name implies, all aspects of the ownership, management and production of state-owned enterprises were entirely under the control of the state. Under the reform, such enterprises could be joint ventures with foreign investors, co-owned by various institutions or even the workers, though in most cases the state still retained majority of the ownership. As such, the management and ownership of an enterprise did not necessarily belong to one party, and administrative methods were essentially non-traditional. The reform aims to render these enterprises better adapted to the market. Many workers employed in these state-owned enterprises have been laid off. The capacity of the labour market to absorb rural labourers was greatly reduced, affecting the flow of rural labour force into cities.

Unemployment has become a serious problem since the early 1990s. The State Planning Commission estimates that about 30 million state workers will be laid off between 1998 and 2005. Millions of workers are underemployed and/or paid only partial wages. The problems of re-employment of the laid-off workers and the transformation of surplus rural labourers who have moved or will be moved to the urban areas intertwine with each other. These factors will have long-term effects on the rural to urban migration in China.

People moving out of their origin provinces to others are still required to provide family planning, education and medical certificates to the relevant authorities in their destination provinces. These certificates are prerequisites for a migrant to obtain an 'employment registration card' from the labour agency in his origin province. This card can enable him to obtain 'work permission', issued by his destination province. Rural migrants, 'peasant labourers' (*mingong*), or 'floating population', are produced in the process of China's economic reforms that encourage the diversion of rural labour into industrial production.

'Part-time farming' is a common occurrence in rural areas, especially in the eastern coastal provinces which have the highest concentrations of TVEs, as farmers are becoming increasingly aware of the many forms of non-agricultural work which pay better than working in the fields. However, remote rural areas of inland provinces still rely exclusively on agriculture. As a result, the western and central areas of China have a huge surplus of rural labourers. The flow of rural migrants is hence from the inland and western parts of China to the coastal provinces, especially from populous provinces such as Sichuan, Hunan, Henan, Hubei and Anhui to coastal regions like Guangdong, Fujian, Zhejiang, Jianshu and Shangdong provinces. Escape from poverty and improvement of living standards are the main drivers behind the migration. The rural labourers usually undertake the low-paid jobs shunned by the urbanites, which are, more often than not, dirty, difficult and dangerous, such as construction and transportation workers, kitchen helpers, cleaners or refuse collectors.

1.5.5 Temporary Migration After the Late 1970s

Studies note that there is a 'floating population' of some 80–100 million, people who 'stay' outside their own *hukou* registration place (this includes short-term visitors and people on business trips) (Chan 1996b, 1999; Yang and Xiao 1996; Zhang 2000). Temporary migration has become an important aspect of population movement in China. It has provided an important mechanism to cope with rural surplus labour and fluctuating demand for labour in urban sectors (Goldstein, A. *et al.* 1991; Goldstein, S. and Goldstein, A. 1991a; Goldstein, A. and Goldstein, S. 1996). Unlike permanent migrants, temporary migrants have not received permission to change their place of registration and convert their status of agricultural population. They are allowed to live in cities or towns as long as they like or until the government requires them to return to the countryside (Goldstein 1990). Government regulations require temporary registration for stays of three or more days in an urban area. Yet it appears that temporary residents often do not register with the local authorities. Thus, the figure of this type of 'floating population' is uncertain and imprecise.

The family, rather than the individual, is often the basic decision-making unit in migration (DeJong and Gardner 1981). While economic motives are important in migration, social factors such as the presence of supportive relatives at the destination can be decisive, leading to family-based chain migration. Migration may be ruled out in order to enable the family to stay together and assist each other irrespective of economic circumstances (Hugo 1981). The lack of government support for vulnerable groups in China, such as the poor, the disabled and

the elderly, suggests that the family has a key role in this sphere and migration is an important response to its obligations (Rowland 1992). The Chinese family structure has changed greatly since the early 1980s. As Ma (1987) pointed out, on the basis of the 1982 census, sixty-seven per cent of households consisted of two generations and fourteen per cent of one. The family allegiances placed greater emphasis on responsibilities to children and elderly parents. Nevertheless, the Chinese family remains patriarchal, despite the government's commitment to gender equality. There is still a strong preference for sons, who have better access to education, desirable employment and family inheritance, and the ideology of male dominance persists (Arnold and Liu 1986). The characteristics of family structures most likely affect the new trends of forced migration.

1.5.6 Effects of *Hukou*

Even though the *hukou* has become less stringent in the 1980s and in the 1990s, it is still in place in China, permitting urban residents to enjoy urban benefits and opportunities, e.g., assistance in education, jobs, food, housing and medical care (Chan and Zhang 1999). Children of rural migrants do not really have an equal right of compulsory education which ordinary urban children have. The migrants must pay high tuition fees, namely *zanzhu fei* (in the form of involuntary donation to education). Migrants are not entitled to subsidised housing rental or purchase in urban areas. The rent of houses is almost unaffordable for most migrants, so that they have to rent those located on the urban fringe without sanitary facilities. Migrants are required to provide three certificates and a card to be considered as a legal temporary migrant. These are: 'identification certificate' (issued by the police office of the origin county), 'temporary resident certificate' (issued by the destination police office), 'employment certificate' (issued by labour bureaus of origin counties to certify eligibility for employment), and 'employment card' (issued by the labour bureaus of destination cities to show proof of employment in the cities). The *hukou* system and these policies, together with restrictions on rural migrants continue to discourage migration from rural to urban areas.

The *hukou* system does not forbid the free flow of rural migrants, nor does it offer these migrants the right to stay in urban areas permanently. The uncertainty of their future in the city forces the migrants to think of themselves as temporary residents. The higher income and more opportunities in the cities compared to the agricultural or non-farm sectors in rural areas are the main reasons for most individual persons to migrate. However, if there is no essential change in the *hukou*, it is unlikely that rural migrants could obtain the same social status as

urban *hukou* holders. The *hukou* reforms in the 1980s and 1990s were characterised by conditionally opening urban residency to rural people and relaxing the policy but not the quota control of conversion of agricultural to non-agricultural population. A person's socio-economic eligibility is still linked with his/her *hukou* status. The current situation of distinct segregation between rural migrants and urban residents will persist with serious social consequences. To change their social and economic status is a basic requirement and ultimate wish of the migrants for their movement. As Croll (1994) identified, personal mobility is one of the dreams cherished by Chinese peasants, who believe that better lives can only be attained by moving away. There continues to exist huge differences in economic opportunity and social position between those with urban *hukou* and those with rural *hukou* status (Chan 1996b). This perception will deeply affect the rural migrants' expectations in forced TGP displacement and resettlement. As non-agricultural *hukou* status entails more privileges and opportunities, there is always a great demand for it. To be able to convert the rural or agricultural *hukou* status to the urban or non-agricultural *hukou* status by taking advantage of displacement and resettlement associated with the TGP has been one of major hopes of the rural resettlers.

1.5.7 Impacts of Migration on Origin and Destination Areas

Much internal migration is economically motivated. From a family perspective, however, individuals participate in internal migration not only to serve their country or further occupational ambitions, but also to improve or maintain the living standards of their families (Rowland 1992). Migration thus affects both the place they leave and the place to which they move (Clark 1986). A few studies on migration's impacts on the sending areas have been done in China. Generally, it is supposed that emigration has positive impacts on the rural areas due to increases of rural incomes and lowering inequality among regions (Rozelle *et al.* 1999). It eases the pressure on local land and resources, and provides valuable capital through remittances and temporary wage earnings (Balan 1981; Skeldon 1990). The dramatic growth of the 'floating population' has resulted in large amounts of cash flow between provinces through remittance or periodical returns to migrants' hometowns or villages. A large proportion of the remittances have been invested in developing processing and tertiary industries in the origin areas (Chang 1996). Some studies (Goldstein 1978; Nolan 1993) suggest that the potential for alleviating poverty through migration is enormous. The transformation of the labour force from the 'traditional' sector (agriculture) to the 'modern' (secondary and tertiary industries) indicates the different stages of social and economic

development in a country or region (Miao 1993). The initial impact on migrants' hometowns appears to stem from the new views of the migrants. Rural development is a long process. It includes not only the satisfaction of basic needs for food, housing, health, and safety, but also the improvement of life quality, accompanying improving wealth, good jobs, and enhanced educational opportunities.

Emigration is generally considered to be an effective way to transfer surplus labour force in the rural areas and reduce local population pressure. However, in some circumstances, urban areas to which rural migrants are moving into are already labour saturated (Smith 1996). In order to provide job opportunities for the urban dwellers and allow the laid-off workers to be re-employed, many large cities have taken measures to restrict the 'floating population' (Gu 1998). The emigration from countryside to cities is harder for the migrants than in previous years because of the intensive competition and restriction.

Many studies focusing on rural-to-urban migration have paid much attention to the receiving areas. Positively, inmigration helps to fill the vacancies in urban markets that are hardly appealing and difficult to fill, such as construction workers, cleaners, repairers, service workers in restaurants, babysitters, and nursemaids. This kind of work needs to be expanded in the urban economy to facilitate mass consumption (Chan 1994b). Migration provides the labour force to meet the requirements of rapid industrialisation in the opening cities and Special Economic Zones, where temporary populations are more than twice the number of permanent residents. Some studies state that the most visible impact of the 'floating people' is their important role in municipal construction projects (Shen and Dong 1992; Chang 1996).

Urban residents have portrayed a negative image of rural migrants as the source of crime and violence (70% of criminal activity is undertaken by the temporary migrants), causing crowding and violating family planning policies by having more than one child per couple (Davin 1996). Urbanites usually view those rural migrants as being inferior and discriminate against them in various ways. The limited capacity to absorb rural labourers is due to limited infrastructure and inadequate facilities and services in areas such as housing, hospitals, power, water, gas, transport, and inefficiencies in economic management and planning in urban industries. The existence of the *hukou* system has also slowed down the process of urbanisation in China. Urban governments face the pressure of investing additional money to accommodate more intensive use of infrastructure and public services. The municipal

governments and urban residents usually consider migrants as undeserving users of these services, such as public schools and low-cost housing.

Migration has promoted social change and economic growth in both the sending and receiving areas. For instance, migrants help transmit useful market information, learn technologies, and bring both physical and human capital into the hometowns, all of which are rather deficient but vital to the development of the rural economy (Smith 1996). But it also has produced some negative features to both areas. Such large population movement to the urban areas increased demand and pressures for municipal services and infrastructure, resulting in housing shortages and health impacts. The biggest and most visible impacts are in transportation and population control. The public transportation in almost all large cities has been overloaded (Chang 1996). This problem is especially pronounced during each Spring Festival season. All the railway networks from southern China to the north and from the eastern China to the west are extremely crowded, mainly caused by the floating people who are returning to their hometowns. It is very difficult for officials to control the floating population.

Most of the migrants are young male labourers. The rest of the populations are the old, female and young. This results in the 'feminisation' of labourers in rural areas. Due to a lack of strong labour force and inadequate investment in land, serious issues in the agricultural development have been produced, especially since the 1990s. The 'three-dimensional issues' of farmers, agriculture and rural development have become critical in rural China in recent years.

1.5.8 Summary

During the four decades between the 1950s and the 1990s, China experienced large-scale migration. Migrants of more than 10 million were organised by the government to the frontier provinces and regions. Some 17 million educated urban youths were sent to the countryside to receive 're-education'. Over 12 million people were displaced by the government for the construction of 86,000 reservoirs, becoming 'reservoir resettlers'. The spatial patterns of migration experienced a reversal. Before the late 1970s, migrants moved from the densely populated eastern and central provinces to sparsely populated frontier areas in the western, northern, and inland parts of the country. After the late 1970s, the direction of migration has been from the comparatively underdeveloped inland provinces, or from the western and

central parts to the developed coast, especially the eastern and southern coastal areas. Rural-to-urban movement is the main mode of migration.

The *hukou* system, a powerful social tool, has played a major role affecting social and economic development since the 1950s. It is a result of the planned and centralised economy. It divides the population into two categories (agricultural and non-agricultural), with vastly different opportunities, obligations and socio-economic status. The *hukou* system functions as confining the population within the various state-defined segments. While the *hukou* system has created many obstacles to geographical and social mobility of people, it has produced social segregation and social disparity. The low level of urbanisation was the direct result of strict restraints on migration. The economic reforms (commencing in 1978 and initiated in the rural reform) have relaxed the restriction on rural-to-urban population migration. The 'floating population' in China has played important positive roles in contributing to the fast growth of the economy in urban areas and in narrowing the gap between rural and urban areas, albeit with some adverse impacts on the receiving and sending areas.

Population migration in China relates closely to its process of economic development. Migration can be divided into three categories: (1) from the coastal urban regions to western area such as the 'Third Front Construction' and 'supporting the frontier areas' during the 1950s and 1960s; (2) urbanisation characterised by 'floating labourers' moving from rural areas to urban areas since the economic reforms in the late 1970s; and (3) migration induced by development projects. In China, 40 million of various involuntary migrants produced by projects have been induced since liberation (Shi and Chen 1999). Migration produced by various projects is characterised by being involuntary.

1.6 Developmental Resettlement Research in China

The Chinese government proposed a development-oriented resettlement policy in the mid 1980s to solve the 'left-over issues' of 'reservoir resettlers' resulting from past dam and reservoir projects and to deal with resettlement associated with the TGP. TGP 'developmental resettlement' is based on a long period of feasibility assessments and eight years of resettlement trials before formally commencing in 1993 (Xin and Jiao 1998). A pioneering systematic study on the TGP resettlement was conducted by the Changjiang Water and Resources Commission (CWRC 1997) based in Wuhan city (the capital of Hubei

province), the designer of the dam project and planner of the associated resettlement. It takes a comprehensive approach, placing emphasis on four major realms of resettlement: rural resettlement; urban (city and township seats) relocation and reconstruction, relocation of industrial and mining factories or enterprises, and relocation and reconstruction of infrastructure in the reservoir area. Its study represents the optimistic expectations of the project's decision-makers and adopts an uncritical approach. Policies on rural resettlement and relocation of industrial and mining enterprises were proved problematic and needed to be adjusted.

A number of highly localised studies have been undertaken but are largely inaccessible, being in the form of unpublished papers and reports. Such studies have been conducted mainly by officials, departments, and institutions accountable for the TGP resettlement at provincial and county levels. They are focused on local resettlement or specific aspects of the displaced people in the sending and receiving areas.

One study presented by Wei (1999) identifies some crucial issues pertaining to the resettlement policy. These include: (1) overestimating the capacity of rural resettlement to overcome the local deficiency of farmland by reclaiming uphill land and improving existing land with low yields; (2) removing and resettling rural persons uphill or away from the reservoir via the 'near resettlement' scheme, a process which may lead to deterioration of the ecological environment in the reservoir area; and (3) unpractical planning which assumed that the local secondary and tertiary sectors could absorb as much as forty per cent of rural relocatees (REG 1988).

The doctoral dissertation of Li (2000) described the process of displacement and resettlement of the TGP. It compared relocatees' experiences before and after their relocation and evaluated relocation strategies and problems, adopting an empirical approach. Some important themes relating to inequality, poverty, human resources, social, political and spiritual aspects of welfare were emphasised. The first theme was the concept of displacement and resettlement, in which relocation was seen mainly as a social process, rather than a complex process which also involves economic and environmental impacts. The second theme was rural resettlement. The operations and some consequences of the 'near resettlement' scheme were discussed, but there was little attention paid to distant resettlement, which becomes a significant strategy in dealing with rural resettlement. The third theme was the marginalisation of people after displacement. His study addressed this

issue in a general way but did not differentiate people living in different rural settings (peri-urban districts or purely rural areas). Consequently, the extent and characteristics of the risk of marginalisation among different groups of people were not examined. Equally important, vulnerable groups, for example, woman resettlers who are the major labour force in the agricultural sectors and who make up half of these displaced, did not receive specific attention. More importantly, this study did not address crucial issues in rural resettlement such as land issues, the human carrying capacity of land in the resettlement communities, the comparative quality of land and similarity in location, land scarcity and availability, and the land tenure system.

Another important study on rural resettlement and sustainable agricultural development in the Three Gorges reservoir area was conducted by the Chinese Academy of Sciences (GRICAS 2000). This was a quantitative analysis of the carrying capacity of land of the reservoir region in order to predict the capability of local resettlement in the reservoir area. It also proposed some feasible agricultural development strategies in the reservoir area. This study underlined a critical issue, which is rural resettlement and agricultural development in the reservoir area.

Internationally, studies relating to the context of the TGP resettlement focus mainly on the feasibility of the TGP (Fearnside 1988; Ryders 1988; Dai 1994, 1998), the eco-environmental issues (Luk and Whitney 1993; Vig and Axelrod 1999), and the human rights of the displaced people. International River Network (*www.irn.org*) in America and Probe International (*www.probeinternational.org*) in Canada are studies concerning the human rights of these displaced caused by the project. These studies, mainly conducted by overseas scholars, officials, and non-governmental institutions, are based on the secondary data deriving from official statistics, reports, news, and experience in other countries.

1.7 Study Areas

In seeking to achieve the aims the study employs quantitative and qualitative methodologies, based on primary fieldwork data and secondary data from relevant governmental departments and institutions. In an attempt to reflect the complex nature and trend of rural resettlement the study mainly encompasses the following two regions:

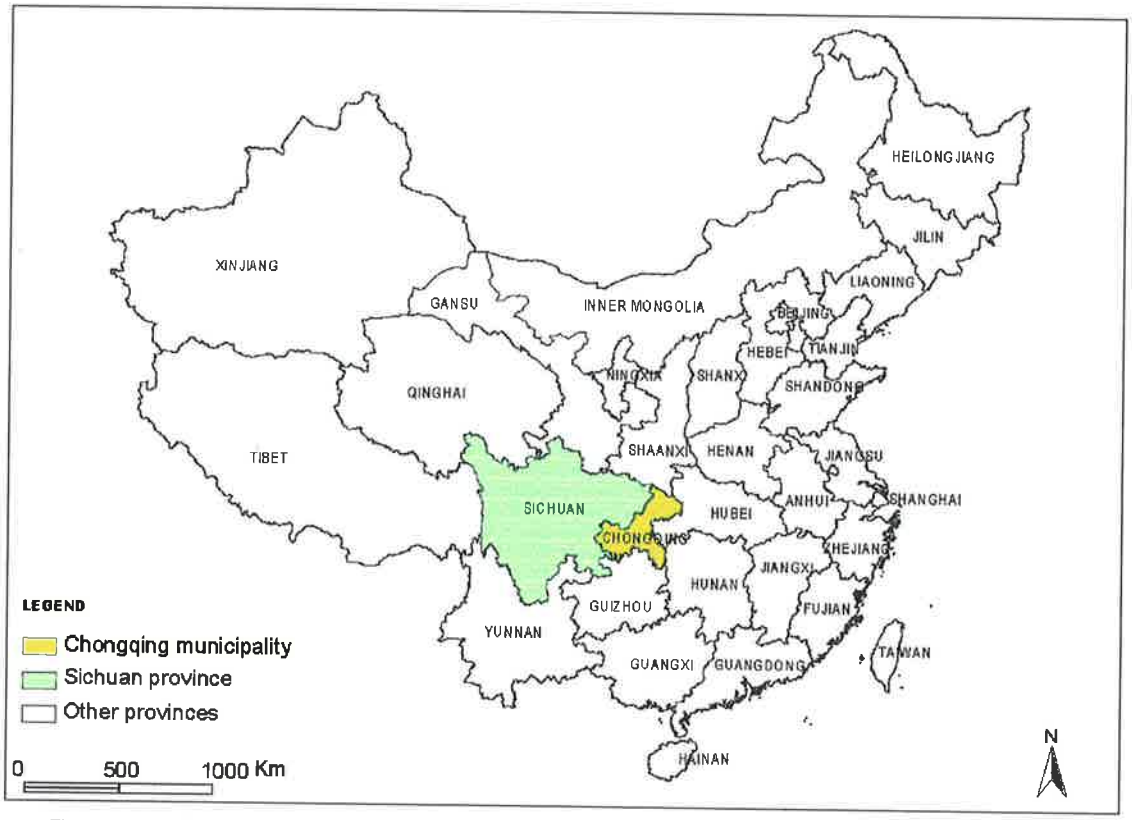


Figure 1.2 Locations of Sichuan Province and Chongqing Municipality in China.

The figure shows location of Sichuan and Chongqing, situated in the Southwest China.

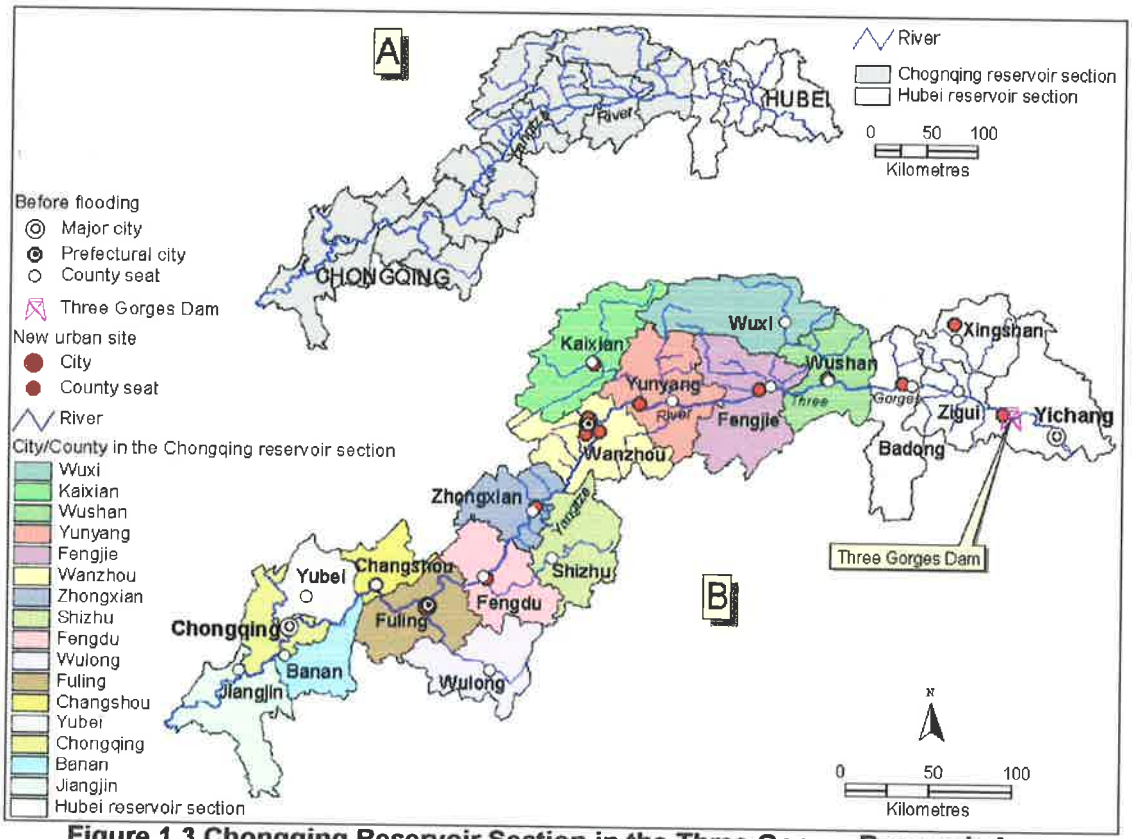


Figure 1.3 Chongqing Reservoir Section in the Three Gorges Reservoir Area.

'A' shows the two sections that the Three Gorges reservoir area is made up of: the Chongqing section and Hubei section. 'B' illustrates the various cities and counties in the Chongqing reservoir section, some of which will be completely submerged and some other affected by the construction and the Three Gorges dam.

1. Sichuan province, as shown in Figure 1.2; and
2. The Chongqing reservoir section in the Three Gorges reservoir area, as shown in Figure 1.3.

Due to the vast size and also for ease of project management, the Three Gorges reservoir area is divided into two regions – the Chongqing region and the Hubei region – on the basis of flooding status, the numbers of people to be displaced, responsibilities and administrations of displacement and resettlement. The Chongqing reservoir region is an area with the largest proportion of farmland to be inundated and population to be displaced. It makes up some 80% of the flooding losses (mainly farmland, urban sites, industrial enterprises, infrastructure, and cultural relics) and resettlers to be relocated. Since 2000 the government has organised some rural residents to move out of the reservoir area to resettle them in distant locations. Eleven provinces and municipalities were designated to resettle 70,000 rural citizens from 5 counties in the Chongqing reservoir region in 2000–02. Sichuan province is the largest destination area in terms of the numbers of migrants. Kaixian County in the Chongqing reservoir area and Deyang city in Sichuan have been selected as case studies. The micro dimension of the study involves a number of migrant communities at the lowest administrative level of the township and village. The administrative levels in use in China are, in decreasing order, the State, Province, County, Township and Village. Three categories of migrants were investigated: people displaced by the NR approach in the reservoir areas; people having been displaced via the GODR scheme in Sichuan; and people to be displaced in the reservoir area.

When conducting the survey on the number of affected population and losses of tangible assets in 1991–92, the Changjiang (Yangtze) Water Resources Commission (CWRC) defined a 'migrant' produced by the TGP as an individual who resides in the areas below the elevation of 177-metre (175-metre inundation line plus a 2-metre buffer zone to accommodate variations in water levels due to waves and wind) and must be relocated. This definition is applied in this study. Throughout the discussion, the terms 'resettlers' and 'migrants' associated with the TGP are used interchangeably, and both refer to persons (male and female) displaced or to be displaced by the TGP.

1.8 Organisation of the Thesis

The thesis is organised into 11 chapters. Chapter 2 is a literature review. This chapter identifies the main outcomes of DIDR to gain an insight into how impoverishment is caused by hydro projects. It briefly summarises studies on the consequences of people caused by DIDR and the present models for research into involuntary resettlement. In addition it reviews some outcomes of displacement of resettlers produced by past reservoir and dam projects. The factors that restrict successful involuntary resettlement are then outlined.

Chapter 3 presents the research methodologies and data sources. In order to gain primary empirical data and secondary data, fieldwork was conducted in the case study areas. The survey method used in the investigation of both migrant and host households was a 'location-centred' approach so as to more accurately locate the migrant categories with which this study is concerned. In-depth interviews and a set of carefully structured questionnaires were employed in interviews of a variety of categories of target respondents. Government documents, both published and unpublished, were the main secondary information source used. Quantitative and qualitative analyses are adopted. The techniques of geographical information systems (GIS) are used in analysing the human carrying capacity of land and land use planning at a resettlement community level.

Chapter 4 outlines the institutional framework of developmental resettlement in the TGP. It includes a description of policies, principles, law and regulation systems, and participation of the affected people. A discussion of rural resettlement approaches reveals how the resettlement policy and principles impact on the options of the migrants in the different rural resettlement schemes and the corresponding consequences.

Chapter 5 examines the critical aspects of developmental resettlement from economic, environmental, and social perspectives. It attempts to establish a system of assessment of the impacts of displacement and resettlement on the development of the Three Gorges reservoir area and resettlement areas.

Chapter 6 analyses the issue of local land availability through the 'near resettlement' scheme. *Yunan* village in *Kaixian* County is selected as a case study area. Based on recent landuse survey and population data of the study community and using GIS-based multi-criteria

analysis in landuse planning, this chapter reveals the current characteristics and future changes of landuse in both the inundation and resettlement areas. The study suggests that resettlement should take into consideration the carrying capacity of the land. This study from a community standpoint sheds light on the interplay between landuse planning and migrant resettlement and provides constructive suggestions for the TGP resettlement decision-making on a macro scale.

Chapter 7 puts particular emphasis on other aspects of land issues, which strongly affect the success of rural resettlement. It examines the process and consequences of rural resettlement via the 'near resettlement' approach. Kaixian County in the Chongqing reservoir section was selected as a case study area. A number of critical issues relating to land, such as compensation for lost land, land scarcity, land protection, the land tenure system in rural China, and the change of perceptions of migrants in different geographical locations to land-based resettlement schemes, are analysed.

Chapter 8 focuses on the new trend of strategic adjustment in the rural resettlement policy and scheme. It maps out the spatial and temporal patterns and nature of GODR over the 11 recipient provinces and municipalities in China. The distant resettlement is agriculture-based. Issues on land redistribution in host communities and rational allocations of compensation and funds between the destination and sending areas and between the nation and relocatees are analysed. It reveals that planning for re-establishment of production and income sources of the relocatees in their new environment remains inadequate. Whether or not distant resettlement could bring about sustainable livelihoods and restoration of production for the displaced persons remains to be seen. Advantages and disadvantages of administrative measurements in the process of resettlement are examined.

Chapter 9 focuses on the GODR and its impacts on the displaced people and resettlement communities. Sichuan province was selected as the case study area. This chapter reveals some imperative issues in the implementation of the GODR. These include resettlement location selections, inadequate and inequitable compensation for migrants in cash and in kind (land), potential conflicts of interests and resources between displaced people and host residents, resettlement patterns and social integration of migrants.

Chapter 10 examines the status, roles and some development issues of rural woman resettlers. This chapter reveals that some important gender-related aspects are not improved during the

involuntary displacement. Women are the main labour force remaining in agricultural sectors. Woman resettlers are more likely to become impoverished than men. Marriage is a means for some women to remain in or move to the reservoir area to improve their socio-economic status. Bias in granting of 'migrant' status to married women, generally low levels of education and limited skills are critical issues. It is imperative that resettlement authorities integrate a gender perspective into resettlement policies and resettlement schemes.

The main findings of the research are summarised in the last chapter and their implications for policy makers and planners highlighted. Contributions of the 'developmental resettlement' associated with the TGP to the theory and practice of involuntary migration and resettlement, and further research directions are also examined.

Chapter Two

INVOLUNTARY DISPLACEMENT: A REVIEW

This chapter reviews the literature with respect to the principal concepts and main theoretical perspectives relating to involuntary migration and identifies the key issues in practice that have shaped the process of DIDR. It examines the problematic situations of large dam constructions worldwide, especially in the underdeveloped countries, including China, and the far-reaching and adverse impacts of these hydro projects on reservoir areas and resettlers displaced. Some important conceptualised models concerning the process, objectives, operations and consequences of DIDR are discussed. Finally a range of factors constraining the actual processes of resettlement and causing impoverishment risks of the displaced people after resettlement are analysed.

2.1 Involuntary Displacement Caused by Hydro Projects

2.1.1 Globally

The principal purposes of dams and reservoirs are to generate electricity, supply water for agriculture, industries and households, control floods, assist river navigation by providing regular flows and drowning rapids, and developing reservoir fisheries. Hydroelectricity provides twenty per cent of the global electricity consumption and is regarded as an environmentally sustainable and clean (Butcher 1990) and socially sustainable energy (Cernea 1997). Economic demands are the key incentives for building dams and reservoirs. Financial and political interests also play important roles in the decision-making process of dam and reservoir construction decision-making (WCD 2000). A dam project usually requires substantial amounts of investment and a long construction period. It often produces a series of far-reaching eco-environmental, social and economic consequences in reservoir areas. Moreover, it imposes adverse impacts on people who must be displaced to give way for the dams and reservoirs. A World Bank review of 192 projects worldwide for the period from 1986 to 1993 estimated that on average 4 million people were displaced annually by the 300 largest dams that entered into construction every year (World Bank 1994).

There are more than 45,000 large dams (higher than 15 metres) in the world, of which over 300 are major dams (at least 150 metres high). China alone has around 19,000 large dams and is ranked in first place in terms of the number of large dams. In second place is America with some 5,500 large dams, followed by Russia, Japan and India. Although the rate at which large dams are completed has reduced from around 1,000 annually between the 1950s and the mid-1970s to around 260 during the early 1990s, the magnitude of large dams is greater than ever before. Dam construction is mainly carried out in developing countries.

The main era for western countries to tap extensively into hydro energy and build enormous dams and reservoirs was before the 1950s. This provides not only much experience of dam construction but also lessons on the impacts of large-scale water development projects such as soil salination, decline or elimination of fisheries, elimination of wetland habitat, destruction of native cultures, agricultural pollution, reservoir sedimentation and dam safety. Traditionally, the assessment of the proposed dam focused on engineering feasibility and economic analyses, often excluding the environmental, ecological, and social factors. The main lesson from many water projects completed in developed countries is that people should pay particular attention not only to economic possibility evaluation but also to all environmental and social impact assessments, especially the cumulative impacts of dam operations (Beard 1996).

2.1.2 In Developing Countries

The land occupied by large dams all over the world is more than 400,000 km^2, or 0.3% of the world's land area (IRN 2001a). The impact of land inundation is much greater than the figure suggests because river valley land provides the world's most fertile farmland, diverse habitats and wetland ecosystems.

Dam construction is concentrated in developing regions: Asia, Africa, and South America, especially in East, South, and Southeast Asia where 85% of the people displaced by World Bank-financed projects live. China, India, Brazil, and Indonesia presently are the top four countries in terms of the numbers of people displaced by Bank-financed projects (OED 1998b). The World Commission on Dams (WCD) estimates that the Bank has provided almost US$75 billion (in 1998 dollars) for 538 large dams, in 92 countries, including many of the world's largest and most controversial projects. The number of people forcibly resettled by these dam projects alone totals 10 million or more. However, according to 1994

'*Bankwide Resettlement Review*' the number of Bank-funded dams that improved the income of resettlers was only one. It is noted that the average percentage increase in the number of people to be resettled at completion compared to the estimates done at the time of appraisal is 47% (WCD 1994).

While 4 million people are to be displaced by large dams annually, 6 million are to be relocated by urban or transportation infrastructure projects that are initiated yearly. People considered to be affected are those who stand to lose all or part of their tangible and intangible assets, including homes, communities, farm lands, natural resources (such as forests, rangelands, fishing areas), important cultural sites, commercial properties, tenancy, income-earning opportunities, and social and cultural networks and activities (ADB 1998).

Around 86,000 reservoirs had been built in China by the early 1990s, of which 369 were large-sized reservoirs (CNSB 1993, p.351). While China's success in building so many dams and reservoirs has fueled economic development and provided electricity, it has also paid enormous human costs in the form of the large number of people uprooted from their homes. After years of damming the country's large rivers and their tributaries, 10.2 million people were displaced and officially recognised as 'reservoir settlers' by the late 1980s (Zhang 1988, p.40). This figure has been updated to over 17 million with the natural growth of population. China has constructed some 70 large and medium-sized reservoirs and dams since 1979, including Gezhouba and Ertan on the Yangtze River. The two largest ongoing hydro projects are the TGP on the Yangtze River and Xiaolangdi on the Yellow River (in Henan and Shanxi provinces) which will displace 1.3 million and some 180,000 people respectively (World Bank 1998). The dams and reservoirs already built on the tributaries and the main course of the Yangtze River alone have resulted in some 10 million people displaced (Jun 2000). The displacement and resettlement which resulted from the constructions of reservoirs in China before the 1980s can be summarised as follows (Jun 2000).

1. The majority of the displaced people were farmers. They were seldom consulted in advance and nearly always inadequately compensated.
2. About half of the resettlers were displaced by large-scale water projects owned and financed by the state.
3. As victims of obligatory relocation, with inadequate compensation and farmland destruction, an overwhelming number of the displaced farmers became considerably

poorer than before they were moved and worse off than their neighbours who were not displaced.

Five categories of poverty-stricken areas in China in the late 1980s were identified (Kang 1995). These are: (1) old areas, which were revolutionary bases during the war era before China's liberation in 1949; (2) minority areas, inhabiting 55 minority nationalities other than Han Chinese people; (3) mountainous areas (non-hospitable and remote mountainous regions); (4) frontier areas (remote areas along the boundary of China and other adjacent countries); and (5) reservoir areas, where dams and reservoirs are situated. These poverty-stricken areas are mostly located in the western part of China and are mountainous rural regions. The Three Gorges reservoir area is one of the latter type of poverty-stricken areas.

China has carried out a plan for poverty reduction since 1987. There were a total of 222 million people living in 592 poverty-stricken areas in 1999, making up 17.6% of the total population in China. Half of the poverty-stricken population inhabits western China, encompassing the Three Gorges reservoir region. The Chinese government has made every effort to alleviate poverty by providing financial aid, developing education, and particularly equipping and improving water conservation facilities to solve the problems of drinking water for people and livestock (MWR 2001). The problem of food insecurity has improved considerably.

China's leading poverty-relief agency stated in a 1989 publication (Jun 2000) that more than 7 million of the country's existing 12 million reservoir resettlers were living in 'extreme poverty', suffering from acute shortages of food, clothing and decent shelter. These 'reservoir resettlers' lived under the official 'poverty line', which was set between an annual income of 150 to 300 *yuan* (US$ 1=RMB 8.27 *yuan* as in 2000), varying by regional differences of prices for food and clothing. The government examined these problems and named them as 'seven difficulties' (*qi nan*) and 'four inadequacies' (*si cha*) (Jun 2000). The 'seven difficulties' included shortages of electricity, drinking water, schools, food, medical services, and means of communication and transportation. The 'four inadequacies' referred to the poor quality of irrigation, housing, flood prevention and reservoir maintenance facilities.

To ease these problems, China, perhaps being the first country to attempt to systematically highlight the problems encountered by reservoir settlers, initiated a new policy and institutional measures in the 1980s. In 1986 the Ministry of Water Resources and Electric

Power (MWREP) embarked on a 1,900 million *yuan* rehabilitation program at 46 resettlement areas where 5 million reservoir resettlers could not maintain a basic standard of living. Although living conditions of these reservoir settlers had been improved by the early 1990s, a 1994 World Bank report cited the Chinese government as saying that 46% of the country's reservoir resettlers had yet to be 'properly resettled' and that they 'were at great risk' (Jun 2000, p.5). In the Bank-financed Yantan project (in Guangxi Autonomous Region), resettlers have experienced very high unemployment rates and most remain dependent on government grain supplies or rations (Kimura and Travers 1993). Sixty percent of the resettled residents caused by Wuqiangxi (in Hunan province) still live below the poverty level (*Hunan Ribao* 15 November 1996). Furthermore, many of those shunted aside for dams built before the mid 1980s are still protesting quietly at their continuing miserable state, particularly at Dongpinghu in Shandong (278,000), Xinanjiang in Zhejiang (306,000), Sanmenxia in Henan/Shaanxi (319,000), Jinzhai in Anhui (100,000), Xinfeng in Guangdong (293,000) and Danjiangkou in Hubei (383,000) (Stein 1998). The Resettlement Office of the Ministry of Water Resources (ROMWR 1988) evaluated the outcomes of dam construction over the past three decades before the early 1980s, concluding that one third of the displaced had 're-established their lives to satisfactory standards'; another one third managed only 'subsistence livelihoods'; and the remaining one third were 'in miserable poverty'. China's dam resettlement problems remain acute.

2.1.3 Consequences of Involuntary Resettlement

- **Impoverishment**

Involuntary resettlement caused by hydro development has produced a wide range of economic, social, and environmental outcomes. Cernea (1988, p.7–8) indicates that:

> By its nature, displacement is always an extraordinarily disruptive and painful process, economically and culturally. It dismantles production systems, it disorganises entire human communities and it breaks up long established social networks. By destroying productive assets and disorganising production systems, it creates a high risk of chronic impoverishment and pushes groups of people into a condition of transitory or permanent food insecurity. Resettlement also causes severe environmental effects and the loss of valuable natural resources. Research has found that forced resettlement also tends to be associated with increased stress (psychological and social-cultural), and heightened morbidity and mortality rates.

Bartolome *et al.* (2000, p.22–26) note that:

> The majority of the people who have been displaced and negatively affected are poor and vulnerable. Moreover, for the vast majority of these people, resettlement has been an impoverishing and disempowering experience. Those dams intended as development projects have left millions of people around the world poorer and more insecure is a painful contradiction...The dismantling of the organisation of production and the loss of access to natural resources and livelihoods of the displaced have rarely been restored through the process of displacement and resettlement. This results in most of the resettled people being vulnerable to poverty and distress.

The most problematic consequence of resettlement is impoverishment. Cernea (1998, p. 43–44) identified eight risks relating to impoverishment with which the displaced people were most often confronted: landlessness, joblessness, homelessness, marginalisation, increased morbidity and mortality, food insecurity, loss of access to common property and services, and social disarticulation. These risks render resettlement inherently problematic, with absolute impoverishment and disempowerment being the rule rather than the exception with respect to persons displaced around the world (Bartolome *et al.* 2000).

The World Bank has conducted two major studies to examine the implementation outcomes of its financed projects worldwide. The first study was conducted in 1993/94 to examine how resettlement was handled in these older projects (between 1986 and 1993), to assess the outcomes and draw lessons for satisfactory resettlement in the future. Four hydro projects (two in India, one in Thailand and one in Ghana) were selected as samples. This review found that three of the examined four projects failed to maintain pre-project family incomes. Although water, education, and other social infrastructure and services had been improved, the majority of resettlers were dissatisfied with both compensation for lost assets and resettlement to new homes, farms and occupations. This review concluded that the weight of available evidence pointed to unsatisfactory income restoration more frequently than to satisfactory outcomes (OED 1994). The second study was undertaken in 1998, evaluating 8 out of 141 Bank-assisted infrastructure projects involving resettlement (OED 1998b). It found that most of the projects did not achieve the goals set up in the projects, except for Shuikou and Yantan in China. The Bank regarded the Shuikou project in the early 1990s as 'a best-practice example of properly planned and executed involuntary resettlement' (OED 1998b, p. 1). The World Bank documented that:

> Involuntary resettlement under development projects, if unmitigated, often gives rise to severe economic, social and environmental risks: productive systems are dismantled; people face impoverishment when their productive assets or income sources are lost; people are relocated to environments where their productive skills may be less applicable and the competition for resources greater; community institutions and social networks are weakened; kin group dispersed; and cultural identity, traditional authority, and the potential for mutual help are diminished or lost (World Bank (2001a).

These consequences appear not only in developing countries but also in developed countries. In America, for instance, the Tennessee Valley Authority established by the American federal government in 1933 has inspired numerous river basin development authorities worldwide, so much so that it is regarded as synonymous with dam building. However, despite tens of billions of dollars invested into the Tennessee Basin, the population there is in many ways poorer than those living in nearby areas which did not 'benefit' from the river basin development project (IRN 2001b).

The visible consequences in involuntary displacement are people's losses of livelihoods and production conditions and their potential impoverishment. Many projects have showed that impoverishment can easily and frequently occur in developing countries (CRES 2001). In India, about 13.5 million persons (e.g., 240,000 from the Upper Krishna project, 40,000 people from the Maharashtra project) have been relocated (Dwivedi 1999). In Thailand, communities affected by Pak Mun dam also have suffered serious problems of displacement since this World Bank-funded dam was completed in 1994. The dam failed to meet its projected benefits and has had substantial impacts on fisheries, resulting in an economic loss to villagers at about US$1.4 million per annum (WCD 2000). In Brazil, the Itaparica Dam caused the displacement of more than 40,000 people. Thirteen years after construction, only a small portion of the promised irrigation projects, critical in the arid region, have been fully implemented. The affected families are far worse off today than before the dam was built (WCD 2000).

The lack of arable land and inadequate monetary compensation for the people displaced are two major reasons which account for the serious economic, social, and environmental consequences of displacement produced by hydro projects. Economists and policy decision-makers have much concern about 'income poverty'. Dr. Nicholas Stern, the deputy director of the World Bank, emphasises that poverty is a 'multi-dimensional' phenomenon. Income, education and consumption structure should be the indicators of poverty rather than precise measurements of poverty as listed by the conventional concepts (*www.ccer.pku.edu.cn/newsletter/2001/268.htm*). This understanding of poverty addresses its three characteristics: lack of opportunity to participate in economic activities; powerlessness in decision-making on important fields relating to the fate of people; and vulnerability or the lack of security in disease, food availability and economic inflation. Neither international law nor national legal systems make adequate provisions for development-induced migration.

Poorly informed and planned, non-consultative and badly implemented resettlement projects continue to result in impoverishment and social disruption (Wet 2002).

- **Land loss**

One of the most irreversible impacts of hydro projects on environment is permanent land inundation in reservoir areas. Inadequacy of land to resettle migrants is a critical issue worldwide. Acquiring land for reservoir construction eliminates the means of livelihood for the people dependent on that land (OED 1998a). Land lost cannot often be readily replaced with other land near reservoir areas or in distant relocation sites beyond reservoir areas because the general availability of arable land supply in the world has been limited with increasing human activities: deforestation, degradation of land, and increase of population in the 21st century. Lands submerged and to be submerged are usually fertile areas in valleys or narrow plains alongside the banks of rivers, pushing people into infertile land uphill or away from the reservoirs (Li *et al.* 2001)

Land provision to minority groups and vulnerable groups like female resettlers is another issue in land-based resettlement. In India, for example, more than 2,000 tribal people from the Narmada valley, along with representatives from the affected villages from the states of Madhya Pradesh and Gujarat, launched an indefinite mass action in Mumbai (Bombay) in early September 2001 to protest the treatment of people affected by the Sardar Sarovar dam project. The protests demanded that the government of Maharashtra solve the land rights of tribal people in the submergence zone. Land issues occurred in two projects (Kpong Hydro and Nangbeto Hydro) in Ghana. Resettlement led to deterioration in host-resettler relations and resulted in land disputes due to inadequate land provision (OED 1998a).

Danjiangkou and Sanmenxia, two representatives of reservoir projects in China, provide examples of severe land issues after resettlement. Danjiangkou reservoir is situated on the Han River, a tributary of the Yangtze River. This reservoir was primarily designed to become the water-delivering hub on the mid route of the proposed South-to-North Trans-River Basin Water Project within 10 years. During its construction period from 1958 to 1973, 382,000 people were displaced and the majority of them were peasants. The inundated cultivated land was 28,600 ha. The livelihood and production of the 'reservoir resettlers' have improved to some extent. The annual per capita income reached 1,124 *yuan* and the society has become

more stable in the reservoir area (Survey Group 2001a). However, the main 'left-over' problems of this project included not only inadequate compensation but also the repeated displacement of people. Many resettlement communities are still very poor due to severe inadequacy of land. Resettlers have to make use of land in the 'fluctuating zone', which is periodically submerged (during the winter when the water fills up the reservoir and the water level raises) and exposed (when water is discharged from the reservoir during the summer and autumn) every year. Agricultural production relying on such fluctuating land is extremely unstable. Taking into consideration the natural growth of population, the number of the resettlers caused by Danjiangkou has amounted to 690,000. The country has to work out another plan to tackle the issue of poverty, investing 2,500 *yuan* per migrant for six years beginning 2001. The ultimate measure to adopt may be to remove the resettlers from locations where are incapable of supporting basic living, and resettle them in other places.

Sanmenxia hydro project flooded over 66,667 ha of land in four counties in Shaanxi province, of which 50,000 ha is fertile cultivated land. This project resulted in 285,300 resettlers. A specific feature of its resettlement is that many rural relocatees have returned to the reservoir area after their distant resettlement, resettling in their origin Shaanxi province. With the natural increase of population, the number of migrants had amounted to 473,000 by the end of 2000 (Survey Group 2001b). Some 31,500 migrants who were once moved out of Shaanxi province through 'distant resettlement' and resettled in adjacent Ningxia Autonomous Region, among the minority *Hui* nationality people (Chinese-speaking Muslims), started to return to the reservoir area during the Natural Disaster Period (1960–62). The reason was because the *Han* Chinese resettlers could not adapt to their new environment. They could not integrate themselves into the local *Hui* minority groups, and production measures were also different. The 'reverse flow of reservoir resettlers' (*shuiku yimin daoliu*) lasted until the mid 1980s (Jun 2000, p. 14). Relative poverty between the resettlers and the local farmers becomes another big problem (Survey Group 2001b).

In the TGP resettlement project, the government has pledged that the average amount of land for each migrant will be maintained at around 0.05 ha after displacement. Due to a shortage of cultivated land, a struggling physical and economic environment and an underdeveloped infrastructure, the challenge to successfully resettle all the rural persons in the reservoir area is intensive. The earlier policy on the TGP resettlement simply stressed the reclamation of land and the removal of people uphill within their origin counties. About 60% of the rural residents were designated to continue agricultural activities (REG 1988). It was not until

1998 that the central government realised that deforestation in the upper reaches of the Yangtze River was responsible for serious floods and that clearing of these areas for displaced people must be limited. This realisation has led to significant policy changes placing greater emphasis on distant resettlement. While this policy change is imperative to ensure the long-term sustainability in the Three Gorges reservoir area, it has raised new and unanticipated challenges to resettlement (Steil and Duan 2002). The government planned to move 125,000 people out of the reservoir area, whether or not the 'distant resettlement' schemes can solve the contradiction between land supply and the people's demands.

2.2 Models and Perspectives of Involuntary Resettlement

Involuntary displacement and resettlement occur under particular historical, political, social and economic contexts and have various implications for the people involved. Therefore, displacement and resettlement have been studied by many different disciplines and generated several models and perspectives. This section briefly discusses some analytical models which have had important impacts on our understanding of forced migration and resettlement. The discussion will focus on the concepts used in these models and perspectives and aim to identify inherent strengths and limitations. The analysis of existing models serves as a starting point for the examination of the developmental resettlement associated with the TGP that is presented in the following chapters.

2.2.1 Stress Model

This model presents one of the earliest attempts in social science to formulate a coherent analytical framework for involuntary resettlement. According to Scudder and Colson (1982) stress is a multi-dimensional phenomenon, involving physiological, psychological and socio-cultural components. This model is deeply rooted in the professional interest in community relocation of the two scholars' anthropological study of the forced displacement of some 60,000 people pertaining to the damming of the Zambezi River in Rhodesia in the late 1950s (Colson 1971; Scudder 1973, 1993). The 'stress model' emphasises the psychological and social behavioural responses of relocatees. It is based on the hypothesis that every relocated community passes through a series of distinct stages, each of which can be characterised by a particular behavioural pattern. They identified five graded stages in the process of

resettlement: the planning stage, the recruitment stage, the transition stage, the stage of potential development and the handing over/incorporation stage.

The first stage underlines that in the context of DIDR many changes occur even before people become aware that they are going to be removed (Scudder 1993). People who are to be displaced may find themselves worse off than their neighbours. The second stage is a period when recruitment occurs and when the resettlement site is being prepared with infrastructure development and other basic facilities. At this stage people will usually experience a certain amount of psychological stress as they begin to think about and anticipate their uncertain future. The degree and type of stress depends upon whether or not they have volunteered for resettlement. Following next is the 'transition stage' which involves the physical displacement and may last for many years. This stage is the most painful one because people experience physiological, psychological and socio-cultural stress. The physiological stress is reflected in the increasing morbidity and mortality rates that are typically caused by factors such as increased population densities and inadequate water and food supplies. The psychological stress experienced during the recruitment phase increases during this stage because people realise that the original familiar environment has gone and that they have to learn to adapt to the new and strange environment. Scudder (1993, p. 132) notes that psychological stress can be disaggregated into grieving for a lost home, anxiety about the future and the sense of powerlessness due to an awareness that they are unable to protect their community, household and individual welfare from outsiders. Socio-cultural stress refers to the anxiety produced when existing cultural practices and social institutions prove deficient or irrelevant and people are compelled to modify them or create new but more appropriate ones. At the 'transition stage', the typical behaviour is that displaced people initially avoid experimenting with new behaviours and practices and instead turn inward to reduce stress. The critical period is during the stage of potential development. It is characterised by a more extrovert attitude and increasing willingness to take risks and experiment with innovative forms of production or invest in alternative assets such as children's education and small businesses (Scudder 1981, p. 5). In this stage new communities in the resettlement locations may start to form. People begin to improve their homes and buy various desired commodities. They also begin to construct communal facilities to facilitate social integration (Scudder 1993). The 'incorporation or handing over stage' is the final phase. This stage is actually an examination of the process of resettlement and its planning. It concerns the sustainable development of not only the first generation of settlers but also their successors.

The 'stress model' attempts to explain the complex relationships that exist between economic, social and psychological dimensions and addresses some major preconditions for a successful development process. Moreover, the attempts to assess the long-term impacts of a resettlement project on the first and second generations, which is often overlooked in the initial resettlement plans, are critical for sustainable livelihoods. This model addresses different characteristics of displaced people at different stages. This is very instructive for resettlement institutions to work out objectives and planning of resettlement varying in temporal dimension.

However, this model has two deficiencies. Firstly, it is built on a hypothesis that the five stages are distinct and occur consecutively. As a matter of fact, Scudder (1993, p. 135) points out that 'not only can stages overlap' but also in some cases 'the region of resettlement will include communities representing different stages in the resettlement process'. Secondly, this model implies that relocatees are only passive victims in the process of displacement and resettlement. In reality they are, to certain extent, capable of resettling themselves and re-constructing their livelihoods, and should be encouraged to do so (Partridge 1989; Weist 1995).

2.2.2 Impoverishment Risks and Reconstruction (IRR) Model

Cernea (1996b) identifies eight different sub-processes in DIDR, the convergent and cumulative effect of which is the rapid onset of impoverishment. He recommends that the model be used as a tool to anticipate the major risks of DIDR, explain the behavioural responses of the displaced and guide the reconstruction of their livelihoods. Like the 'stress model' discussed, the IRR model focuses primarily on involuntary community relocation. This model is founded on the reality that disastrous effects continue to plague displacement operations in many countries and political tension surrounding involuntary resettlement can increase over time (Cernea 1995, p. 250). It aims to explain some of the typical short and long-term risks following displacement. It summarises eight key risks commonly existing in displacement, as briefly described as follows (Cernea 1995, p. 231– 232):

> **Landlessness**: Recruitment or expropriation of land result in people displaced losing the most fundamental productive material. People depend upon land for agriculture, commercial activities, and livelihoods. This is the principal form of de-capitalisation and pauperisation of displaced people, through loss of both physical and man-made capital.

Joblessness: Loss of employment particularly affects people residing in urban sites. It also occurs regularly in rural areas, displacing landless labourers and service workers, artisans and small businessmen. Creating new job opportunities is as hard as finding empty lands. This will result in unemployment or under-employment long after physical resettlement.

Homelessness: Losses of houses or shelters are temporary for most displaced people, but for some it remains a chronic condition. In a broader cultural sense, homelessness means of loss of a groups' cultural space and identity, which leads to cultural impoverishment.

Marginalisation: This risk occurs when families lose economic power and slide downwards: middle income farm-households do not become landless, but become small landholders; small shopkeepers and craftsmen are downsized and slip below poverty thresholds. Relative marginalisation often starts long before the actual displacement. It often begins when governments or institutions condemn the land for future flooding. Land is also often devalued. New public and private infrastructural investments are prohibited in the reservoir area. Social services are not allowed to be expanded.

Increased morbidity: Serious decrease in health levels result from the outbreak of relocation-related parasitic and vector-born diseases (malaria, schistosomiasis) and from increased stress and psychological traumas. Vulnerability to illness is increased, and unsafe water supply and waste systems tend to spread infectious diseases, diarrhoea, dysentery, etc.

Food insecurity: Forced uprooting increases the risk that people will fall into chronic food insecurity, defined as calorie-protein intake levels below the minimum necessary for normal growth and work. Sudden drops in food crop availability and /or incomes are certain during physical relocation, and hunger or undernourishment tends to become lingering long-term effects.

Loss of access to common property: For poor people, particularly for the landless and otherwise assetless, loss of access to non-individual, common property assets (forested lands, water bodies, grazing lands, etc.) belonging to communities that are relocated represents a cause of income and livelihood deterioration that is systematically overlooked and typically undercompensated in government schemes.

Social dis-articulation: The dismantling of communities' social organisation structures, the dispersion of informal and formal networks, associations, local societies, etc., is an expensive yet unquantified loss of social ways, uncounted and unrecognised by planners, and are among the most pervasive causes of enduring impoverishment and dis-empowerment.

The IRR model is preoccupied with the social and economic impacts on livelihoods and the health of the relocated people. Impoverishment can be social, cultural and economic. Especially the notions of social and economic impoverishment need to be better understood and an appropriate analytical framework developed. In addition to understanding each sub-process of the potential impoverishment risks, it is important that a more integrative approach needs to be developed which analyses the interplay among the three types of impoverishment – social, cultural, and economic. This is because displaced people have to confront various threats caused by combined social, cultural and economic factors. The IRR model encourages such a cross-sectoral perspective in analysis and policy-making. However, concrete suggestions for how to carry out cross-sectoral research and develop feasible cross-sectoral policies are not sufficiently explicit in the model, as assessed by Cernea (1995, p. 253) himself.

Whilst a dynamic understanding of impoverishment processes is at the core of the IRR model, so are the notions of reconstruction and the transformations of impoverishment into the actuality of reconstruction. Differing from the 'stress model' which employs a temporal framework that divides displacement and resettlement into distinct linear phrases, the IRR model does not give any priority to the identification of such similar phases. The IRR model's approach reinforces the long-term development. This model typically concerns the displacement and immediate post-resettlement phases and the need for relief. As Cernea states, the four distinct but interlinked functions of the IRR model include:

1. A predictive (warning and planning) function
2. A diagnostic (explanatory and assessment) function
3. A problem-resolution function, in guiding and measuring resettler's reestablishment
4. A research function, in formulating hypotheses and conducting theory-led field investigation (see Cernea and McDowell 2000, p. 21).

A common goal in most development related research is to make research useful for policy-making and thereby improve the performance of development agents in the field. The IRR model recommends that we turn it on its head to create an action matrix for reconstructing the livelihoods and incomes of the displaced, with eight distinct elements, as follows.

a. From landlessness to land-based resettlement
b. From joblessness to reemployment
c. From homelessness to house reconstruction
d. From social disarticulation to community reconstruction
e. From marginalisation to social inclusion
f. From expropriation to restoration of community assets
g. From food insecurity to adequate nutrition
h. From increased morbidity to better health care (see Cernea and McDowell 2000, p. 20).

This transition model shows that the mere reversal of the impoverishment model does not offer adequate ways towards improving the livelihood of displaced people and ensure their full participation in the development process. It is important to highlight that useful lessons can also be learnt from the displaced people themselves. Practically, in the process of transition the experiences and perspectives of the resettlers are easily lost. Multiple creative strategies and efforts put into reconstructing social, cultural and economic livelihoods by people experiencing displacement and resettlement contain not only information about existing hardships and constraints but also significant messages concerning people's priorities, aspirations, knowledge, resources and capacities which could be used as a basis for policy-making and project design (Sørensen 1996). It seems that no directly pertinent reasons

may be drawn from the IRR model to answer what migrants, in particular, rural migrants, expect and are most worried about.

The IRR model highlights the intrinsic risks that cause impoverishment through forced displacement, and suggest the ways to counteract, eliminate, or mitigate these risks. Over the past decade development planners, practitioners, and researchers interested in the transformations resulted from forced displacement and resettlement have increasingly applied the IRR model to analyse real-world problems. In Nepal, the Kali Gandaki project, which applied the model in resettlement impact evaluation, has revealed positive experiences and produced operational recommendations (Sapkota 1999). Several books and numerous articles have been devoted to discussion of the validity of the model, testing its applicability, or proposing various development of its elements (Parasuraman 1999). In China, the completed Shuikou project and the ongoing Xiaolangdi project have adopted this model in their resettlement planning. 'Impoverishment risks' are included in the Bank's new *Operational Policy* (OP 4.12) on resettlement (World Bank 2001a).

However, there are some aspects that need to be extended. Firstly, with the implementation of a resettlement project in a region, attention should be paid to not only the people displaced but also the host people who receive migrants. Concerns should be on not only the micro-level analysis of the livelihoods of the migrant households but also the macro-level analysis of the socio-economic and structural changes in the migrant communities and the whole reservoir area. Secondly, this model does not show how to overcome the contradiction between short-term physical resettlement and long-term community reconstruction and local socio-economic development. The pressing physical displacement and immediate post-resettlement stages and the need for relief in a relocation project are largely absent. Thirdly, this model encourages a multidisciplinary perspective in analysis and policy making, but how to carry out cross-disciplinary research and develop feasible multiple polices is not clear.

Cernea (1997) notes that less empirical research has been done on reconstructive aspects of resettlement than on the impoverishment process in relocation. Based on the examination of the consequences of the Itaparica dam in Brazil, Horgan (1999) argues that the IRR model falls short in that it does not contain active provision to facilitate implementation, backed up, if necessary, by adequate sanctions. Assurances that the authorities will take note of the problems confronted by these displaced are simply not enough. He suggests that perhaps additional risk, 'failure to implement', be added to the model. Depending on the project and

other circumstances, the people displaced may face more or sometimes less than eight risks. Also the intensity of the key variables may vary from project to project. Academic research in DIDR has confirmed the IRR model and expanded its scope to include two additional risks: the loss of civil and human rights (Downing 1998) and the disruption of formal educational activities and loss of access to basic public services (Mathur and Marsden 1998).

Resettlement is complex social engineering. The IRR model has been very useful in identifying the risks inherent in resettlement and in suggesting ways to cope with these risks. However, it has been less effective in addressing political aspects of DIDR such as differences in power among people in affected communities, the rights of the displaced, their local autonomy and control, and their ability to affect their interactions with national institutions (Wet 2002). These rights are integral components of sustainable development. Absence of relevant political rights might cause 'political marginalisation', notably taking away the rights of the displaced population to decide how and where to live. Entitling migrants, especially those displaced by distant resettlement approaches, with the rights and benefits which they should have, is an important concern for forced migration and resettlement.

2.2.3 Push-and-Pull Model

The push-and-pull perspective has played a dominant role in much research relating to analysing labour migration and to a lesser extent refugee movements (Sørensen 1996, p. 41). It differs from the other perspectives discussed by focusing on the structural causes of movement rather than on the impacts of displacement and resettlement. It highlights the motivation and expectations of migrants. As this thesis focuses on examining the near and distant resettlement in the context of contemporary migration in China, the push-and-pull perspective is thus closely relevant to this analysis.

In the last century, a large number of people moved from rural to urban areas. The push-and-pull perspective model aims to identify those socio-economic and political factors which force people to leave their hometowns and resettle in new environments on the one hand, and the factors that attract people to the new locations on the other. Push-pull factors suggest that circumstances at the origin place (such as poverty and unemployment) push people out of place to other places that exert a positive attraction or pull (such as a high standard of living

or job opportunities). This model can be approached from two different angles. First, its analysis concentrates on the economic or political macro-systems in which the specific conditions of different regions or countries are shaped. Second, its analysis is from the perspective of individual migrants, focusing on the decision-making process in which the different push and pull factors are assessed and acted upon (Eades 1987). The most common factors that have been identified as push factors include under-employment or unemployment due to economic restructuring and technological changes, diminishing resources, population pressure, and difficult and unsatisfactory life. In the subset of forced migration induced by conflict, the pressures also include discrimination, real or feared persecution and experiences of torture. However, the decision for many people to move out and resettle in other places is not only the result of the push factors at the current living locations but also the attractions or promises from the destination regions. The most important pull factors are demand for labour, availability of land and good economic opportunities (Castles and Miller 1993). For the political refugee's survival, the hope of getting asylum and being able to live a peaceful life are common factors pulling them across borders.

This model draws our attention to the importance of considering the motivation and expectations of migrants, which are closely linked to the experiences and reactions of people displaced or to be displaced in their movement. This model can be used in analysing involuntary resettlement issues as it emphasises the linkages that exist between the migrants' origin areas and the destinations; but this dimension has been neglected (Sørensen 1996). Displacement caused by dams and reservoirs is permanent as the displaced people can never return to their homelands. Moreover, as opposed to voluntary migration where the young and most adaptable individuals often choose the 'opportunity' to migrate, forc ed resettlement necessitates the removal of involuntary groups like the aged, women, children, and sick and less adaptive persons as well. In addition, remuneration of displaced persons has typically been minimal (Cernea 1988; Cernea and Guggenheim 1993). There exist extreme push factors resulting from dam and reservoir constructions. How to locate suitable resettlement areas that can pull migrants is a critical issue in rural resettlement in the TGP. Taking choices and preference of the people to be displaced into consideration of resettlement policies and schemes is another concern in resettlement. Identifying the 'push forces' in the sending areas and the 'pull forces' in the receiving areas is a big problem in rural resettlement in the TGP, especially via a distant resettlement approach.

2.2.4 Development-Oriented Resettlement

The World Bank is a pioneer in conceptualising policies on involuntary resettlement, starting in the early 1980s. The term of 'development-oriented resettlement' appeared in the influential 1988 World Bank's resettlement guidelines (Cernea 1988, p. 20–21), which reads that:

> **Development-oriented resettlement** means that the social infrastructure, school and health services, access to employment opportunities and, if applicable, the housing-plot allotments and dwellings should be planned to meet the needs of resettlers' growing families, taking into account, if possible, at least the first and second generation in the settlement.

The Bank issued its first resettlement guidelines in 1980 (OMS 2.33). The guidelines were reinforced in 1986 (OPN 10.08) and 1988 (TP 80). They were reformulated as an '*Operational Directive*' (OD 4.30) in June 1990. The revised '*Operational Policy/Bank Procedure*' (OP/BP 4.12) has been adopted by the Bank Board since October 2001 (World Bank 2001a). One of important points of view embedded in the Bank's policy, as shown in the following box, perceives resettlement as a development opportunity rather than a burdensome obligation.

Key elements of the World Bank's resettlement policy

- **Avoid or minimise**. Involuntary displacement should be avoided or minimised where feasible, exploring all viable alternative projects design, because of its disruptive and impoverishing effects.
- **Improve or restore livelihood**. Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to beginning of project implementation, whichever is higher. The means to achieve this objective consist of the preparation and execution by the Borrower of resettlement plans as development programs. Resettlement activities should be conceived and executed as ***sustainable development.*** These are integral parts of project designs.
- **Allocate resources and share benefits**. Displaced persons should be: (i) compensated for their losses at replacement cost, (ii) provided sufficient investment resources to share in project benefits, and (iii) assisted in the transfer and in the transition period at the relocation site.
- **Move people in groups**. Minimising the distance between departure and relocation sites and moving people in groups can facilitate the resettlers' adaptation to the new socil-cultural and natural environments. The trade-offs between distance and economic opportunities must be balanced carefully.
- **Promote participation**. Displaced persons should be meaningfully consulted and have opportunities to participate in planning and implementing resettlement programs. (The existing social and cultural institutions of resettlers and their hosts should be relied upon in conducting the transfer and reestablishment process.)
- **Rebuild communities**. New communities of resettlers should be designed as viable settlement systems equipped with infrastructure and services, able to integrate in the regional socio-economic context.)
- **Consider hosts' needs**. Host communities that receive resettlers should be assisted to overcome possible adverse social and environmental effects from increased population density.
- **Protect indigenous people**. Tribal and ethnic minorities, pastoralists, and other groups that may have informal customary rights to the land or other resources taken for the project, must be provided with adequate land, infrastructure, and other compensation. The absence of legal title to land should not be grounds for denying such groups compensation and rehabilitation.

Source: Adapted from World Bank (2001a).

Comparing the Bank's new policy with its previous policies on involuntary resettlement, three changes can be seen: (1) from livelihood or income restoration to improvement of income, or supporting the livelihood capability, or income-generating sources; (2) from restoration of livelihood to ensuring sustainable livelihoods; and (3) from social concerns to more economic and environmental concerns.

In China, the advocation of a 'developmental resettlement' policy appeared in 1984, when the 'left-over' problems of the past reservoir resettlement were drawn to the attention of the central government. This policy, through investing part of the compensation into the reservoir area to initiate and improve industries, aims at maintaining or raising incomes and generating new opportunities for the displaced persons so that their livelihoods are better off after displacement (SCC 1993, 2001).

A real developmental resettlement should involve a critical requirement, empowering the displaced people through building capacities by their participation in the decision-making process of a development project and resettlement. Reconstructing sustainable livelihood for the people displaced is the most important and most comprehensive aspect of DIDR. Failure to mitigate or avoid those impoverishment risks may generate 'new poverty', as opposed to the 'old poverty' that many displaced people have already suffered before resettlement (Cernea 2002). Poor people do become even poorer (Mathur and Marsden 1998; Pandey 1998). Downing and Garcia-Downing (2002) state that the core of sustainable livelihood and development is to improve human well-being over time, with the goal that children's lives be as good as, or better than, their parents'. The relationship between the goals and means of DIDR illustrates that the different expected outcomes of resettlement can be achieved through different resettlement strategies or means. As Figure 2.1 shows, there are four possible outcomes for the displaced persons. The least acceptable one is to simply displace migrants without concern for their shattered livelihoods. 'Relocation' involves some commitment to compensation for, or rebuilding of lost assets, particularly infrastructure such as housing or lost public facilities, in the new locations. But the displaced people need to re-establish productive systems on their own. 'Rehabilitation' entails processes provided in addition to compensation and relocation in order to ensure that, by having income streams, livelihoods and social systems restored, affected people and their descendents are sustainably better off as a result of the project (ADB 1998; Ravi *et al.* 1999). Rehabilitation or restoration ensures that the rehabilitated society can continue as it was. 'Sustainable development' assures that

the displaced people are better off than before removal and that they are beneficiaries of the project.

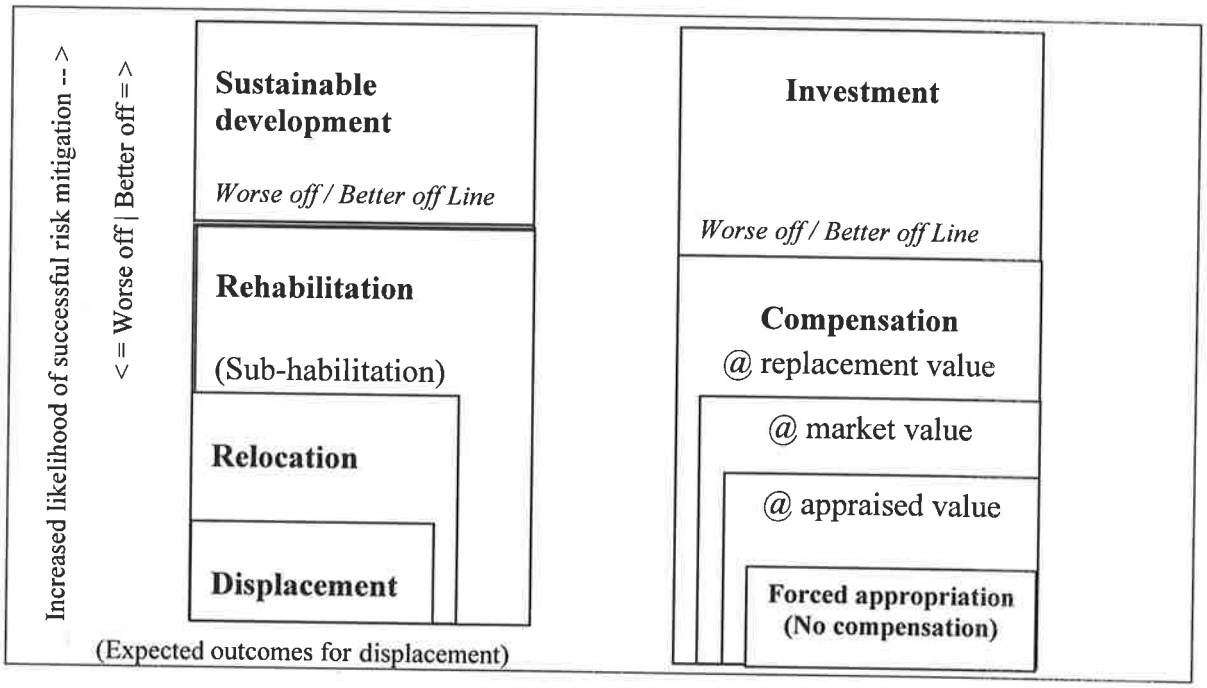


Figure 2.1 Goals and Means for Improving the Performance of DIDR

Source: Downing and Garcia-Downing (2002, p.41).

The goals at different levels vary by the three means deployed in DIDR. 'Forced appropriation', which rarely appears in reality, involves taking assets of the displaced without compensation. 'Compensation' in cash is paid to those who are affected and entitled to replace lost assets, resource or income sources (ADB 1998; Ravi *et al.* 1999). Compensation can be made at appraised value, market value or replacement value, but it does not entail investment or benefit sharing. 'Investment', or benefit sharing, occurs when the displaced people share in a project's benefits. These benefits include project equity, benefit sharing arrangements, educational investments in the resettlers and their children, development of micro enterprises, or simply grants.

Such a mapping of the different outcomes of DIDR highlights the interaction between the expected goals and the corresponding measures. It needs to go through different stages to achieving sustainable development. Equally important, sustainable development should be studied under different contexts, varying by countries and by projects. In addition, it is difficult to clearly quantify a 'division line' between rehabilitation and sustainable development in reality. Hence, researchers, officials, and institutions interchangeably adopt

the terms of rehabilitation, reconstruction, and sustainable resettlement or development. A framework to measure the consequences of DIDR is in need of being built. Chapter 5 of this thesis attempts to complement the interpretation to DIDR in order to build a framework of impact assessments of resettlement, based on the practice of TGP displacement and resettlement.

Studies have proved that the vulnerable groups, such as indigenous peoples, the aged and women, are more vulnerable to impoverishment. This pattern has been observed in indigenous areas in India, Papua New Guinea, Australia, western United States, Canada, and northeastern Brazil (Fernades 1991; Fernades and Anthony 1992; Ali and Behrendt 2001; Downing *et al.* 2002). Vulnerable groups rely heavily on their surrounding environment, especially on land. Alterations to the surrounding ecology are likely to overwhelm the individual and community adaptive responses. When displaced from their land, coupled with the loss of the foundation of their livelihood and culture, without appropriate rehabilitation strategies, the damage to the vulnerable groups, particularly those relocated by 'distant resettlement', is extreme. Chapter 9 of this thesis will examine the status of woman resettlers in the processes of displacement and resettlement of the TGP in order to address this important concern which has been largely ignored in many resettlement projects in China.

Achieving 'sustainable livelihood' (SL) is a principal objective in displacement and resettlement. SL research suggests a number of ways of analysing and understanding rural development processes but with a consistent focus on poor households and the decisions people take about how to achieve successful sustainable livelihoods. According to McDowell (2002), sustainability of livelihood has three main components: (1) a sustainable improvement in livelihood measured by the reduction in poverty and livelihood enhancement; (2) ecological sustainability; and (3) long term resilience to future shocks and stresses. Central to the SL research is the identification of the key conditions for improvement in sustainable livelihoods, and an analysis of which institutions (exogenous, endogenous, formal and informal) mediate people's access to and control over the resources necessary to pursue those strategies in the reconstruction phase.

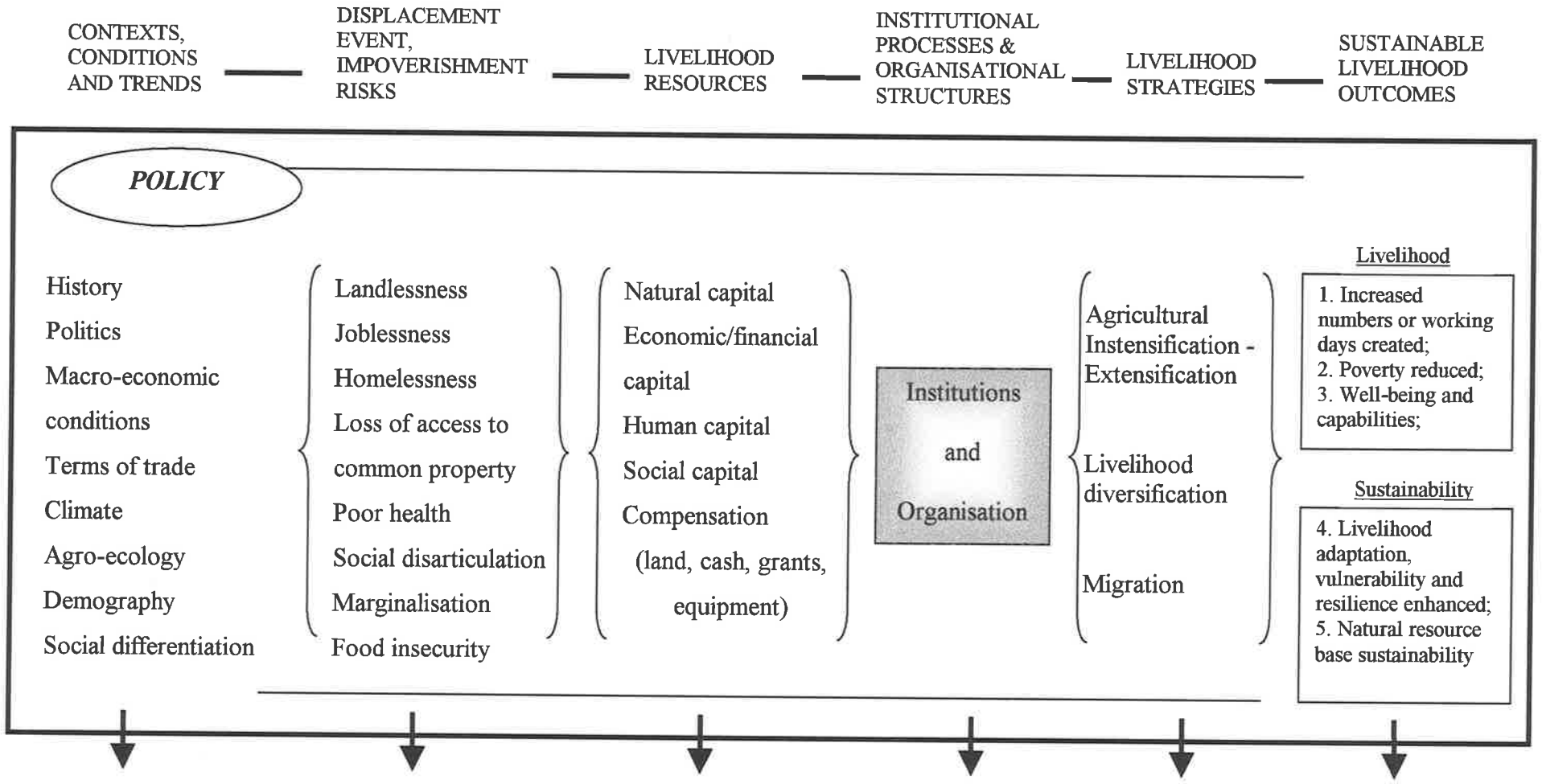
In SL research (Sen 1984), the key concerns of sustainable livelihoods include dynamic processes, livelihood systems, incorporating social institutions and vulnerability or resistance. Sustainable livelihoods therefore marks a move away from static measurements of livelihoods derived from calculations of absolute (positive or normative) levels of poverty

and well-being, towards a concern with how poor people make a living, whether their livelihoods are secure or vulnerable over time and what are the key factors in determining security or vulnerability (McDowell 2002). The SL research framework is useful in analysing the problems in involuntary displacement and resettlement. Given a particular context (policy setting, politics, history, agroecology and socio-economic conditions), SL research reveals what combinations of livelihood resources (different types of capital) would result in the ability to apply which combination of livelihood strategies with what outcomes. Of particular interest in this framework is the institutional process (embedded in a matrix of formal and informal institutions and organisations) which mediates the ability to carry out such strategies and achieve (or not) such outcomes (Scoones 1998, p. 3).

The SL approach to understanding livelihood processes suggests a research method, which takes into account capital, livelihood resources, institutions, livelihood strategies and outcomes, and is concerned with both process and outcome, in the context of sustainability. Founded on attributes of the SL approach, McDowell (2002) suggests that the SL approach to understanding rural development process and livelihood strategies could be applied to situations of involuntary resettlement relating to the construction of reservoirs and dams. He proposes a research method, namely 'impoverishment risk and sustainable livelihoods', which integrates elements of SL research with Cernea's IRR model, as shown in Figure 2.2. This research framework can be developed to enable the study to account for changes to the basic material and social, tangible and intangible assets that people have in their possession and to track the impact of these changes on their livelihood strategies. This research method is constructive to understanding the 'development-oriented resettlement', in which the sustainable livelihoods of migrants is an ultimate goal to achieve in the later stage after resettlement.

Sustainability in the livelihood discourse does not infer stagnation, but rather livelihood strategies that lift people out of poverty, enable them to cope with future shocks and stresses, in a manner that enhances the natural resource base. Both the SL research and the IRR model regard institutional processes as central to livelihoods. Cernea (in Cernea and McDowell 2000, p. 41) writes that 'enabling the rebirth of community institutions is paramount for successful resettlement and livelihood reconstruction'. The SL research emphasises that while institutions undoubtedly play a positive role in community reconstruction, institutions and management by community structures can also be constraining and exclusive. Development-induced displacement, resettlement and associated impoverishment risks will

Figure 2.2 Forced Displacement, Sustainable Livelihoods and Impoverishment Risks



Source: McDowell (2002).

fundamentally change institutional arrangements at the community level. The challenge of reconstruction will place additional pressures on social institutions and open opportunities for investment in those institutions that play a pivotal role in livelihood re-establishment. Displaced people and resettled communities are forced into a situation in which past securities have been removed, and vulnerability has been suddenly and externally imposed (McDowell 2002). The commitment of governments, private corporations and other agencies to resettlement varies from country to country and project to project, so does the legal and protective framework in which displacement and resettlement occur.

The SL approach to understanding rural livelihoods can enhance research in impoverishment risks and livelihood reconstruction in the process of involuntary resettlement. It also has many implications on the policy and means to achieve the ultimate goal of resettlement: sustainable livelihoods. Research should seek to explain why households become poor, why they stay poor in post resettlement situations, and why the risks associated with involuntary resettlement and impoverishment-related displacement demand targeted responses from governments, financing institutions and community organisations. The following chapters will examine the functions, organisations, mediating roles, and management of the Chinese government and resettlement institutions in the process of resettlement with TGP.

2.3 Main Issues of Involuntary Displacement and Resettlement

2.3.1 Ineffective Law and Regulatory Instruments

Some studies have provided evidence that many countries have not formulated a legally and morally explicit position about the problems confronted by the displaced people and delay the adoption of relevant national acts and laws (Dhagamwar 1989; Santos and Andrade (eds.) 1990). Formal policies and regulations concerning involuntary resettlement of DIDR are absent in many developing countries. Interdisciplinary research, particularly sociological and anthropological research, has illuminated the impacts of forced relocations and offered important practical recommendations (Scudder 1973, 1991; Butcher 1990; Guggenheim 1992; Partridge 1993; Serra 1993; Lassailly-Jacob 1994). However, project planners often overlook those recommendations. Weak policy responses to resettlement issues are an enduring cause of poor performance in DIDR. Legal vacuums and absence of policy for resettlement leave room for the use of violent displacement procedures, without due

recognition and protection of the basic human rights and entitlements of those uprooted (Cernea 1997).

There is a wide gap between the laws and policies and their enforcement in countries. National resettlement regulations have not prevented numerous problems from emerging in the TGP in China (Bartolome *et al.* 2000, p. 7). A well-designed system of laws suitable for displacement and resettlement is crucial in guiding or mediating the process of DIDR.

2.3.2. Inadequate Preparation

An understanding of the numbers of people to be affected by dams and their social, economic and demographic characteristics is essential for designing suitable resettlement strategies. However, the precise numbers of people affected and their socioeconomic networks and standards of living are often not accurately known. Incomplete or outdated baseline data can lead to an underestimation of the numbers of people to be negatively affected by the project.

Baseline data provides an important accordance for setting forth criteria on eligible migrants, compensation and rehabilitation. They form the basis for identifying the various categories of project impacts: rural or urban residents, rural land, cities and town sites, industrial and mining enterprises, and infrastructure to be flooded. Such data are the basis for designing effective resettlement schemes (OED 1998a). They constitute a baseline against which the incomes and standards of livelihood and reconstruction of production of resettlers may be measured after resettlement. Some problems relating to compensation in particular in the TGP resettlement arise from inaccurate and/or incomplete flooding inventory.

Construction of a dam project and the associated resettlement can produce both positive and negative impacts on the environment in the reservoir area. The environmental impact assessment of any project is very important in the prevention of environmental deterioration. Resettlement approaches from many countries tend to move the displaced people either to the upper catchment belt immediately surrounding the new reservoir or to the hillside locations in the reservoir areas. A big issue of local resettlement is an underestimation of the population carrying capacity of the environment in the resettlement communities within or outside a

reservoir. This problem is a key factor that impedes the process of resettlement with a large number of persons to be displaced. Due to ignorance, the importance of the natural environment had been under valued, leading to irrational resettlement approaches in practical resettlement in the TGP (Du *et al.* 1994; Chen *et al.* 1995).

2.3.3 Inadequate Compensation

Compensation and funds for resettlement and rehabilitation programmes are inadequate in almost all countries (OED 1998a). Compensation for the people displaced should include considerations of housing, land, access to economic opportunities, such as nearby jobs, public services, the disruption of commercial ties with customers, suppliers and distributors in urban settings, and many assets that are attached to the land like fishing ponds, irrigation works, standing crops, and trees in rural areas.

However, compensation has largely been understood to represent specific measures and should ideally be equal to the losses of people displaced and /or negatively affected by a project. It usually takes the form of a one-off payment in most cases, either in cash or kind. It goes principally to the negatively affected persons (Bartolome *et al.* 2000). Inadequate or cases of non-compensation can be traced back to errors in population censuses, property evaluations and the disregard of opportunity cost and unfulfilled potential of lost asset (especially land) and the intangible benefits of infrastructure. The impacts of the dam project on the livelihoods of the downstream population and on the host people in receiving communities are excluded. Compensation is only awarded to persons in possession of undisputed legal title.

The criteria for compensation vary greatly in different countries and projects, depending on the compositions of compensation and standards set forth. Different value systems will give rise to different compensation amounts, measurable and immeasurable, and tangible and intangible. The World Bank sets a high benchmark for compensation: either at replacement price or at a value reflecting the forgone future income of all assets to be lost, e.g., forgone net benefits from land and natural resources, and certain environmental costs (Cernea 1988, p. 58). The TGP is entirely funded by the Chinese government with no financial assistance from the international community or the World Bank. As such, compensation criteria for the affected people do not conform to the standards stipulated in other similar projects. A survey

of resettlers before their displacement showed that compensation was ranked first in the list of twelve potential aspects of migrants' concern: compensation, housing, education, land, employment, benefits for the old, living surrounding, social security, healthcare, food, and social relationship (Li and Rees 2000). According to the Changjiang Water Resources Commission (CWRC 1997), the rural population affected by the TGP make up 40% of the total relocatees, but they will receive less than 20% of the overall resettlement compensation.

The displacement of people from their customary habitat involves substantial hardship and suffering. There are psychological costs which cannot be quantified using available analytical tools. Certain types of intangible assets or social losses cannot be calculated in monetary terms, such as production relationships, kinship networks and employment opportunities. The updated World Bank's policy arbitrarily limits the cost of resettlement to 'direct economic and social impacts', which result from the project's taking of land, relocation of housing, and loss of assets and income sources. This may lead to an underestimate of total project costs (Downing 2002).

In many countries laws and regulations pertinent to expropriation of property by the State are generally used to define the procedures for valuation of, and compensation for, the property lost (Bartolome 2002). However, such national laws and regulations governing compensation are sometimes outdated, or lacking in decision or implementation mechanisms. As a result, they cannot prevent serious hardships and suffering of migrants. The compensation rates for resettlers moved for hydro projects are usually lower than for those who have to move to make way for transportation or urban re-development in China. The disparity reflects a historic pattern of discrimination against farmers (Jun 1997). Another major problem existing in compensation is that the resettlement design institution does not participate in the implementation of resettlement. Therefore, it is not fully aware of the problems during implementation and thus not in the practice of getting feedback to make rational amendments to the original estimation.

2.3.4 Lagging Resettlement Planning

Development-induced impoverishment is believed to be the result of inadequate policies and planning (Downing and Garcia-Downing 2002). In many cases, the failure, during project preparation, to carry out social surveys of those to be dislocated and the host people,

combined with weak preparation of viable reconstruction alternatives, makes it impossible to conduct an adequate appraisal of resettlement plans, cost analysis or organisational arrangement. Consequently, resettlement components are often under-designed, under-funded, and understaffed. In a large dam project like the TGP, the figure of population to be relocated is a decisive factor in the overall resettlement planning. However, the variation is huge, ranging from 1.1 million to1.9 million from different authorities even in the same official statement (Li 2000).

Detailed planning of resettlement, including economic, technical, sociological and organisational contents, often lags behind the actual process of displacement. Most resettlement planning at county level in the Three Gorges reservoir area was not completed until 1996. Moreover, with changes in the policies, resettlement plans cannot be readily and timely adjusted to meet the changes. As such, less attention has been paid to economically and socially viable options for improving the productive capacity of the displaced persons through various means and strategies.

Resettlement location selection and the analyses of land availability are very important in rural resettlement planning. Potential resettlement areas, infrastructure situations, reclamation of land and improvement of low yielding land are important determinants in resettlement planning. These aspects are usually included in the 'social impact assessment' (SIA) or 'environmental impact assessment' (EIA), or the report of a resettlement implementation project.

In some circumstances, planning for resettlement does not commence until preparatory work has begun at the dam site, or even until construction on the dam itself has started. As a result, issues such as budgetary problems, lack of accountability, poor management, inadequate personnel and equipment allocated to the displacement and resettlement arise (Scudder 1973). In the Danjiangkou reservoir project, for example, without any advance information, dwellers residing upstream of the dam were forced to abandon their homes and escaped from the rising backwater after the dam was filled (RGDR 1993), resulting in 'left-over' problems which have not been completely settled to date.

2.3.5 Deficient Participation

Neither international laws that address forced migration (i.e. refugee and humanitarian law) nor formulations concerning internal displaced peoples in a country offer much protection to the people displaced by DIDR (Wet 2002). International treaties (e.g., the International Covenant on Economic, Social and Cultural Rights) offer only limited protection to the people displaced by DIDR. A few countries have incorporated these provisions into their national legal systems to allow discretion in determining the nature of consultation and participation regarding the affected people. A main problem in resettlement relates to the rights of the displaced people. These rights are frequently abused due to an unbalanced or problematic internal relationship between the nation and its citizens.

Many studies argue that resettlement should adopt a more democratic and participatory approach to project planning and implementation (Bartolome *et al.* 2000; World Bank 2001a; Wet 2002). Effective participation involves the ability to influence decisions and proceedings throughout the project. Genuine participation helps secure consensus, reduces conflicts, and makes for more realistic planning and goals. Good practices from some countries such as Brazil and Canada can be seen (Wet 2002). However, participation of the affected people in many projects has commonly been superficial or treated as unimportant by those responsible for the projects. Oliver-Smith states that a democratic participatory approach to project planning and implementation involves:

- Authentic participation which involves the ability to influence decisions
- Decision-making criteria which move away from the purely economic to more dialogic, consensual considerations
- Recognition of resistance as a legitimate form of expression in the dialogue about development options
- Re-examination of the criteria allowing the state to relocate people and appropriate property
- Development of skills necessary for all parties to engage in open-ended negotiation as equal parties
- Free flow of information at all stages of a development project which may cause resettlement (see Wet 2002, p. 6–9).

2.3.6 Ignorance of Social Integration

The social, economic and cultural integration of the resettlers with the host people in their receiving communities is seen as a slow process. Displacement influences and shapes the ways of migrants in which they interact with their new environment, the types of social structures and relationships they build and participate in, and the values and norms they hold.

Involuntary relocation usually results in people being transformed from a social environment in which they were primary actors to one in which they are aliens. Displacement and resettlement also result in a painful and traumatic experience of socio-cultural dismantling (Bartolome *et al.* 2000, p. 6). Communal and social bonds are disintegrated and cultural linkages are altered drastically. This often leads to a profound sense of loss and loneliness among migrants who can become an underclass in their new socio-cultural milieu. For those resettlers displaced through 'distant resettlement', their kinship and neighbourhood networks can completely disappear. Displacement brings about changes in social structures in the sending and receiving areas due to a decrease of population in the origin areas and an increase of population in the destination areas. The networks of production and living change correspondingly in both areas. Social integration is a core issue of social reconstruction and development. It is a process harmoniously combining various factors and parts of a society. Engles (see Marks and Engles 1972) points out that beneficial relationships in each society reflect its economic relations. Beneficial relationships have multiple facets, involving individual migrants, regions and the country. Hence, social integration includes important pairs of beneficial relationships between the country and the individuals displaced, between resettlement and non-resettlement areas, between industrial sectors, and between the resettlers and the host people.

2.4 Conclusion

A range of literature has discussed the issues of development-induced displacement and resettlement around the world, especially in developing countries. The development of currently underdeveloped countries requires the establishment of infrastructure such as large dams and reservoirs. However, the construction of these hydro projects usually imposes far-reaching and adverse environmental, social and economic impacts in reservoir areas or nationwide. The most irreversible consequences include the permanent land inundation in the reservoir areas and a number of people relocated. Most resettlers have been suffering from varying degrees of impoverishment risks after their displacement. Many 'left-over problems' of the reservoir resettlers in China as well as other countries remain to be solved.

The literature on involuntary resettlement provides us with valuable approaches and methods for our studies on population displacement associated with the TGP in China. People displacement produced by dam construction is characterised by compulsory and mass

removal. The processes of involuntary resettlement are complex and stressful for resettlers, who have to suffer a variety of stress and impoverishment risks, economically, socially and culturally. The situation of those displaced may be aggravated due to poor and lagging planning, inadequacy of compensation, ineffectiveness of legal institutions and deficiency of participation of resettlement schemes.

To date millions of resettlers have been displaced to make way for thousands of dams or reservoirs in China. An overview of reservoir resettlement reveals that there is a general failure of resettlement in past relocation schemes owing to special political background and socio-economic conditions. For a long time, high priority has been given to dam project construction, rather than the people's displacement and rehabilitation of their livelihood and production. Thus their interests and rights have been ignored and not actually benefited from the projects. Nevertheless, on the basis of lessons drawn from reservoir resettlement in China and other parts of the world, policies for 'development-oriented resettlement' have been proposed since the 1980s and are being carried out in few countries such as China. The governments, scholars and project agencies have become aware of the potential consequences of involuntary resettlement and have initiated to seek suitable strategies and efforts to cope with impoverishment risks in order to achieve better and sustainable livelihood after displacement.

Chapter Three

FIELDWORK AND METHODOLOGY

In order to achieve the aims of this study a range of information sources and data collection methodologies were employed. This chapter critically assesses the sources of information used in the study and outlines the methodology used in primary data collection. This is necessary to understand the discussion and analysis in later chapters. Essentially the study employed a 'mixed methodology' involving both qualitative and quantitative approaches. It is argued that existing information relating to the study topic is limited and it is necessary to employ a wide range of approaches and methodologies in order to shed light on issues of TGP resettlement.

3.1 Existing Studies

Before 2001, six major surveys pertaining to human displacement and resettlement of the TGP had been conducted by institutes and individuals in China. In 1995, a survey from a social psychology perspective was carried out by Fuling Normal College (in Fuling district, Chongqing) in 1997 (Ma *et al.* 1998). It covered 630 rural migrants and 572 urban migrants in the reservoir area. The survey focused on evaluating migrants' attitudes towards the Three Gorges dam building and population relocation. From October 1997 to September 1998, a survey involving 275 migrants before relocation and 195 migrants after relocation was conducted (Li 2000). This survey covered a variety of aspects, particularly the attitude towards the TGP and feelings of the relocatees before and after 'near resettlement'. A continuous long-term survey traced some 68 host households and 11 migrant households who were displaced through the 'near resettlement' scheme since 1997 (IMDD 2000). It also keeps track of the changes in the occupations of the migrants and host residents. The two data sets, which are comparisons of changes in employment and education status between the two genders, provide valuable information for analysing the situations of female migrants in the process of resettlement. This case will be analysed in Chapter 9. A survey carried out in 1999 and 2000 surveyed the mode of rural resettlement and the psychological state of migrants and non-migrants in the reservoir area (GRICAS 2000). Another survey conducted in late 2000 is concerned with the psychological state and stress experienced by woman resettlers in the

process of the 'near resettlement' in the Chongqing reservoir region (Yang 2000). In addition, some local governments conducted small-scale surveys on local rural migrants.

3.2 Survey Methods

3.2.1 Identification of the Categories of Populations and Communities to be Surveyed

The target of the present study was the people who had been, and would be, displaced by the Three Gorges dam construction. Two major categories of these migrants can be identified: those displaced via 'distant resettlement' schemes and those displaced through 'near resettlement' schemes. The former category can be further divided into two sub-groups: those who would be moved out in 2001–02 and those who had been displaced in 2000. In order to have a comprehensive understanding of the policy, planning and operation of the 'developmental resettlement', it was necessary to interview officials at provincial, municipal, county, township and village levels and specialists in relevant institutions responsible for the planning, management and implementation of the resettlement project. Another group of people investigated was the host residents in the receiving communities. Selected communities at village level in both the flooding and resettlement areas were investigated. Summarising the above, the four major categories of people surveyed can be identified as:

1. Migrants displaced through the 'distant resettlement' scheme:
   (1) Having been displaced in 2000
   (2) To be displaced in 2001–02
2. Migrants displaced via the 'near resettlement' scheme;
3. Host people who received migrants in the distant resettlement provinces; and
4. Officials and experts in the employment of the TGP authorities and cadres responsible for displacement and resettlement in the reservoir areas and destination provinces.

3.2.2 Location Selection Criteria

To facilitate the collection of the required primary and secondary data, fieldwork was concentrated in the Chongqing reservoir area and Sichuan province. The fieldwork was

mainly carried out in Kaixian County, Yunyang County, Fengdu County and Wanzhou district in the Chongqing reservoir section (Figure 3.1), and Deyang city, the trial resettlement location of the 'Government-Organised Distant Resettlement' (GODR) in Sichuan in 2000 (Figure 3.2). In selecting the case study areas the following criteria were adopted:

1. An area with a large number of migrants and with a large proportion of rural dwellers who are to be moved and resettled within the reservoir region;
2. An area with a number of rural migrants to be relocated by the GODR scheme in 2001–02;
3. An area with a long duration and experience of resettlement associated with the TGP;
4. An area with different resettlement 'models': the 'distant resettlement' and the 'near resettlement'; government-organised and spontaneous resettlement; agricultural resettlement and non-agricultural resettlement; and
5. An area with most of the perceived critical resettlement problems such as inadequate cultivated land, few non-agricultural job opportunities, and low level of socio-economic development.

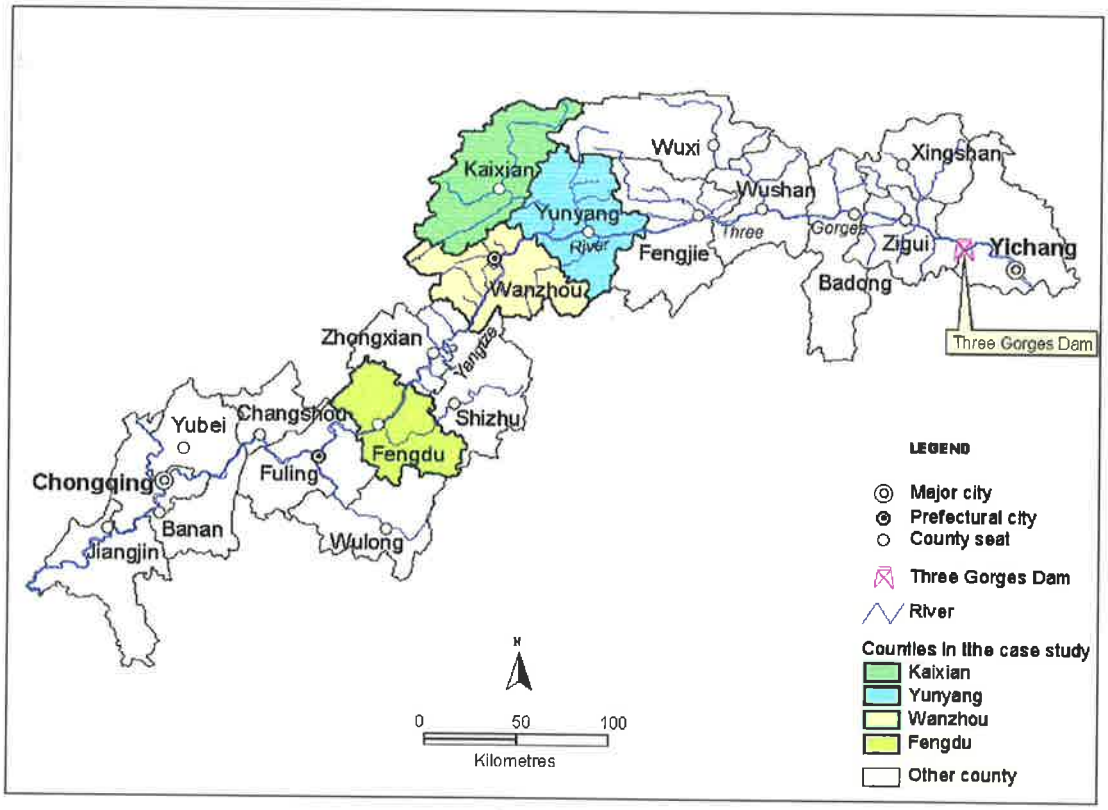


Figure 3. 1 The Case Study Locations in the Three Gorges Reservoir Area.

Source: Adapted from the Resettlement Bureau of the Three Gorges Project Construction Commission of the State Council (TGPCC), China: Resettlement Planning Map of the Three Gorges Reservoir Area, 1997.

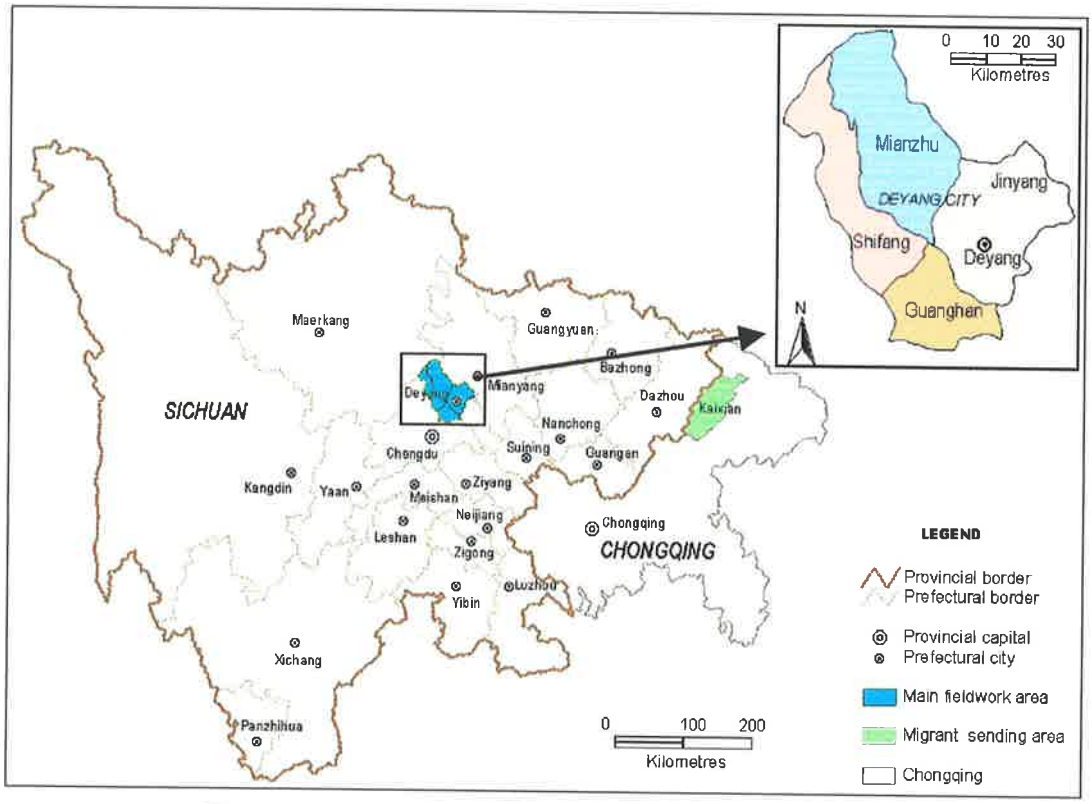


Figure 3. 2 Fieldwork Locations in Sichuan Province.

3.2.3 Sample Selection

The main way of collecting primary information employed was through face-to-face interviews. Their responses constitute the data to be analysed. To make the survey more representative, a typical area-centred strategy was adopted and relevant measures were employed to ensure the survey locations were representative of particular migrant situations. Employing the 'typical area-centred' strategy is to select the case study areas in terms of different geographical locations or rural settings and economic background of different groups of people concerned. Three levels of sampling units were then selected. They were representative migrant townships, migrant villages, and migrant households.

The author took into account as typical case study areas as possible in the selection of the surveyed counties in terms of the numbers of rural persons who would be displaced and the land which would be submerged by the dam construction. Table 3.1 and Figures 3.1 and 3.2 show the sample distribution (by counties) of the interviewees in the Chongqing reservoir section. The destination area receiving migrants from Kaixian is Deyang city in Sichuan. Areas where migrants have been resettled through the 'near resettlement' (NR) scheme include Yunyang and Fengdu counties and Wanzhou district in the Chongqing reservoir area.

In addition, for the specific purposes of studying the changes in income and flow of the labour force and understanding the interrelationship between the migrant families' receptiveness to the GODR scheme and their original geographic location, 32 migrant households in the purely agrarian areas in Qukou town and 526 migrant households in the peri-urban district in Hanfeng town of Kaixian County were surveyed in detail, which are not included in Table 3.1.

Table 3. 1 Distribution of sample households by area interviewed

Areas	No. of migrant households			Host people	Total
	Before displacement via the GODR	After displacement via the GODR	After displacement via the NR		
Chongqing Reservoir Area					
Kaixian County	36		4		40
Yunyang County	69		32		101
Wanzhou District			42		42
Fengdu County			65		65
Sichuan Province					
Deyang City		72		59	131
Total	**105**	**72**	**143**	**59**	**379**

Source: Author's survey, in November 2000 – September 2001.

It can be seen from the following table that the surveys of Migrant Households before/after Displacement Via GODR were undertaken both in Chongqing and Sichuan because the displacement process has taken place in both places. Sichuan is the largest (in terms of number) of the migrants' destinations among the 11 provinces in the GODR scheme and has received migrants from Kaixian. The survey of Migrant Households after Displacement Via the NR scheme was carried out in the Chongqing reservoir area. In the first group – 'Migrant Households before Displacement Via the GODR' –respondents in Kaixian County live in two different rural settings: (1) the peri-urban district surrounding the county seat; and (2) the purely rural area (e.g., Qukou town). People residing in the peri-urban district mainly engaged in the cultivation of vegetables and fruits, businesses, construction and other non-agricultural activities. The majority of respondents in Yunyang County also live in mountainous areas and engage in agrarian activities. In this way, it is attempted to reflect the migrants' perception of the GODR approach and some important differences between the two major categories of migrant families in different rural settings. In the second group –'Migrant Households after Displacement Via the GODR' – interviewees live in four counties/districts of Deyang city (Jinyang, Mianzhu, Shifang and Guanghan), as can be seen in Figure 3.2. In

the third group – 'Migrant Households after Displacement Via the NR Scheme' – interviews with migrant households were conducted in the peri-urban district of Wanzhou, rural areas in Fengdu, and mountainous rural areas in Yunyang, representing different areas, geographically and economically.

3.2.4 Sampling Procedures

As Table 3.2 illustrates, female respondents accounted for some one fifth in both the groups of the relocatees who have been moved out from Kaixian and resettled in Sichuan, and those persons to be moved out of Kaixian and Yunyang counties. To capture the experience of female migrants after displacement in the reservoir area, the proportion of female interviewees in the group of migrants displaced by the NR was increased. The percentage of female respondents is approximately 50% in the category of migrant households which have been resettled by the NR scheme. From our experience in interviewing the two groups of migrants who had been and who would be displaced via the GODR scheme, woman migrants had a tendency to be shy and less forthcoming, refused to answer the questions or allowed their husbands or parents-in-law to answer on their behalf.

Table 3. 2 Sample distribution by sex and age

Sex/Age	Migrants via GODR		Migrants via NR (N= 143) %	Host people (N= 59) %
Sex	Having resettled in Sichuan (N=72) %	To be moved out in Chongqing (N=105) %		
Male	77.8	77.1	51.0	64.4
Female	22.2	22.9	49.0	35.6
Age				
<25	2.8	2.9	19.9	8.5
25-29	12.9	9.5	16.9	10.2
30-34	18.6	17.1	14.0	10.2
35-39	17.1	19.0	8.8	16.9
40-44	10.0	15.2	11.0	6.8
45-49	18.6	22.9	14.7	15.3
50-54	7.1	6.7	5.9	16.9
>55	12.9	6.7	8.8	15.3

Source: Author's survey in 2000–01.

The 30–49 years old age group dominated in the migrant respondents displaced through the GODR scheme dominated the respondents interviewed. This is because, as in many patriarchal societies, the male is generally considered the main breadwinner and the head of

the household and its spokesmen. For the category of migrant households displaced by NR, the respondents fall into a wide range of age groups, with most of them aged below 50.

The interviewees should be spread over as wide an area and distributed across as many categories, so as to include the most number of socio-economic characteristics. To meet this purpose we seek help from governmental officials in the resettlement bureaus/offices, the agricultural bureaus, and the planning commissions at city and county levels, especially regarding the migrants' income levels. Due to the sensitivity of the subject, it was difficult to get accurate information directly from the respondents. However, we found that the information we had obtained from the local cadres at town, village, and group levels was reliable. Also, observations made by the interviewers of the respondents' living conditions gave good indications of their financial means.

3.2.5 Response Rate

As Table 3.3 shows, the survey covered a variety of occupations of the migrants, but there were conspicuous differences between the two categories of people displaced by the GODR and NR schemes.

Table 3. 3 Sample distribution by occupation

Occupation category	Migrants via GODR		Migrants via NR (N=143) %
	Having resettled in Sichuan (N=72) %	To be moved out Chongqing (N=105) %	
Grain farmer	88.6	52.5	60.8
Businessmen	1.4	11.9	5.6
Vegetable/fruit farmers		9.9	
Transportation workers		7.9	6.3
Tertiary/Service industry		5.0	
Casual labourers	1.4	5.5	
Craftsman	4.3	5.0	
Construction workers	2.9	2.0	
Workers working in factories		1.0	13.9
Students	1.4		1.4
Local cadres			4.9
Teachers & doctors			2.1
Unemployed			4.9
Total	**100.0**	**99.7**	**99.9**

Source: Author's survey, 2000– 01.

Migrants already displaced: In the group of migrants displaced through the GODR, the majority (88.6%) were grain farmers. This figure reflected the outcome of the resettlement policy, which requires all the rural migrants via the GODR to be resettled in agricultural

sectors. Engaging in agricultural activities is the migrants' first step in resuming production after displacement.

Migrants to be displaced: In the group of people to be moved out of the origin areas (Kaixian and Yunyang), the pattern of occupations seems complicated. While farming is dominant, non-agricultural activities are important. These circumstances were uncovered in the 'in-depth interviews' (refer to section 3.5) carried out in Kaixian County. Economic production is a mixture of agricultural and non-agricultural activities in the peri-urban district. The major income sources come from the cultivation of vegetables, running small businesses, working as transportation workers by taking advantage of the geographical location near the county markets, local construction provided by the new county seat and infrastructure reconstruction.

Migrants resettled via 'near resettlement': In the group of migrants being displaced via the NR scheme, there were two principal occupations: grain farmers and factory workers. This is a result of how the migrants were resettled under the NR approach: some of them wee resettled on slopes, some in the local secondary industry and others in the peri-urban areas by 'self-employment'. Most of the respondents in counties of Yunyang and Fengdu were resettled in agricultural sectors. They live in the remote and mountainous towns: Panshi, Nanxi, Lishi, Longjiao and Quma in Yuanyang, Zanpu and Gaojia in Fengdu.

It is worth noting that 13.9% of respondents in this group of 'Migrants via NR' are workers, working either in local state or collective-owned enterprises at county level, or working in township-owned enterprises. Most of these respondents reside in Wanzhou district. They were resettled in factories, or the peri-urban area, becoming workers or jobless. Due to the general low level of education, these 'migrant workers' can only work in jobs which require simple skills and are labour-intensive. Some of them have been laid-off because of poor performance in the local factories, characterised by small scale, obsolete equipment, ineffective management and low profits.

Local cadres: Local cadres responsible for the displacement and resettlement affairs at township and village level were also interviewed. These leaders include the Party secretary, the chairman of a villagers' committee or the village head, and the village accountant because they were in the best position to answer questions about their village. Interviewing them allowed us to have a better understanding of the resettlement at village and villagers' group

level and their attitude towards different resettlement schemes because most of them faced dual tasks: to move their own families and to mobilise other migrant households to move.

3.3 Questionnaire Design

Seven sets of structured questionnaire for migrants, officials and specialists, and migrant sending or receiving communities were designed before starting the fieldwork. A questionnaire was used to provide a structured format for the interview and to minimise 'observers' bias' that may result from using a survey team. The questionnaire was a combination of open-ended and multiple-choice questions.

The questionnaire meant for interviews with officials and experts responsible for the project and relevant resettlement approaches (see Appendix A) are divided into two parts: (i) the migrant sending areas in the Three Gorges reservoir area (Appendix A1) and (ii) the migrant receiving locations outside the reservoir area (Appendix A2). The reasons for setting the questionnaire as open-ended questions are: (1) We realised it would be inappropriate to ask the officials and specialists to fill in a questionnaire; (2) The situations and problems relating to the displacement in the sending areas and resettlement in the receiving locations in the 11 provinces and municipalities are different; (3) It is also difficult for us to anticipate and determine a fixed set of responses for each question because these questions touched on a wide range of aspects such as resettlement policy, planning and schemes; compensation standards, allocation, disbursement, operation procedure and methods; practical and potential problems and crucial issues confronted by the governments and the resettlement authorities. These open questions, as our survey experience has revealed, proved to be effective and flexible, enabling us to obtain as much valuable information as we wanted.

The closed questions were mainly designed to obtain information about the migrants displaced by either the GODR or the NR schemes, and either been displaced or to be moved out, the host people, and the communities either in the flooding areas or in the resettlement regions. The questions for migrants included the interviewees' identity, household status, preference to resettlement schemes, willingness to move out of their origin counties, attitude towards the relocation schemes, major concerns in the process of displacement and after resettlement, income resources before and after removal, strategies on livelihood

rehabilitation of migrant families under different resettlement schemes, satisfaction with the work of resettlement officials, understanding the standards and allocation measures of the resettlement compensation, and so forth. The questions for the host people included their attitude towards receiving migrants, sharing resources such as land, infrastructure, service and benefits of the TGP with the migrants. The questions for the migrant communities covered the characteristics of resource (agricultural land resource), economic structure, agricultural production, social organisations and service in rural society.

The second section (see Appendix A3) was used to examine the strategies of livelihood restoration and production reconstruction, experience, and views of migrants after displacement through the NR schemes. Before asking the main questions, we tried to derive an understanding of the interviewees' background and their families. We wanted to know the interviewee's age, gender, education, occupation, and household status (with regard to the labour force and family members). The problems in restoring agricultural or non-agricultural production and seeking income-generating sources after removal as well as the environmental consequences caused by resettlement in the new resettlement communities are emphasised. The strategy livelihood restoration or reconstruction was considered from different angles. The livelihood rehabilitation can be analysed by comparing the situations before and after the displacement and by comparing it with the host residents. This covers a wide range of aspects: household income, living standards, contract land, sharing public sources (especially public land), income resources, measures to restore or even develop production, intention or plan to escape from poverty. We also wanted to ask questions about their assessment of their displacement via the NR approach. We designed up to five questions to gather migrants' opinions on resettlement schemes. These questions include 'Between the near resettlement and the distant resettlement schemes, which is better?' and 'why'; 'If you could choose, would you prefer to enter a city or town to be resettled in the secondary or tertiary industries or to enter the primary sectors?' and 'why'; 'If you could choose, which resettlement scheme would you choose?' We also wanted to know migrants' feelings about their relocation, covering the main worries after resettlement, how they see themselves as involuntary migrants produced by the TGP, to what extent migrants are satisfied with the work of the officials responsible for resettlement, any special treatment for the vulnerable members of migrant households such as the aged, women, children and disabled migrants.

The third section (see Appendices A4 and A5) focused on the migrants displaced through the GODR scheme. Two sets of questionnaire were designed to cater to two groups of migrants

via the GODR scheme: those who have been displaced and those about to be displaced. To understand the process of the GODR and the assessments of the migrants, eight questions concerning responsibility of the GODR and the anxieties of the migrants (among other aspects) were included. Compensation, one of the most important and sensitive aspects of the displacement, was considered from the perspectives of the type of compensation and funds the migrant families had or should receive, the amount and distribution structure of compensation and funds which were allocated to the migrants. The survey found that what the migrants cared most about and thus the most hotly disputed part relating to 'compensation and funds' is the 'production resettlement fund (a compensation for land losses and/or other production materials of the people affected). Land availability in the receiving locations is another key factor greatly influencing the process of GODR. The models of readjusting land in the host communities and land comparable in quality and location are significant questions to be analysed. Dwelling construction or purchase in the new environment is another important concern in the physical displacement. Questions were also asked so as to understand the strategies or intentions in livelihood restoration and production reconstruction of migrant households and assess their degree of independence after resettlement.

Questions for the group of migrants to be moved out of the reservoir area were similar to those for the group of migrants who have been displaced so as to compare their experience, opinions, willingness, problems encountered, concerns, strategies or intentions or plans of the two categories in the process of the GODR scheme. Participation of the migrants and their assessments of the work of the government and officials were also addressed through asking four questions.

The fourth section (Appendix A6) relates to the host persons who have received migrants. They were found to be likely to worry about conflicts with migrants, especially adjustment and competition for their contract farmland, the sharing of resources, inequality and measures in dealing with the original residents and migrants, and neighborhood relationships.

The fifth section (Appendix A7) of questions was designed to understand the background and gather the required information of both the sending communities and recipient communities inside or outside the reservoir area. These questions were answered by the cadres of villages or villagers' groups because they are the ones who are directly involved in the displacement and resettlement of migrants. They knew exactly the real situations of the migrants, resource and economy in their communities.

Despite several revisions and testing, the questionnaire still suffered some minor problems when implemented in the field. While conducting interviews, we found it difficult for the respondents to answer some questions. For example, the respondents were initially puzzled by the question 'Do you like the government-organised distant resettlement?' The reason was that they were under the impression that they would be resettling somewhere else in their current county, town seat, peri-urban districts or a nearby area. It was also difficult for the respondents to answer 'How do you compare the resettlement location with the sending location?' The primary reason was because the aspects of 'location' were not clarified. It can be economic or geographical. Most migrants regarded it as land quality, which is an important physical factor of geographical location. It is common for them to make the observation that, while the economic situation in the resettlement area is comparable to their origin hometown, the land that they have been allocated is infertile and much worse than what they used to have. In addition, the respondents were often confused about terms such as 'income' and 'compensation structure'. They were often confused by net income or gross revenue per capita in a household. They were hesitant to reveal their income status because they were worried that they might receive reduced compensation if they disclose their true income. They did not know what the 'structure' refers to (composition, amount or the proportion of 'compensation and funds'). A considerable number of migrants did not know what compensation and funds they are entitled to. The disputes on the proportion and to whom should the 'production resettlement fund' belong were hottest issues relating to 'compensation and funds'. Another major shortcoming is that the questionnaire failed to cover some specific aspects, such as the livelihood strategies of the respondents who have been settled in secondary sectors or resettled by self-employment schemes and the advantages and disadvantages of agriculture and non-agriculture-based resettlement.

3.4 Fieldwork in China (December 2000 – October 2001)

3.4.1 Organisation of the Fieldwork: Contact and Cooperation with Government Institutions

The survey covered a huge geographical region (the Chongqing reservoir area and Sichuan province). The duration and funds available for the fieldwork were very limited. It is therefore prudent that the most be achieved with the least. To ensure a smooth process, the relevant governmental departments and authorities at provincial, municipal and county level

were contacted before hand to obtain their permission and cooperation, and the necessary background information. Such preparatory work contributed significantly to the success of the fieldwork.

There were three trips to build cooperative relationships with governmental departments responsible for the TGP resettlement and major research institutes in Chongqing and Sichuan. The first trip was to the Sichuan Provincial Resettlement Office (SPRO), the provincial authority responsible for all the affairs of forced displacement and resettlement produced by hydro projects within Sichuan province. It was the provincial authority in implementing the resettlement policy and planning associated with the TGP before 1997. I interviewed the specialists and officials and introduced to them this study, its objectives and the plan of the fieldwork to be conducted in Sichuan and Chongqing. It was with the great support of SPRO that the fieldwork in Deyang (the trial resettlement area) and some other representative prefectures in Sichuan went on successfully. Without the permission of the higher government, conducting interviews or surveys in counties and villages is banned, especially for an overseas scholar to be conducting investigations into such a sensitive topic as the TGP resettlement.

The second trip was to Chongqing in December 2000 and early January 2001. I visited several important institutions: the CRB, the Chongqing Municipal Planning Commission (CMPC), the Chongqing Environment Protection Bureau (CEPB) and the Chongqing Municipal College of CPC (CMCCPC). The directors of the CRB checked the objectives of the survey, contents of the questionnaires, target respondents, data expected, schedule, the locations and methods of conducting the survey. As 'individual' research or consultation in the Three Gorges area, especially those from overseas are prohibited by the Chongqing municipal government, permission had to be obtained from the News Agency of the State Council, the TGPCC or the Central General Office in Beijing to conduct interviews and compile reports relating to TGP resettlement. With the help of the directors, Kaixian was selected as the main location to do the in-depth fieldwork, as it has the largest number of migrants (especially rural migrants) to be displaced and abundant fertile farmland to be inundated in Kaixian and was the origin area where 9,000 rural resettlers would be moved out and resettled in Sichuan. Yunyang, Wanzhou and Fengdu were ideal counties to conduct the surveys as many rural migrants here had been relocated through the NR schemes, resettled uphill, or in secondary industries or self-employed. They also gave me some valuable

pointers which proved very helpful in revising the survey questions, of which livelihood rehabilitation of migrant households were stressed.

In the CMPC, the deputy director at the Comprehensive Planning Division introduced the plan to construct the 'Chongqing Three Gorges Economic Region' and the important role of the reservoir area in regional economic development in Chongqing municipality and in west China. We exchanged viewpoints on the interaction between displacement and development on different spatial scales: national, regional and local. The local economic development in most counties in the reservoir area is greatly impeded by the arduous process of the actual resettlement. How to access the interplay between displacement and development became a focus in my interviews with officials, specialists and staff responsible for displacement at all levels.

In CEPB, I interviewed the director of the Comprehensive Management Division. Some secondary data about water and air pollution and soil erosion were obtained. These information on the general environmental situations in the reservoir area provided necessary background for our understanding the significance of current adjustments to the 'developmental resettlement' policy.

In CMCCPC, I interviewed professor Yang Xiancheng at the Economy Department, who was leading a group to conduct a survey of woman resettlers in the Chongqing reservoir area. We exchanged perspectives on the study into the female migrants in the process of displacement. This interview addressed the significance of research into vulnerable migrant groups. In my later survey of woman migrants, more time was invested to get the information on their status relating to the female labour force, education, agricultural production, stress, desire, feeling and problems in the process of displacement and resettlement.

The third trip was to the CRB in Chongqing, where I was provided with an outline of the TGP resettlement and some relevant crucial issues such as land-based rural resettlement, opportunities and challenges of resettlement, legal institutions, environmental problems, resettlement funds and management. I also gained a better understanding of the preliminary roles and activities of the political democratic parties in mediating, inspecting and monitoring the process of the TGP resettlement from the Political Consultant Committee (PCC).

Through contacts and interviews with these officials and experts relating to the TGP resettlement during the three major trips before conducting the full and in-depth survey, the principal objective of this study was demonstrated to be of significance. Understanding the 'developmental resettlement' in theory and its implementation in practice is important. In other words, how to manage the relationship between displacement and development is critical in the TGP resettlement under a great pressure to fulfill the 'political task', which is to move out the migrants and resettle them satisfactorily.

To have a general knowledge about the Three Gorges reservoir area and the Three Gorges dam construction I made another trip from Chongqing to Yichang city, Hubei by ship. Along the banks of the Yangtze River, many propaganda slogans about the TGP construction and displacement were conspicuously marked and displayed on the hills and mountains in the countryside, hung from buildings in urban sites, shipping decks, boats and ships.

At each stop of the ship, I seized on every opportunity to find migrants and talk to them about their feelings and problems in their resettlement. The 'pilot survey' was conducted in Wushan County in the Bashan mountainous region. Six rural migrants (five working as boatmen in a collective-owned shipping company) and a farmer were interviewed. The designed questions were easily understood by the respondents, which were the questions to emphasise, which were not applicable to the respondents and how long did each interview last. After eight hours of interviewing, questions proved to have covered the major concerns of rural migrants, which include: (1) their attitude towards the 'distant resettlement' and the reasons; (2) their desires; (3) fair compensation and distribution, especially the 'production resettlement fund'; and (4) issues regarding land.

The 'pilot survey' provided many useful improvements to the later survey, especially to the in-depth survey in Kaixian. It proved necessary to invest more time in addressing the migrants' major concerns, which related to their livelihood restoration and production reconstruction after displacement. The selection of respondents should cover as many groups, occupations and economic classes as possible, with approximately equal numbers of male and female respondents. The process of interview needs to be handled effectively. There have been various difficult situations arising during the actual interviews. For example, migrants often regarded me as a 'cadre' assigned by the top authorities. They told me, 'what you ask is what we (migrants) are really concerned about'. Very often I was encircled by them and swamped by many questions relating to the practical problems of individual migrants or their

households when starting interviews. Sometimes the respondents may stray from the point, dwelling too much on individual or irrelevant issues. To handle situations like these, we had to listen patiently to what they were saying and then lead them back to the topic at hand. These experiences proved helpful in improving the survey methods and skills.

3.4.2 Interview Skills Training and a Complete Survey

In parallel with the preparatory work for the actual survey, 15 undergraduates from the Sichuan Normal University were recruited. The skills required the student interviewers were mainly in how to choose their respondents in practical surveys. Apart from the general guidelines and some required basic rules for interviewing, the interviewers were required to exercise discernment in ensuring that the respondents they selected were appropriate to the task at hand. The major methodology was to teach them how to assess and weigh the respondents in their mind before interviewing them, balancing the number of respondents between male and female, and balancing the number of respondents among the different characteristics, such as gender, age and income. The aim of this procedure was to strengthen the representativeness and reduce the bias arising from the survey method.

The training on interviewing skills was completed in late January 2001. All the students were in their third or fourth year study at the Resource and Environment School. They had gained some fieldwork experience from their courses of geographical and environmental subjects. All these student interviewers came from those counties where the surveys would be conducted. They were able to conduct the survey during their one-month winter vacation from early February till early March.

The student interviewers were required to conduct surveys in their origin counties and attend a one-and-half day survey course aimed at helping them understand the TGP and the associated resettlement, the survey principles, objectives, methods, interview skills and background of each survey area. If interviewers have a good understanding of the survey and realise that it is an important undertaking, they are more likely to be diligent, serious and careful in their duty and work (Fowler and Mangione 1990). We also determined the preliminary targets of villages or peri-urban towns to be surveyed. They were required to be familiar with the respondents and survey methods as soon as they could because they were likely to make a non-random selection of interviewees.

The students told me on completion of their survey, that the short-term and intensive training programme had proved to be very effective in their interviewing practice. The main method of supervising their actual surveys was entirely through telephone communication. Usually I called them to get feedback of their work and assist them in solving unexpected questions and problems. Another control method was to inform them I would inspect these survey locations to confirm if they had carried out their surveys appropriately, which I did in Deyang of Sichuan and Wanzhou district of Chongqing during the period of my in-depth interviews from March to July 2001.

The main mode of transportation for our survey trips was the local motorcycle-taxis (*modi*). We were most worried about the safety of this means especially on narrow mountain paths in winter. A problem in some locations was that the rural migrants' residential sites were far away from the county or township center to which where no bus routes extend. It took much time to do the survey and sometimes we had to proceed on foot to the migrant households that were isolated from other residents. I was greatly impressed by these student interviewers who worked very diligently and sacrificed their pleasures of reunion with their families during the period of the Spring Festival. All of us were pleased that the actual surveys have achieved the anticipated goals despite all the difficulties. When the survey teams in Chongqing and Sichuan returned to Chengdu, I arranged for each of them to give a detailed report relating to their survey. We paid special attention to the important questions that would help me conduct a complete and more detailed in-depth survey in the following stage on my own.

3.5 In-depth Survey

3.5.1 Cooperation with Kaixian Resettlement Bureau

On completion of the full survey, I carried out an in-depth study primarily in Kaixian County. The major purpose was to collect more detailed primary information about the displaced people who were in different situations: those who have been displaced via the NR scheme and those to be moved out through the GODR in 2001–02. Also, we hoped to be able to collect primary and secondary data about the flooding areas and designated resettlement communities in this county. The in-depth fieldwork in Kaixian would examine specific categories of migrants, allowing us to examine to what extent the local resettlement capacity

would be impacted by local resources, the consequences of the near resettlement, and the perception of migrants towards their displacement in different rural settings. This would enable us to understand certain special issues, such as livelihood resources before relocation via the GODR and after resettlement via the NR, and potential impoverishment after displacement through different resettlement approaches.

In March 2001 I went to Kaixian to conduct the in-depth survey, taking advantage of travelling together with the deputy director and Party secretary of Kaixian Resettlement Bureau (KRB) and the ex-deputy secretary of the Communist Party Commission in Kaixian, who briefed me on the progression of different resettlement approaches, pressures and critical problems of resettlement, and social, cultural, economic and geographical background of Kaixian. They offered great support for this survey.

After receiving the survey confirmation from the Chongqing Resettlement Bureau, the KRB soon granted me the permission to conduct the survey. They helped me to select the most representative towns and villages for the survey according to the criteria: different rural settings, different categories of migrants, different communities with different economic resources or production measures and typical migrant communities which would send out or receive migrants. A staff from KRB who was familiar with the survey locations provided much needed help in the fieldwork.

I conducted the in-depth survey in four towns which would suffer serious inundation in this county. Qukou was representative of the purely agrarian rural setting in mountainous region. Hanfeng, Fengle and Zhendong composed the peri-urban zone of the county, representing the mixed rural setting. During the interviews of these migrant households, I recorded and did all the interviews alone because migrants felt uncomfortable seeing the staff from the county agency or from the township government, or even cadres in their villages in the interviewing sites.

In Qukou, the survey was carried out in villages Yunan, Puxi, Xiaohe and Shangma. A detailed investigation of 32 migrant households was successfully conducted to understand the main income sources, flow of the labour force, and the trend of 'feminisation in agriculture' in rural society. Equally important, I surveyed Yunan village to understand the situations of farmland to be inundated and the land availability. Yunan village was selected as a case study

area in this study to analyse land-carrying capability, using Geographical Information System (GIS) techniques and a GIS-based multicriteria approach.

In the peri-urban district, I surveyed a group of villages. Given the fact that migrants had similar perception to the GODR, similar economic resources and production, and similar problems in the process of displacement at the villagers' group level, two or three migrant households were selected as representatives for conducting further interviews in each villagers' group of a village. To better understand the willingness of the residents living in the peri-urban district, a survey of seven villages, where a number of people were required to be moved out, was conducted. This special survey required the respondents to answer the open-ended questions: 'Which resettlement scheme does your family prefer?' and 'In which year would your family like to move out?' This special survey covered 1,516 farmers and 163 non-agricultural persons from 526 migrant households. In addition, the local cadres responsible for the displacement and resettlement at township and village level were interviewed to understand the general situation in their communities.

These in-depth interviews and community surveys proved very valuable in the later analyses and discussion. For example, two major groups of rural migrants in different rural settings were summarised. These two groups of migrant families had different production conditions and expectations and may adopt different strategies to restore their livelihoods after displacement. A series of land issues relating to land provision at the local resettlement communities in the reservoir area were identified. The problems on land not only impeded the process of rural resettlement but also induced the potential marginalisation.

3.5.2 Secondary Data

While conducting the fieldwork in Kaixan, I visited most of the governmental departments in relation to the TGP displacement and resettlement. I interviewed more than 35 officials and experts in these institutions at county level regarding the aspects which greatly impacted on the rural resettlement. These departments were the Planning Commission, the Land Administrative Bureau, the Agricultural Bureau, the Forestry Bureau, the Environment Protection Bureau, the Statistics Bureau, the County Annals Office, the Administrative Committee of Construction of the New Urban, and the Administrative Division of Farmland Protection Works, and so forth. The purpose was to obtain a range of secondary data on

inventory of physical assets to be flooded, landuse, farmland protection works, statistics, environmental situations, and economic development in this county. Another objective was to understand the progression of the other aspects of resettlement, which included the reconstruction of the new county seat and displacement of urban residents, relocation of the industrial and mining enterprises, and infrastructure restoration. From these departments, I obtained some valuable secondary data, especially the landuse data in Yunan and in the peri-urban zone. But some data were not available mainly because of the inadequacies or imprecision of data. For example, data on the conditions of soil and water erosion could not be provided because the outcomes of the past two studies using Remote Sensing techniques were imprecise and the results of the recent environmental assessment have not been released. This type of data was planned as references in analysing the environmental consequences of rural resettlement.

3.6 Major Problems Encountered in Field Work

3.6.1 Accessibility

The characteristics of the target population and research areas had an important impact on our survey, resulting in some difficulties in accessibility. These characteristics included: (1) the wide extent of areas surveyed in Sichuan and Chongqing; (2) interviewing migrant households which were spatially dispersed; (3) the multiple characteristics of respondents under different categories; (4) the mountainous terrain in some locations in the reservoir area; (5) the low educational levels of some respondents, especially rural migrants. To cope with these problems, some measures were taken:

- focusing the survey regions mainly on the Chongqing reservoir area (especially in Kaixian) and Deyang city in Sichuan;
- highlighting the focus of the interviews and simplifying the questions in order to capture the important data and information which this study is concern about; and
- assigning the student interviewers to do the survey at their home counties.

For officials and experts responsible for the resettlement affairs in the sending and receiving areas, the major questions confronting them are mainly about the 'developmental resettlement' policy, resettlement approaches, planning, and difficulties in practical

operations. For migrants, emphasis was on their attitude towards different rural resettlement schemes, stresses before and in the process of displacement, livelihood restoration and production reconstruction after displacement, and their real situations before and after relocation. Some student interviewers encountered some difficulties in entering the migrants' residence and beginning the formal talks with the interviewees. Fortunately, all student interviewers were natives, and three student families were in the reservoir area and needed to be moved out. So most of these interviewers were familiar with their surveyed regions and the conditions of interviewees, including the local dialect. The interviewers were aware of the importance of introducing our identities, our organisation and survey objectives. An appropriate time to interview these migrants was in the Spring Festival season because most migrants returned home for family unions, including some who were doing casual work away from hometowns.

3.6.2 Sensitivity and Confidentiality

There had been some sensitive concerns regarding the survey. It was true that some officials, especially those working at the top governmental agencies at provincial and county level, were very careful and prudent when being interviewed. Some of them, rather than expressed their own opinions, cited the stance of the central government. At Gaojia town in Fengdu, a student interviewer was forbidden by the local cadres to interview migrants. Sometimes the interviewees, including scholars in research institutes, seemed unwilling to disclose what they really think about the resettlement schemes, especially the 'distant resettlement' approach because TGP resettlement has become a very sensitive political issue in China. They were hesitant to relate local resettlement events, some of which had never been reported by the public media to avoid unsolicited influences on the TGP and among the migrants. Consequently, the local cadres responsible for resettlement seemed more likely to know about the practical resettlement problems. The interviews with migrants and hosts proceeded smoothly and the majority of them were eager to talk about their situations. Especially in the in-depth survey in Kaixian, after the accompanying staff or local cadres left, the independent interviews became much easier. It was understandable that migrants would feel prudent and hesitant when they answered some sensitive questions in the presence of officials or cadres. These questions included: 'Are you satisfied with the work of the officials responsible for resettlement both in the sending and receiving areas?' and 'Do you trust that the government could organise the distant-resettlement scheme successfully?' Occasionally, a few migrants

and host people refused to answer the questions or were hesitant to tell their names. But most migrants and local officials expected that their real situations and problems could be objectively reflected to the top government (the provincial and central government).

With the progression of the TGP resettlement, the opening policy and economic reforms in China, it was impressed upon me that most migrants could voice what they thought. Yet for various reasons, it appears necessary to take certain measures of confidentiality to protect the interviewees, in particular, officials and experts responsible for the TGP resettlement schemes and the local cadres. Under most circumstances, therefore, we use pseudonym for senior officials, experts, and local cadres interviewed rather than their real names in the following chapters. For migrants and host people interviewed, their real names and family situations are sometimes used in the thesis.

3.6.3 Errors in the Survey

As researchers or interviewers, we can affect interviewees by the way we conduct our surveys or interviews. As Findlay and Li (1997) have pointed out, when carrying out surveys and interviews, there is the possibility of the interviewees being influenced by the researchers. It is also possible that the designed questions may be misunderstood by the respondents. Sometimes the respondents gave out of context answers to the questions posted in the questionnaire. The context of the interview, and the way the interviewers organised and handled the process of investigation could have an impact on the amount and types of errors in the survey (Fowler and Mangione 1990). Thus it was important to explain the aims or reasons for the surveys and to make all the efforts to get the respondents' cooperation, guiding the respondents to answer questions freely and effectively. Sometimes it was needed to trace their responses to important issues implied but perhaps not explicitly stated in the survey.

3.7 The Application of GIS Analysis

Yunan village in Qukou town of Kaixian was selected as a case study area. It is an agrarian area which will be submerged by the reservoir. Reclamation of slopping land, improvement of the yields of existing farmland, and readjustment of land from local host people and

resettlement communities were principal means to secure land in order to settle people in the reservoir area. Based on recent land-use survey and population data on the study community, using GIS techniques and a GIS-based multicriteria analysis, landuse characteristics in both the sections of inundation and resettlement in this village can be analysed. Using GIS techniques, the human carrying capability of land and land availability can be mapped out. In this study GIS analysis methods from a community dimension might shed light on the interplay between available farmland and resettlement. The social application of GIS in this study will provide constructive implications for the TGP resettlement decision-making and landuse planning.

3.8 Conclusion

The ten-month fieldwork has achieved the intended goals, the result of a thorough reading of the literature on field research and both quantitative and qualitative social research and survey methods, careful planning and organisation of the surveys, designing and re-designing seven sets of questionnaires, and conducting the survey (both quantitative and qualitative) to suit the special process and nature of the TGP displacement and resettlement both in the reservoir area and in a distant province which resettled migrants from the reservoir area. This survey provides not only a good primary and secondary data for analyses and discussions in the thesis but also an insight into the 'developmental resettlement policy' and its implementation in China. Rural resettlement, especially the GODR, may deeply influence the demographic and social change in the resettlement areas.

The sampling methods adopted in the survey took into consideration three major steps. (1) The counties were selected mainly for their representation of rural resettlements and the interlink between the sending counties in the reservoir area and the receiving areas in distant provinces via the GODR scheme. (2) Villages were selected in compliance with the basic displacement categories for 'Migrants After Resettlement' by either the GODR or NR approach and 'Migrants Before Displacement' by the GODR at different locational settings in rural areas. (3) The migrant households interviewed were selected by the interviewers, covering a wide range of age groups, occupations and approximately equal number of male and female respondents.

Five major respondent groups were identified: officials and experts responsible for the TGP resettlement exercise, two sub-categories of migrants resettled via the GODR or NR schemes; migrants to be displaced via the GODR in the reservoir area; and host people who have accepted migrants in the distant province. The questionnaires were redrafted several times and later modified as per comments and suggestions of experts and officials responsible for the resettlement. The design of these interview questions reflected the characteristics and differences in the various categories of population affected by the TGP resettlement project.

The fieldwork went through three main phases: preparation to get access to study areas and a 'pilot survey', full survey and in-depth investigation. Employing native students as interviewers also proved successful because they were well educated, skilled, and most of all, familiar with the environment, lifestyle, production measures and interviewees at their origin counties. The in-depth survey allowed further probing into major issues facing the resettlement authorities in both the migrant sending and receiving areas, and migrants in different situations. Obtaining the understanding and support of the top authorities proved a key and successful step in conducting the fieldwork. Sichuan Provincial Resettlement Office and Chongqing Resettlement Bureau played an important role in the successful undertaking of the fieldwork. The major problems when conducting the fieldwork were accessibility to the survey areas and sensitivity of some topics associated with TGP displacement and resettlement.

Chapter Four

DEVELOPMENTAL RESETTLEMENT

This chapter examines the institutions that form the base of developmental resettlement in China and have shaped the course of the TGP resettlement. 'Institution' here refers to the policies, principles, legal and administrative spheres associated with reservoir resettlement in China, in particular, the TGP displacement and resettlement. Some problems relating to the implementation of the 'developmental resettlement' policy and resettlement schemes are identified. Participation of the affected people (resettles and the host people) is also analysed.

4.1 'Developmental Resettlement' Policy

4.1.1 Efforts to Solve 'Left-Over Problems'

In the early 1950s the Chinese government paid equal attention to both resettlement and engineering design of reservoir projects. However, the campaigns of the 'Great Leap Forward Movement' and the 'Cultural Revolution' caused major changes in the structure of society and the economy, resulting in many problems that were only beginning to be solved in the early 1980s, with some still remaining today. In 1952 the first regulation for resettlement compensation was passed, in which the principle of compensation for national land requisition for infrastructure construction was stipulated. In 1953 an important policy on minimising the number of migrants affected by each project was declared. This policy required that the living standards of migrants should not be lower than their living standards prior to resettlement through adequate compensation. However, the 'Great Leap Forward Movement' destroyed the normal project construction and resettlement process, resulting in a series of political, economic and social issues. It brought about major ideological changes, mistakenly highlighting or exaggerating the roles and capabilities of humans, to the extent of ignoring the laws of nature. This caused a variety of serious 'left-over problems' of reservoir resettlers. For example, in 1956 compensation standards in Sanmenxia reservoir resettlement planning was 620 *yuan* per capita for near resettlement and per person 800 *yuan* for migrants through the distant resettlement scheme. But during the 'Great Leap Forward Movement' the compensation was reduced from 429 *yuan* per capita in 1958 to 316 *yuan* in 1959. In some

resettlement provinces there was no money at all to compensate the migrants. This was a direct cause of the impoverishment of rural migrants after removal. Migrants had no shelter to live in and no land to cultivate. It was not until 1964 that the government became aware of the serious problems of Sanmenxia resettlement and increased resettlement funds to help migrants rebuild dwellings and obtain land. However, with the advent of the 10-years' 'Cultural Revolution', the whole country was thrown into chaos, aggravating the resettlement problems. Absolute impoverishment and the relative poverty of migrants after resettlement, compared with the livelihood standards of the neighbouring people who did not move, were serious. Large numbers of migrants frequently appealed to the governments for financial help. The society in the reservoir regions was extremely unstable.

Since 1981 the government has begun to solve these left-over problems of reservoir settlers. On 29 July 1986 the General Office of the State Council released a circular of the Ministry of Water Resource about 'Dealing with the 'Left-over Problems' of Reservoir Settlers' (Government document No. 56 [1986]). The policy and principles of solving the 'left-over problems' were clarified. A '10-year plan' was initiated for every large scale reservoir project in order to find appropriate solutions to problems that were particular to each project. Incomplete statistics show that a total of 2.88 billion *yuan* was invested by central financing between 1986 and 1997 in the reservoir areas, excluding 900 million *yuan* from provincial and local governments. The most serious problems, which include production conditions, livelihoods, drinking water, transportation, medical situations and education of migrant households, have been alleviated. The incomes of migrant families have been enhanced to some extent. Even while absolute poverty has yet to be completely alleviated, relative poverty surfaced. Income disparity between migrants and host people widened. The economic development of migrant households is much lower than that of the local economy (Survey Group 2001a, 2001b).

The principal lesson drawn from the past dam resettlement practice in China is that production rehabilitation of migrants should be the core concern in forced resettlement. The key causes of many unsolved 'left-over problems' can be summarised as: (1) The amount of land for the migrants was inadequate, compared with before moving and with the hosts in the resettlement communities. Moreover, the land available was not of comparable quality to that before resettlement. (2) In the past, solutions to the existing problems are based on egalitarianism, through which compensation and funds were allocated to migrant individuals on the basis of people displaced. Due to a wide range of problems and limited funds, it is hard

to solve all of the major problems. (3) The economic reconstruction of migrants is hampered because of closed markets in most reservoir areas and the low levels of education and skills of the migrant labourers.

The main method of dealing with the 'left-over problems' of reservoir resettlement is to displace and resettle the migrants again. They have also been granted more compensation. However, this should not be viewed as additional compensation because it is given as a means to help the migrants overcome their problems of livelihoods and production permanently, as opposed to a subsidy to help them tide over the temporary hardship of resettlement. Thus, this compensation was not distributed to each migrant household as before. In theory, economic compensation can be carried out as a 'one-off' scheme. After the completion of economic exchange, both partners have no economic relationship. However under the ownership system in China, the government allocates production materials and inputs, e.g., farmland. Compensation and its distribution are not founded on the principle of equivalent value, unlike in a market economy. This means that compensation for migrants does not fully reflect the value of losses of migrants. This compensation mechanism is a fundamental reason why the Chinese government must cope with the 'left-over problems' of reservoir resettlers.

The developmental resettlement policy had, by the early 1990s, been introduced in reservoir areas in response to the problems created by earlier approaches. The policy is essentially about the incorporation of economic development in reservoir areas with resettlement plans. With the progressive development of the socialist market-oriented economy, the following measures have been adopted for dealing with these problems.

1. Increasing compensation and funds, which require the increment in the proportion of funds from the revenue of electricity sale or other channels of investment.
2. Investing in resettlement-related projects, especially reclamation of wasteland, utilisation of untapped water bodies, enhancement of quality of cultivated land, and the increase of usage of farmland.
3. Improving investment management and increasing investment profits.
4. Developing education (both vocational and general) in the reservoir areas.

4.1.2 Concept of 'Developmental Resettlement'

The 'development-oriented resettlement' policy emerged in a symposium organised by the then Ministry of Water Resources and Electric Power (MWREP) in 1984 to summarise experiences and draw up lessons of involuntary resettlement in China. The Chinese government document [1986] No.56 stated that 'reservoir displacement must be transformed from a passive compensation scheme to a creative production programme and be shifted from compensating livelihoods to assisting production, linking the reconstruction of reservoir areas to the planning of developmental resettlement'. The funds needed to resettle the relocatees should be included in the general investment plan of the projects. The '*Regulations on Compensation of Land Requisition and Resettlement Rehabilitation of Large and Medium Sized Water and Hydropower Projects*' (hereafter referred to as the *1991 Regulation*), issued on 1 May 1991, is the earliest regulation referring specifically to reservoir-induced resettlement. In the '*Changjiang Three Gorges Project Resettlement Regulations*' (hereafter referred to as the *1993 Regulations*) (SCC 1993), issued in 1993, Article 3 stipulates that:

> Displacement and resettlement is led and organised by the relevant governments. The resettlement fund was planned and would be used comprehensively. Resources should be exploited reasonably. Agricultural resettlement is the basic form of resettlement, to be combined with industry and commerce through multiple approaches and multi-industries. The living standards of migrants should be maintained at or surpass their original level. Resettlement should give rise to priority in economic development of the reservoir region and the improvement of the livelihoods of migrants in the long term.

In the revised '*Changjiang Three Gorges Project Resettlement Regulations'* (hereafter referred to as the *2001 Regulations)* (SCC 2001), Article 3 reiterates the above principles. The *2001 Regulations* emphasise the 'developmental resettlement' policy, characterised by adopting the 'distant resettlement' to remove part of rural migrants out of the reservoir area and committing to protect the environment in the reservoir area for sustainability. The objective is to, at a minimum, restore livelihoods to the original level, even though the meaning of the word 'original' is not explicitly defined. Does it refer to the living standard at the time when the TGP was officially passed by the National People's Congress of China (NPCC) in 1992, or when the migrants are actually moved out of the reservoir area? Moreover, the 'original standard' is a bare minimum because the 'restoration' does not take into consideration the regional economic development in the reservoir area during the 17-year period of dam construction. Nor is this standard of 'restoration' to be compared with the development in the other regions, especially the 11 provinces which receive migrants through distant resettlement.

At a conference on the TGP resettlement work in 1995, the deputy premier Zou Jiahua explained that:

> *Developmental resettlement* is for the country to set aside resettlement funds for restoring the resettled migrants' livelihoods and production. Through development and construction, more money could be raised to stabilise the livelihoods and production of the migrants, and subsequently to promote resettlement and stability in the local economy. The ultimate objectives of the TGP resettlement are to help the migrants restore or even exceed their former living standards and to create favourable conditions for the long-term economic development in the reservoir region.

At another conference on TGP resettlement work and 'corresponding support' in 1997, through which the central government asks the other provincial or municipal governments outside the Three Gorges reservoir area to support the relocation in the reservoir area, the former premier Li Peng explained that:

> Implementation of the *developmental resettlement* policy is to be carried out through comprehensive planning for the use of the resettlement funds, so as to make appropriate use of local resources and to actively promote worthwhile industries as the means to fuel the economic development in the reservoir region during the process of displacement and resettlement.

In the spirit of this objective, the restoration of livelihoods and production of migrants becomes the essence of the resettlement policy. Before the 'two adjustments' to the resettlement policy were put forwarded in 1999 (Zhu 1999), the Chinese government's emphasis had been on the 'developmental resettlement' policy mainly from the economic perspective. Land or agriculture-based resettlement relying upon existing natural resources, particularly land endowment in the reservoir area, has been a fundamental approach to rural resettlement.

The principal goal of China's 'developmental resettlement' policy requires that involuntarily displaced persons be assisted in their efforts to improve their former production levels, income earning capacity, and living standards, or at least to restore them to before-project levels or before actual displacement. Thus, clearer specification of 'restoration' or 'improvements' on objectives, alternatives, and time horizon are required for planning, monitoring, and evaluation of resettlement planning. Restoration is a short-term objective, but improvement of the productivity, living standards and lifestyles of the displaced is a long-term objective of the project.

4.1.3 Policies of TGP Resettlement

Taking into considerations the magnitude and complexity of the TGP resettlement, China has drawn up the following resettlement policies (SCC 1993, 2001).

1. TGP resettlement carries out a 'developmental resettlement' policy;
2. Implementation of the 'developmental resettlement' policy adopts a management system: 'under the leadership of the central government, carried by the relevant provinces, and based on the relevant counties';
3. The Three Gorges reservoir area is entitled in 'Changjiang Three Gorges economic opening zone', sharing the same preferential policies as in the coastal opening districts. Yichang, Wanzhou, and Fuling cities are listed among the opening cities alongside the Yangtze River and share the same policy privileges as those cities on the coast;
4. The State Planning Commission is accountable for working on the general compendium for economic development in the reservoir region to determine the direction of the development;
5. The State appeals for 'corresponding assistance for the TGP' (*duikou zhiyuan*) from all the regions and departments of the country, in compliance with the principle of 'advantageous complementation, mutual-benefit, long-term cooperation, and mutual development'.

In the *2001 Regulations*, 7 chapters and 64 provisions are included. The general policy, principles, objectives, administrative system, rural resettlement, urban and enterprises' relocation, reconstruction of infrastructure, restoration of special equipments and administration to the reservoir flooding and resettlement areas, preferential measures, and penalty system relating to the TGP resettlement are specified in detail. In the regulations, 10 items of preferential policies or measurements are underscored, as shown in Table 4.1.

In addition, some temporarily auxiliary policies on TGP resettlement have been implemented. A total of 40 billion *yuan* has been budgeted to be spent on compensation and funding for resettlement, making up around 45% of the overall cost of the TGP. After completion of TGP in 2009, a proportion of the profits generated by electricity supply will be allocated as 'development funds' to develop the regional economy in the reservoir area as well as those distant resettlement communities in other provinces.

Comparing these policies with the World Bank's policies on resettlement, it can be seen that the Chinese policy highlights the roles of compensation of the country and the self-reliance of the relocatees. The Bank's policy places strong emphasis on participation and pays more attention to vulnerable groups such as indigenous people, the aged, women and landless people.

Table 4. 1 Major preferential policies for TGP resettlement

❑ Part of the revenue from power generation, beginning 2003, will be assigned to Hubei and Chongqing in the reservoir area and other resettlement communities receiving displaces.	❑ Part of the tax revenue collected from the sale of electricity to be allocated to Hubei and Chongqing for the development of the reservoir area and protection of the environment.
❑ The duty on the submerged land at the dam site and in the reservoir area is levied at 40% of the usual gross taxation rates. The duty on the recruited land for urban and enterprise relocation and reconstruction will be levied in full and paid to the relevant local departments. The tax collected will be invested in rural resettlement.	❑ Inundated areas which are of suitable conditions will be given priority in the establishment of "trial and demonstration centres" for eco-agriculture, in assistance to these areas. In addition, the receiving areas will be given priority in the allocation of "basic farming and water conservation" funds, to be used for setting up water conservation infrastructure.
❑ Cities and counties in the reservoir area with the applicable hydropower resources will be listed as the 'experimental counties for rural electrification' and receive assistance for their development.	❑ The reservoir area will be given priority in the distribution of the electricity generated after the power station commences service in 2003.
❑ When arranging development projects or assigning assets and capital, the central government and the provincial/municipal government in the reservoir area should give priority to the reservoir area.	❑ All relevant governments, provinces, autonomous regions and municipalities should team up with one another to assist in the development of the various aspects (such as educational, cultural, technical, human resource, management, information, financial and material capital) of the reservoir areas, based on the principles of long term cooperation, for the betterment of all involved.
❑ All the construction projects arranged by the country in the reservoir area and the beneficial regions of the TGP should give priority to recruiting eligible migrant labourers.	❑ Newly developed land and new enterprises set up to resettle migrants can enjoy reduction or exemption in the duty levied on agriculture, special agricultural products, income taxation rates etc.

Source: SCC (2001).

4.1.4 Principles of 'Developmental Resettlement'

- **Recovery Principle**

A primary purpose of the 'developmental resettlement' is to use the compensation for flooding losses to help migrants rebuild their livelihoods and production by reconstructing

and redeveloping the reservoir area. In this sense, compensation is the prerequisite of development through resettlement. Without compensation there is no opportunity for development. Calculation of the compensation should take the livelihood level of the migrant households before the displacement as a standard, instead of only the measurable losses due to the inundation. The actual compensation for the TGP migrants is underestimated by relevant authorities (e.g., CWRC) for it was based on the physical flooding inventory, which did not include most intangible and immeasurable losses of the migrants. Chapter7 will analyse this issue in detail.

- **Development Principle**

To achieve the goal of 'developmental resettlement' through establishing the livelihoods and production of migrants, creating opportunities and conditions for sustainable development in all resettlement locations is important. Developmental resettlement of the TGP has closely combined compensation with development since the commencement of the project. Firstly, since the government started to work on the overall displacement plan, production and development of the migrants have been emphasised. For instance, facing the incompatibility between the large number of rural migrants and the inadequate human carrying capacity of land in the Three Gorges reservoir area, governments at all levels have concentrated primarily on production since starting on the 'experimental resettlement' in the reservoir area in 1985. During the 8-year resettlement trial, the capital invested in land reclamation and improvement amounted to 235 million *yuan*. The newly reclaimed land totaled 6,000 ha, which could accommodate about 50,000 rural migrants. Secondly, besides one-off compensation for the migrants' houses and other assets, some funds have been arranged to be invested and reinvested in resettlement development. A few million *yuan* have been earmarked for special loans for technical innovations in enterprises and joint ventures annually. Thirdly, developmental resettlement considers the resettlement fund as a part of a whole package of investment, which is managed and operated by local government as basic construction fund. This enables various resources in the reservoir area to be developed on the basis of sound organisation and planning. In addition, compensation is the basis for budgetary estimate of resettlement project. When carrying out the planning, compensation and development are combined together and considered as a whole, formulating an integrated planning but implementing it at different stages. Resettlement must motivate social institutions and all social sectors, including the migrants themselves, to make good use of the resettlement investment, so as to achieve the goals of resettlement.

- **Systematic Principle**

'Developmental resettlement' is a complex and systematic engineering activity (see Figure 4.1). Displacement and resettlement should be linked to the improvement of the eco-environment in the reservoir area, taking into consideration development both in the reservoir area and distant resettlement regions. It is necessary to consider the restoration or reconstruction of the economic, social and cultural systems of resettlement. It requires integrate resettlement areas into the regional economy, making it a compatible development among population, resource and environment.

- **Participation Principle**

'Developmental resettlement' is a people-centered activity. Migrants should have the right to participate in the investigation of their physical losses and determine appropriate standards of compensation, options of resettlement approaches, distribution of various resources, options and decision-making of developmental production projects such as rebuilding infrastructure, land reclamation and improvement, irrigation and public services. Participation of migrants is one of the important measures to ensure an effective 'developmental resettlement' for their benefit.

Given the land tenure system in the countryside and the provision of funds for land compensation in the recipient communities, villagers or migrant families could not claim either land or compensation for the land they farmed, or expect equal allocations of farmland to every resettler in their new and different communities, they are powerless to reconstruct their livelihoods without support of the local government. However, these migrant families could choose their own occupations, within limits set by the availability of funds and the natural resource base in the receiving places. For those families to be displaced far away from the reservoir area, families and local officials need to discuss about the proposed resettlement locations. An evaluation group including migrants is suggested.

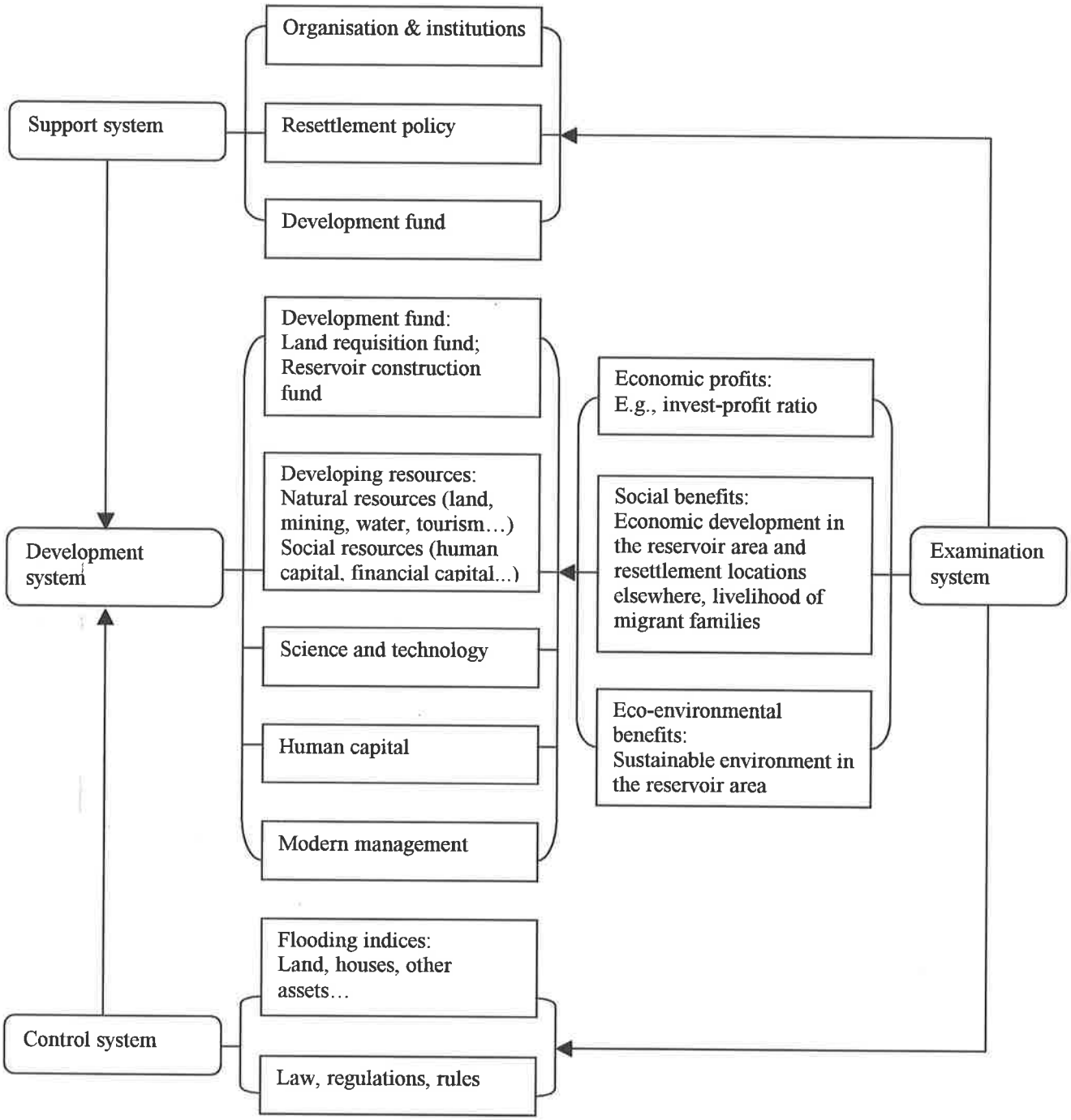


Figure 4.1 Structure of the Developmental Resettlement of the TGP

Source: CWRC (1997, p. 60).

4.2 Adjustments to the Resettlement Policy

4.2.1 Two Adjustments

There have been two major adjustments to the policy since May 1999 (Zhu 1999). First, commencing in 2000, there was a shift from a policy of settling rural migrants to uphill sites in the reservoir area via 'Near Resettlement', settling rural migrants in 'Secondary and Tertiary Industry Sectors', and settling rural migrants by themselves through 'Self-employed Resettlement' approaches to 'three combinations' of resettlement approaches. The 'three combinations' are: between local resettlement and distant resettlement, between centralised resettlement and scattered resettlement, and between the government-organised resettlement and voluntarily self-employed resettlement, based on a principle of resettling migrants in line with local conditions. The government encourages more rural migrants to move to more distant resettlement sites beyond the reservoir area. Second, the policy on relocation of industrial enterprises in the reservoir area has been shifted from restoring them to their original scale, standards and functions, coupled with technical innovation of enterprises to be relocated, to restructuring, improving quality of product and enhancing benefits through merging or bankrupting unprofitable small or medium-sized enterprises. The structures of industrial organisation, ownership and product must be readjusted in the process of relocation. Those state-owned or collective-owned enterprises generating serious pollution, without market for their products, and with liability outstripping assets must be bankrupted or shut down. The 'two adjustments' are significant contributions to the 'developmental resettlement' policy.

4.2.2 Contributions to Sustainable Development

To seek sustainable development in the reservoir area, it is important to select suitable resettlement areas. Studying the human carrying capacity of the land in the selected resettlement locations and then seeking a viable distribution of population are important. In the land-based rural resettlement, the land supply in the resettlement communities is a pivotal determinant in the evaluation of the number of resettlers that it can receive. Moving some rural residents out of the reservoir area can prevent people from developing land on steep slopes. Soil erosion can then be reduced. 'Moving people out' lays the foundation for

sustainable development in the reservoir area and realisation of the target of 'becoming rich gradually' for rural resettlement.

There are 1,599 industrial and mining enterprises to be relocated in the overall reservoir area. According to the amended plan of Hubei and Chongqing, 1,012 enterprises are to be bankrupted. The remaining 587 enterprises are about to be reorganised into 406 enterprises. In 2001 the relevant department issued a Circular of Issues on Bankruption of the State-owned Industrial Enterprises below the 135m Flooding Line in the Reservoir Area, initiating the implementation of the industrial restructuring policy (Fang and Chen 2002). Polluted water and solid wastes are the main pollutants discharged by the industrial enterprises. Due to seriously inadequate facilities and equipment for sewage disposal, about 500 million tonnes of sewage are discharged to the Yangtze and tributaries annually (Fang and Chen 2002). The existing three 'pollution belts' in the Yangtze adjacent to the built-up areas of Chongqing, Wanzhou and Fuling have become worse. Some new 'pollution belts' in rivers close to some county seats manifest. The large number of enterprises to be bankrupted will greatly reduce the pollutant sources. The remaining one third of enterprises cannot discharge liquid or solid wastes until they are satisfactorily treated and meet the standard for discharging. Water quality in the reservoir and in the middle and low reaches of the Yangtze is expected to maintain its current level or even be improved.

4.3 Law and Regulation System Associated with the TGP Resettlement

4.3.1 Law and Regulation System

Between 1978 and 1992 a series of laws and regulations were established, adopted, and revised as and when the need arises. These laws and regulations were written up in accordance with the nation-wide requirement or tailored to specific sectors such as water resource management, hydropower, transport, industry, and urban planning. These regulations, when taken together, not only protect the original living standards of those affected but also affirm the principal of 'developmental resettlement' (Cernea 1997). The system of law and regulations for reservoir displacement and resettlement includes three layers: (1) the fundamental law and regulations; (2) the sector regulations; and (3) the specific law and regulation for large hydro projects.

The Constitutional Law of People's Republic of China (1982) and the Land Administration Law are the fundamental laws to establish relevant resettlement regulations. The Constitutional Law clarifies the rights to land, rivers, forests, mountains, grassland, wasteland, shoals, and mines in the national territory. Article 10 in Chapter 1 stipulates that:

> Urban land belongs to the state. Land in rural areas and the peri-urban areas belong to collectives, except those parts belonging to the state. Housing land and self-retained farmland and mountains are owned by collectives and used by individuals. It especially stipulates that 'the state can recruit land for the requirement of national public benefits in compliance with the law.'

The State is the real and eventual landowner (Din and Cheng 1994). Both the national '*Land Law*' and '*Land Administration Law*' (LAL) stipulate that the country has the priority to recruit and use the land belonging to the collectives for the needs of development projects. This is the fundamental on which migrants could receive land in their resettlement areas. The LAL sets out the compensation standard for the requisition of agricultural land for non-agricultural purposes and the procedures of land requisition. The newly amended '*Land Administration Law*' (hereafter referred as *LAL 1998*) was issued by the NPCC on 1 January 1999. It places stricter requirements on land protection and requisition. Standards of compensation for land requisition are enhanced. However, the *1991 Regulation* established under the planned economic system has not yet been revised accordingly. The significant problem in the *1991 Regulation* is that the land requisition compensation, and population resettlement fund and some relevant clauses do not reflect the present situation, and therefore cannot adapt to the changing displacement and resettlement.

The most important sector regulations among those especially established for the hydro industry is the *1991 Regulation.* As there are big differences in compensation for the attached items to land such as houses and forest between different locations, it is difficult for the country to make standardised compensation guidelines. Hence the State Council authorised relevant provinces to ensure that local standards are in line with the national regulations in its implementation.

To date in China there has been only one specific regulation for large hydro projects: Changjiang Three Gorges Project Resettlement Regulations (SCC 1993, 2001). In addition, Chongqing: Measures of Implementing the TGP Resettlement Regulations, issued in the form of governmental announcement [No. 191] (*Chongqing Daily* 8 June 2002), is the unique local regulation pertaining to the TGP resettlement. It is characterised by detailed clauses, sound

understanding, and specific operations of the *2001 Regulations*. This local regulation includes 71 provisions and 7 chapters, including some important aspects regarding resettlement which are not in the national regulation. The additional sections relate to the rural migrants and are mainly concerned with the methods of production resettlement, compensation standards and measures, planning of distant resettlement and its implementation, and infrastructure construction in rural resettlement locations.

4.3.2 Features of the Revised Resettlement Regulations

The first phase (1993–97) and the second phase (1998–2003) of the TGP resettlement have been plagued with problems that the *1993 Regulations* could not address. The features of the revised *2001 Regulations* are summarised as below.

1. Rural migrants need not be resettled only in the traditional agricultural sectors. They are encouraged to be resettled in high yielding ecological agriculture, a capital-intensive production method with advanced technology that incorporates environmental protection measures. Ecological agriculture is seen as a way of relieving population pressure on the land in the reservoir area. The industrial and service sectors are also actively encouraged to absorb rural resettlers.

2. The policy of local resettlement is replaced by a combination of near and distant resettlement. The new regulations require that the beneficiary regions downstream from the dam be mainly responsible for receiving migrants.

3. With regards to the relocation and reconstruction of public property, infrastructure and industries, compensation was calculated on a basis of restoring original sizes, standards and functions of the assets lost. The new regulations emphasises that compensation should reflect the actual flooding loss, potential development, and the cost of upgrading and industrial structuring of the lost properties.

4. Environmental protection is highlighted in the new resettlement regulations. Disastrous floods that occurred in the Yangtze River in 1998 alarmed the Chinese leadership and signaled the extensive environmental degradation along the Yangtze River basin, especially in the upper reaches. Before 1998, few explicit policy outlines regarding

environment impacts had been produced to regulate projects and developmental activities, leading to severe soil erosion and engineering hazards in the reservoir area.

5. A new special section (Article 40) about how to use the resettlement funds is added in. It states that 'the administrative commission for urban resettlement is not a financial accounting department and the funding earmarked for resettlement cannot be transferred through it.' As the relocation record has shown, due to mismanagement, several temporary administrative units (e.g., the administrative commission for urban resettlement) were frequently accused of taking bribes and spending the resettlement funds on unrelated activities. The new rule attempts to remove such a department's power of controlling the financial resources and thus preventing the resettlement funds from being misused.

6. The penalties for dishonest use of resettlement funds are greatly increased. The resettlement funding is seen as 'an untouchable deadly high-tension line' (*gaoya xian*) (*China Daily* 15 March 2000).

7. The new regulations place an emphasis on the quality of resettlement projects and the establishment of a migrants' archive, which will provide recorded and consistent information about migrants' status.

These adjustments and changes show that the Chinese authorities have become more pragmatic and have learned lessons from past resettlement failures. If the new measures can be fully and effectively implemented, problems (Wei 1999) might be diminished, reduced, and even eliminated. Unfortunately, some problems still remain unsolvable under the new regulations.

Firstly, the identification of 'migrant' status, which has been a subtle, sensitive, and complicated issue that has caused much conflict and confusion among real migrants, local villagers and local officials, remains problematic. There are different reasons why 'pseudo-migrants' have emerged. In some cases, even residents living outside the reservoir area were illegitimately granted the status of migrants and entitled to share in resettlement funds. This type of 'pseudo-migrants' originated mostly in the early 1990s. Some local authorities and officials at county and lower levels exaggerated the numbers of migrants in order to get more compensation and funds from the country. 'Pseudo-migrants' obtained their status through

abnormal ways, including corruption. Equally serious, about 20% of the 15,899 rural migrants, who had intended to move out of their 'household registrations' to other provinces voluntarily, have not actually moved out, still staying in their origin counties in the Chongqing reservoir area. Their main purpose of this type of 'pseudo-migrants' is to receive the 'production resettlement fund' (on average 7,000 *yuan* per capita). This fund is used to compensate for lost land or other production materials of migrants. Thanks to availability of non-agricultural job opportunities produced by the TGP construction, compensation they received for house and other asset losses, and 'production resettlement fund', these 'pseudo-migrants' are able to setup small businesses, sell fruit/vegetables in the local market, or do casual work to earn a living in the reservoir area. Note that these 'pseudo-migrants' have lost land. What production they can engage in to make a sustainable living becomes a major concern. They may lose their living and production resources and become 'floating labourers'. The new regulations fail to address the serious issue relating to the 'pseudo-migrants'. A study (Wei 2001) predicts that this issue will become an explosive problem in the future.

Secondly, the *2001 Regulations* fail to address possible problems in distant resettlement. Moving people out of the reservoir area may be far from being a perfect solution (Wei 1999). Resettling rural migrants in remote provinces and regions of the country may bring about new problems. To speed up the pace and complete the task of resettlement, some local officials in the Three Gorges area try every possible means to force the migrants to leave their home counties and resettle in distant locations under the pretext of 'resettlement governed by the law (*yifa yimin*).' If this situation were to continue, a historic tragedy would be repeated, like the cases in Danjiangkou and Sanmenxia.

Thirdly, the new regulations assume that the reservoir area will be able to develop and upgrade its industrial sector. The local governments and relevant industries find it difficult to expand the scale or raise the standard in the reconstruction of new cities, infrastructure and factories. They must be responsible for raising additional money exceeding the quota of resettlement funds. Without financial support, technical assistance and other effective measures from the central government, it will be extremely difficult for the poverty-stricken region (particularly the Chongqing reservoir area) to develop, as over 80% of small and medium sized enterprises are located here.

Finally, The methods for resettlement funds' management remain unchanged, relying entirely on administrative measures rather than the improvement of the legal system, press scrutiny and public inspection. Due to limited participation of migrants and lack of transparency in resettlement policy decision-making and the use of relocation funds, more problems in the management of resettlement funds may be inevitable.

4.3.3 Issues on the Law and Regulation System

There are few participatory rights and limited options open to the migrants and their families, especially the rural migrants displaced or to be displaced by a 'distant resettlement' approach. Major legal issues or disputes arising from resettlement affairs need to quote provisions in other relevant laws (e.g., *LAL 1998* and the *2001 Regulations*). The absence of a law governing resettlement caused by reservoir and dam projects has impeded the effective operations of the TGP resettlement.

4.3.3.1 Problems in practice

Case 1: Pseudo-migrants in Yuechi County, Sichuan

In 2000 there were 40–50 people living in Shuidong village of Fengle town, Kaixian County, who protested in the Rural Resettlement Section of KRB for 11 days. The routine work of KRB had to be stopped. All the leaders responsible for rural resettlement and ordinary staff were confined to their offices, not being allowed to leave their offices at all. The objective of the migrants was to force the government to disburse the compensation and funds which migrants perceived belonging to them. These migrants intended to move out voluntarily but wanted to get all or part of the compensation and funds before moving. To get the compensation and funds, migrants were required to provide 'three certificates' to the local resettlement departments. The three certificates are: (1) the certificate of 'household registration transfer' from the sending county to the receiving location, which is issued by the Police Office in the receiving place; (2) the certificate of 'house property', which is ratified by the Housing Management Department in the receiving area to show that the migrant family had purchased or built houses in the destinations; and (3) the certificate of 'contract land', showing that the resettlement community has allocated or will allocate farmland to the

migrant household. Migrants were also required to demolish their houses and return their contracted land to the origin village. These migrants claimed they would not leave the resettlement bureau until they get compensation.

The county resettlement authorities identified that some of the 'certificates' were not genuine, with counterfeit seals. These migrants did not really intend to move out. They deceived the local government in order to get compensation and funds. The county government set up a special enquiry immediately. On 1 August 2000 the inquisitors visited the recipient county, Yuechi in Sichuan. They verified that 11 certificates of housing purchase agreement were forged. Further investigation found that it was operated by a few migrants in Kaixian and some staff working in the police office and housing management department in *Yuechi*. They established a so-called 'consultation and advisory institution' and charged service fees for such activity. According to Article 11 in the '*Emergent Notice for Further Working on Rural Displacement out of Chongqing Reservoir Section of the TGPCC'* (governmental document No.11 [2000] of the TGPCC), it is strictly forbidden for any institutions, organisations and individuals from providing any consultancy service under the banner of promoting distant resettlement of the TGP. The migrants sitting in silent protest in the resettlement bureau left when the truth was uncovered.

Case 2: Conflict between migrants and host people in Deyang, Sichuan

In July 2000, in a house-rebuilding site of a village in Xinghua town of Guanghan city of Sichuan, an experimental resettlement location, a 12-year boy of a host couple stole two small steel screws which connect two steel pipes. A migrant pushed him to the ground and injured his arm. An uncle of the child thought, these migrants had just moved in but had already caused injury to the hosts; what would happen if similar unfortunate accidents were to happen in the future. On the next day, the child's uncle retaliated and hit the migrant. Some days later, at a transport station the migrant rushed at the boy's uncle, cut his left hand and foot, resulting in serious injury. What the migrant thought was that 'We (migrants) have just arrived here but the host people are treating us badly. We cannot forgive them (the host people).' How did the government deal with this accident? The migrant was held in detention for 15 days and his family was resettled in another village in the same town, about 4 km away. The local government did not deal with the case in accordance with the law. They are concerned that the TGP should not attract negative publicity and consequently hushed up the

incident. In this case, the administrative measures of the government over-ride the legal procedures.

Case 3: House-rebuilding in Luxian County, Sichuan

The following case provides an example of the contradiction between administrative measures and the market-economic mechanism in displacement and resettlement. In 2001 in Luxian County of Luzhou city, Sichuan, some 300 people from 78 migrant households were settled in the urban area of the county, rather than the originally planned nine locations in rural residential sites (SPRO 2001). A series of problems arise from this change of resettlement locations.

Constructing houses in the 'urban district' is contradictory to the city planning rules of this county. House rebuilding in the 'planned area' of a city must be in compliance with the regulations for housing construction, e.g., at least a 6-storey apartment and 3-metres high for each level. Although the migrants claimed that they could not afford to construct a tall building, they nevertheless insisted on living in the same location. Some of them agreed to build 3-bedroom apartments, while some hoped to build 2-bedroom apartments. The county resettlement bureau eventually had to decide on building two 3-storey buildings, one with 3-bedroom and the other with 2-bedroom. The designing institute found it very difficult to design such type of houses as they violated the planning regulations and rules. Moreover, it was very expensive to purchase housing land-plots in the built-up area. The market price of land is 1.35 million *yuan*/ha. The county government ordered the Land Management Bureau to sell some 20 *mu* of land to the migrants, at a price of 0.75 million *yuan*/ha, which was the price at which the county purchased that plot of land a few years ago. Furthermore, an average cost of 450 y*uan/m*^{2} was required to build housing in this county. The migrants needed to adopt the form of 'collective construction' to reduce the expenditure. However, they can pay only 280 y*uan/m*^{2}. If the cost were higher than this figure, they would refuse to sign their 'agreements on house-building'. The county government had no financial ability to fill in the difference in cost and had to issue a governmental order. It required each host resident living in the originally planned four towns to contribute 1 *yuan* to make up the shortfall. Some 180,000 y*uan* was collected. The county government also turned to the SPRO and about 200,000 *yuan* was secured from various channels such as the 'TGP resettlement fund' and the 'aid for reservoir areas' allocated to Sichuan. However, the total fund and aid could not help to solve all the problems arising from the location change. In addition, the

county government had to order the Land Management Bureau, the Construction Commission, and the Committee of Urban Construction Administration to reduce or exempt some taxations and charges such as 'tax for management of city construction' and 'charge for use of infrastructure of city construction'. The housing-plot is located on a hill. To ensure that the house-plot has 'three accesses and one flatness' *(san tong yi ping)*, which refers to water access, electricity access, gas access, and a flat surface at the building site, the cost was greatly increased.

The TGP resettlement has been implemented principally on the top-down administrative order of the government, with no regards for the ways of the market mechanism. There are only instructions and orders from the top down, without feedback in the reverse direction. Consequently, enforcing the governmental roles increases the dependence of migrants on the government. This administrative mechanism could not always effectively monitor the normal process of resettlement.

4.3.3.2 Necessity of a reservoir resettlement law

The survey found that the majority of migrants believe that the law can protect their interests, but most of them do not see going to court as an effective way because of the cost in time and money. They feel it hard to win a lawsuit since 'human emotions override the law' (*renqing bi fa da*) in today's China to some extent. Consequently, few migrants have employed the law as an instrument to cope with legal issues in resettlement. Due to the lack of a reservoir resettlement law and normal mediating mechanisms, migrants have to appeal mainly to the county and higher authorities for help. Some displaced people returned to their origin county to seek solutions when they suffered unfair treatment in the resettlement community. They perceived the governments in the sending county as their 'mother's family', as a group of migrants told me when I interviewed them in Kaixian.

New issues arising from the distant resettlement require a more generalised legal framework. These problems include complicated relationships between the country and the project-affected regions, between the beneficial areas and the reservoir area, between migrants' sending and receiving areas, between government departments, and between migrants and the host people. Measures to ensure that the migrants move out are required. Operational rules for behaviour of the migrants and officials need to be both regulated in law. Issues relating to

the migrants' behaviour such as disruption to resettlement plans, deliberate delay, interrupting the normal resettlement procedures, and insulting, harassing even beating resettlement officials must be dealt with with law.

4.3.4 Resettlement Organisations

The governmental commitment to the TGP displacement and organisation of resettlement has played pivotal roles in the process of resettlement. After 50 years of population resettlement practice, the comparatively comprehensive organisation of reservoir resettlement management is a combination of management from central and local government, and is mainly under local management and responsibility.

4.3.4.1 Governmental organisations and institutions

China has set up a framework of resettlement organisations which dominate the resettlement work, while non-governmental institutions work mainly on the resettlement planning and feasibility analysis (Figure 4.2). The major institutions for the TGP resettlement are the governmental management sectors and operating agencies, which play the key roles in resettlement activities, and are responsible for policy formulating, planning approval and monitoring. The resettlement bureaus or offices explicitly set up to take charge of the TGP resettlement extend from the central government to provincial, prefectural, municipal, county, and township governments.

The government at each level has created a leadership group to coordinate the relevant departments of the government in the migrant sending and receiving areas. Taking the organisation setup in Sichuan province as an example (Figure 4.2), the SPRO is responsible for all resettlement management in receiving 9,000 rural migrants from the Three Gorges reservoir area. To enhance the ability and execution of resettlement operations, a special resettlement leadership is established. The standing vice governor of the province, Zhou Guangyan, is the director of this leadership group. The deputy director (the director of the SPRO) organises the day-to-day work. The authorities from 13 provincial government departments are the members of this group. They consult, coordinate and organise resettlement work among themselves. At the city or county level, the resettlement office is affiliated to different departments, such as the Agriculture Commission, the Planning Commission, the Civil Affair Bureau, or the office of a County government.

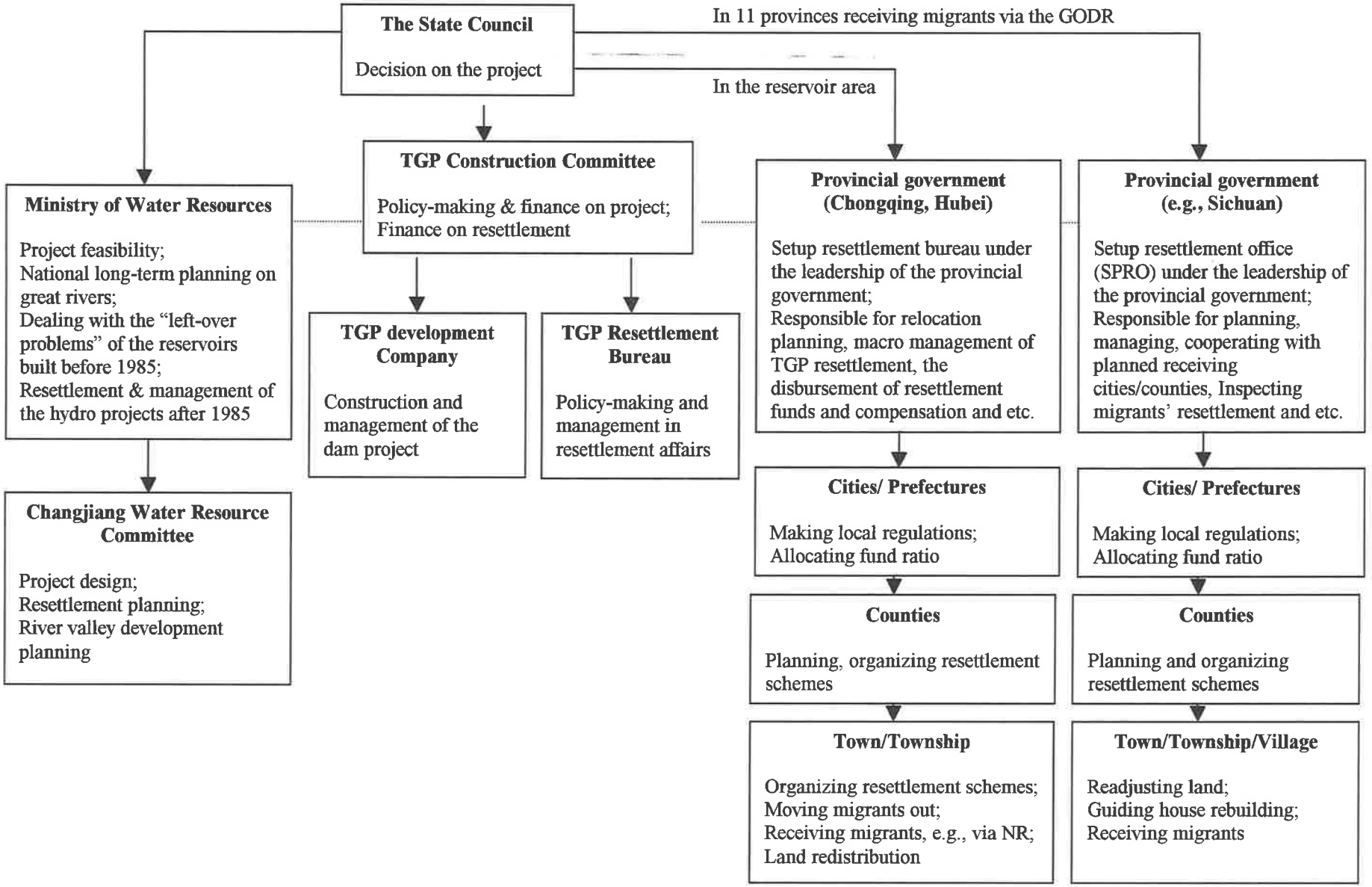


Figure 4.2 Governmental Institutions of Resettlement Management

The lower the level of the resettlement institution, the more subtle its work. The resettlement offices at the county and lower levels (townships and villages) draw up specific plans, approving compensation rates, and supervising house rebuilding and infrastructure construction. The grassroots organisation in the countryside consist of township government and villagers' committee (*cunmin weiyunhui*), which includes several villagers' groups according to housing distribution in the village. The villagers' committee is mainly responsible for farmland adjustment and housing-plot land allocation The township government coordinates the county government and resettlement institutions in organising the resettlement execution, giving the villagers' committee advice on determining resettlement plans, guiding utilisation of funds, and helping resettlers to restore livelihood. It also deals with appeals and settles disputes especially during land redistribution. Grassroots resettlement authorities have played important roles in many specific aspects relating to resettlement. Some studies have demonstrated that central policymakers are less able to affect local development programs because of the increased independence of village leaders (Kelliher 1997). This helps explain why the central government highlights the roles of local cadres at township and village levels in distant resettlement. Land is a determinant in rural resettlement. According to Article 4 of the Organic Law of Village Committees, it authorises the village authorities with legal empowerment over land rights. Basic responsibilities of the village leaders are to mange the land and other assets belonging to the collective, and to guide villagers how to use natural resources properly and how to protect and improve the natural environment (Kelliher 1997). Thy have important roles in land readjustment and allocation in their community.

The top government and resettlement organisations have set up quantitative targets to examine the use of funds, schedules, and completion of tasks assigned to the officials and staff in relation to resettlement. The ex-president Jiang Zemin's theory about the 'three emphases' (*san jiang*) and 'three representatives' (*sange daibiao*) is required to be applied to the TGP resettlement. The 'three emphases' refer to the emphases on theoretical study, political awareness and healthy ethics. The 'three representatives', remarked on by President Jiang in early 2000, refer to the representations of the following by the CPC: the development requirements of China's advanced productive forces, the progressive course of China's advanced culture, and the fundamental interests of the majority of the Chinese people.

4.3.4.2 Non-government organisations (NGOs)

It has been a consistent policy that throughout the process of resettlement, counsel and consultation should be carried out with people of all walks of life to obtain understanding and to bring out initiatives of the society. In the 1950s, design institutes only conducted survey and planned reservoir resettlement. Since the late 1980s, NGOs have been involved in the decision-making, planning, evaluation, designing, consultation, supervision, training, audition, and monitoring of resettlement. At present, over 1,000 experts work in design institutes and in ministries and more than 500 specialists in resettlement work in research institutes, universities and academic groups.

4.4 Participation of the Affected People

4.4.1 Fields of Participation

Active participation in resettlement schemes can help migrants involve themselves in reconstruction activities, establishing close ties among themselves and with the resettlement institutions. In the TGP resettlement, the preliminary rights and fields of participation open to rural migrants include: (1) policy acknowledgement, informing migrants of the law, regulations, rules, and policies on their resettlement; and (2) introduction of rural resettlement schemes, which involves cost-benefit analyses, gains and losses between the flooding area and the beneficiary areas, impacts of the project and displacement on social and economic, environmental aspects, physical displacement, production resettlement and so on. Through participation, developmental resettlement policy can better grasp the practical realities and promote democracy by more frequent and close communication between the government and people (Ingham 1995). However, resettlers have been given inadequate right of participation and options in the process of their displacement and resettlement.

In the process of distant resettlement, if, for instance, migrant representatives refused to sign contracts on rebuilding houses in the nominated receiving locations, the migrants were deemed to be 'obstructing government administrative work' (*fang'ai zhengfu zhixing gongwu*). If they did not voluntarily register to move out of the reservoir area, they would possibly be labeled as 'cunning and crafty people' (*diaomin*). Some of the so called *diaomin* are actually informal leaders among the migrants who undertook the tasks of mobilising other

migrants to protest, collaborating with activists from neighbouring villages and lodging complaints to the relevant governmental institutions. The radical followers among the migrants are the most courageous and ready to take extreme action when their requirements are met.

Persuading migrants to move out voluntarily through 'political education work' (*zhengzhi sixiang gongzuo*) is an important way. Yet there are different levels of awareness among migrants. It is a dilemma for officials working on resettlement. In some situations, they have to beg the migrants to move out, making 'empty' promises to the displaced. When I interviewed the deputy director of the Rural Resettlement Section of KRB in March 2001, he told me that '30–40% of resettlement officials (most of whom are male) broke down and cried as they found it extremely hard to complete the resettlement task assigned to them. As a result, they have to adopt extreme countermeasures (e.g., defraud, swindle, cozening, and thwarting when dealing with the migrants' affairs) to force migrants to move out'. The following case provides an example in point.

In late 2000, some migrant representatives from each migrant household in *Kaixian* County went to *Minshan* County, *Sichuan*, to negotiate conditions for resettling their families in the proposed recipient communities. The visit was organised by the county and town resettlement departments. These representatives did not wish to sign agreement on 'house-building' in the nominated resettlement locations as they were dissatisfied with the conditions provided. The officials had to adopt a strategy of 'combined hard and soft measures' (*ruan ying jianshi*). The 'soft' measure is 'education' or persuasion, through which some of the representatives signed their contracts on house building but some did not. Towards the more stubborn migrants, the officials 'turned on a face black' (*heilian*) and told them that they had no choice but to move to here. The migrants must accept the option of signing on agreement to move out either by distant resettlement or by near resettlement (to a mountainous region with worse conditions). If the migrants still refused to sign the contracts, they were warned that their status as migrants would be revoked.

Migrants consciously differentiated between the local government and resettlement bureau/offices from the central government. The differentiation was conveyed in the following words in the interview with some migrants in Fengle town, Kaixian, in April 2001.

> The policies of the TGP resettlement are good and in favour of us (migrants). But when they reach the provincial or municipal level, the policies begun to 'go out of shape' (*zou yang le*). The further down, the more distorted the policies become. By the time they reach the village, the policies have completely changed from what they were originally (*shenme dou bushi le*). The country planned to compensate each migrant 30,000 *yuan* via the 'distant resettlement' scheme, but we only get around 9,000–12,000 *yuan* in cash.

This was a reason why some migrants took the initial step of lodging their petition in Beijing or the provincial capital. They believed that 'the further up they went, the greater the likelihood that the solution would be in the favour of them'. To them, the provincial government, or even the State Council or the central government, is the 'ultimate saviour'.

4.4.2 Resettlers: Public Participation

There are few opportunities for migrants to participate in resettlement policy-making at provincial and higher levels, but they play an active role at lower levels, especially at village level. Due to social changes relating to the rural economic reforms and the decisive roles of readjusting collectively-owned land and allocating it to the villagers, villagers' committee has played a primary part in resettlement in the host communities.

4.4.2.1 Land requisition resettlement in Kaixian County

Building the new county city in the planned area needs to requisite land from the surrounding peri-urban rural villages. Consequently, 'land-requisited migrants' (*zhandi yimin*) are produced. They will be usually resettled in the new urban area, being provided with living houses, including some space for commercial use. Their agricultural household status can be transferred to urban residency status. Whether their houses' locations can generate prosperous income is a main concern of this group of resettlers.

When some 'land-requisited migrants' and officials in Kaixian were interviewed in April and May 2001, they expressed different feelings. An unfortunate event occurred on the new site of Kaixian County city in October 2000. Thousands of 'land-requisited migrants' assembled on a construction site and destroyed all the buildings that were being built around their housing plot. The migrants thought that the location of their housing plot, determined by relevant governmental departments, was not ideal because it has a deep base made up of earth such that it will cost much to consolidate it. The migrants' request to change the location was refused after several negotiations and petitions to the relevant government departments. The

affected people adopted a collective action, leading to more severely deviant actions: destroying buildings and infrastructure, facilities and equipment (excluding transportation service and water supply); fighting with the authorities of the county resettlement bureau, leaders of the county government and the county policy station. Around 400 armed soldiers from Wanzhou district were dispatched to disperse the migrants. As a result, all the construction projects (excluding transportation) on the new urban site were stalled for 10–12 months. The migrants failed to change their housing location.

This event was one of few typical cases of collective action of the affected people. In the process of the TGP displacement and resettlement, the State always tried to bring intense situations under control in order to maintain the stability in the reservoir area and ensure the dam construction proceed smoothly. Local governments hoped to protect their own interests and did not want to encourage migrants to become involved in resettlement affairs, attempting to minimise all the possible conflicts between them and the migrants, by keeping a distance between the two parties. Migrants thought that they might be able to receive what they want through taking deviant measures and putting constant pressure on the governments and resettlement authorities.

4.4.2.2 Migrants displaced and to be displaced via GODR

Table 4.2 shows how the two categories of migrants, who have been displaced in 2000 and who are to be moved out through the GODR scheme in 2001–02, deal with the problems if their reasonable requirements could not be met or if their benefits were destroyed during the process of resettlement. Most of the migrants usually just complain or put up with their problems. A large proportion of the migrants to be moved out hopes to have a say in their resettlement affairs relating to their interests. A majority of migrants who have been displaced tend to protect themselves from being ill-treated in the new environment by complaining about and putting up with the problems. Some migrants intend to resort to extreme measures to cope with their problems.

The participation of migrants in policy-making and resettlement planning has great significance in the success of the rural resettlement. While resettlers have gained some right of participation in the GODR, they had no say in high-level decision-making, especially on the questions of whether they would like to be displaced far away and where they would like

to go. Where, who, when, and why these migrants must be moved out are determined by the project and dictated by the top government.

Table 4. 2 Measures to deal with the problems if your reasonable requirements could not be met or if your benefits are destroyed during the process of resettlement

Choice	Count		Percentage of responses (%)	
	Migrants displaced in Deyang, Sichuan	Migrants to be moved out in the reservoir area	Migrants displaced in Deyang, Sichuan	Migrants to be moved out in the reservoir area
To complain	61	87	69.3	52.4
To put up with them	14	1	15.9	0.6
To adopt deviant actions	8	13	9.1	7.8
To report to local government	5	56	5.7	33.7
To sue	0	9	0	5.4
Total	**88**	**166**	**100.0**	**100.0**

Source: Author's survey of 'migrants through the GODR'.

At the provincial/municipal and county level, there is only a slight possibility for migrants to take part in the relevant meetings and discussions about their distant resettlement affairs. Occasionally, the national and provincial resettlement authorities organise 'on-the-spot meetings' (*xianchang bangonghui*) to detect, examine and solve problems, and draw lessons and experience from the practical resettlement operations. Few migrants are invited to participate in such official meetings to voice their requests and problems. The survey shows that many migrants knew little about the GODR scheme, especially information about the recipient locations where they would be moving to and the compensation standard and distribution structure. A result of the survey reveals that some migrants were dissatisfied with the performance of officials and staff responsible for the GODR resettlement, as shown in Table 4.3. Over two thirds of the category of migrants who have been resettled in Deyang are satisfied with the work of officials. The main reason is because the government has placed great emphasis on the 'resettlement trial' of the GODR to set an example for the massive resettlement in Sichuan province in 2001–02.

At village level migrants are encouraged to participate in resettlement affairs. In Yongxian village, Kaixian, all the villagers to be displaced were invited to participate in the propaganda organized by the Hanfeng Town Resettlement Office (see Figure 4.3). They were lectured on the significance of the TGP, the necessity and national policy of the distant resettlement,

compensation standard, the opportunities of improving livelihood for migrant families and their posterity. Brochures including frequently asked questions of migrants and the answers were delivered to the migrants. The migrants were allowed to raise questions relating to their displacement. Unfortunately, this kind of mobilisation is not always provided by resettlement institutions in other townships in Kaixian County.

Table 4. 3 Are you satisfied with the work of officials responsible for GODR in the sending and receiving areas?

Choice	Respondents		Percentage of respondents (%)	
	Migrants displaced in Deyang, Sichuan	Migrants to be moved out in the reservoir area	Migrants displaced in Deyang, Sichuan	Migrants to be moved out in the reservoir area
Yes	51	39	70.8	37.5
No	4	12	5.6	11.5
Difficult to say	17	53	23.6	51.0
Total	**72**	**104**	**100.0**	**100.0**

Source: Author's survey of 'migrants through GODR'.

Photo: Yan Tan (12 March 2001)

Figure 4. 3 Training on Resettlement Policy in Yongxian Village, Kaixian.

Shows that migrants actively participated in the training organised by the Hanfeng Town Resettlement Office.

Government-organised 'visit' is an innovative means to expand the participation field of resettlers. The first procedure of the GODR in the sending county is to define and mobilise the eligible migrant families which must be moved out. The second step is to organise representatives to visit the receiving locations in distant provinces. One representative (predominantly male) from each migrant family makes up the visiting group. The migrant representatives travel to the receiving areas to investigate the resettlement conditions. They are required to sign contracts on their families' moving out and will provide information about the resettlement locations to the others to encourage the other families to move out. Given the pressing schedule of displacement, they are requested to sign contracts on 'house-building' in the recipient communities during the visit. Most migrants feel that the visit period (usually only 1 day) is too short and therefore impossible for them to gather detailed information about the host communities. A migrant in Qukou town, Kaixian stated that:

> It is impossible for us to obtain more useful information. We are not permitted to contact or talk to the host people. We want to know how far the market is and what production we can develop after we move there but there is no time and no opportunity. We are required to sign agreements on our families' resettlement before we go back home.

The resettlement locations, or the house-rebuilding land plots, were selected by the receiving communities, based on bilateral negotiations between the sending and receiving counties, according to a 'top-down' operation procedure before migrant representatives come to visit the locations. The migrants are not permitted to change the resettlement locations, in order to stop them from comparing the resettlement conditions with each other and thus create more problems.

Table 4.4 shows that a majority of the migrant families displaced in Deyang through the GODR have basic information on the conditions of living, production measures and infrastructure before their removal. The main channels for these migrants to receive information are 'government-organised visits' and 'official propaganda' provided by local governments in the sending counties (Table 4.5). The role of mass media is limited as the government has emphasised that resettlement affairs relating to the TGP resettlement must be favourably and cautiously reported. Among the responses from the 105 migrants who would be moved out in 2001– 02 interviewed, only 45.7% of interviewees stated that they knew when their families would be displaced, and only 58.7% of the migrants knew where they would move to. At the township and lower level, usually at least one female cadre in the leadership group responsible for resettlement affairs is nominated. A main reason is that

female cadres are regarded as suitable for doing such which require much patience and consideration. The migrants have learnt to utilise some strategies to protect their own interests, including expressing their grievances, complaining about problems and requesting more assistance from the government in both the origin and destination areas.

Table 4. 4 Have you got any information on living, production and infrastructure in the receiving area before moving?

Choice	Respondents	Percentage of respondents (%)
Yes	44	61.1
No	16	22.2
Some but not complete	12	16.7
Total	**72**	**100.0**

Source: Author's survey of "migrants displaced in Deyang through the GODR".

Table 4. 5 What is your main resource of the information?

Choice	Respondents	Percentage of respondents (%)
Government-organised visit	46	63.9
Official propaganda	14	19.4
Relatives/friends	8	11.1
Newspaper, broadcast, TV	2	2.8
Been here once	1	1.4
Other	1	1.4
Total	**72**	**100.0**

Source: Author's survey of "migrants displaced in Deyang through the GODR".

4.4.3 Host People: Attitudes Towards Migrants

The relationship between migrants and hosts has been a troublesome issue in most resettlement practice. The fundamental reason lies in the conflict of interests between the bilateral parts as resettlement may alter the distribution and ownership of resources, particularly farmland, leading to competition for resources as well as non-agricultural employment opportunities. For the migrants displaced by the GODR, whether they could share a part of the 'production resettlement fund' with the host people in the resettlement communities is a factor causing conflicts between them. If there exists big differences in cultural background and life style between them, the degree of conflict may be increased. The host residents often suffer from a reduction in natural and economic resources and shrinking survival space. In the mean time, migrants feel dissatisfied with their new resettlement site since they think the quality and quantity of land allocated to them are not comparable with

those before their displacement. Psychologically, the migrants may erect a 'wall' between themselves and the host people. The relationship between the two groups of people may become a serious obstacle to social integration in forced resettlement.

4.4.3.1 Responsibility vs. willingness

Most of the host people would like to accept migrants to live in their villages. As Table 4.6 shows, some ninety-eight per cent of respondents welcomed the migrants moving into their communities. Deyang is comparatively one of the most developed regions in economy in Sichuan. It is situated in the Chengdu plain and has convenient irrigation, fertile soil, good transportation network and sound folk style. The local people have believed that the TGP will bring benefits to the nation and that supporting to the TGP resettlement is the right thing to do. The 'resettlement trial' in Deyang has not resulted in adverse impacts on the host people so far, but this fact does not imply there will be no adverse impacts in the long run, as the migrants have moved into the resettlement locations in Deyang for less than one year when the fieldwork was conducted.

Table 4. 6 Do you like the TGP migrants being settled in your community?

Response	Frequency	Percentage of responses (%)
Yes, very much	33	55.9
Yes	25	42.4
No	1	1.7
Total	**59**	**100.0**

Source: Author's survey of 'host people', 2000– 01.

An overwhelming majority of the host people (88.2%) would like to allocate production conditions to migrants to help them re-establish livelihood and production (Table 4.7). In Mandarin, 'should' (*yinggai*) implies an obligation rather than a propensity to do something. Given the willingness of host people, the responses of 'like very much' and 'like' also include a component of 'should'.

Table 4. 7 Would you like to share resources (land, water, power supply, and other infrastructure) with the migrants ?

Response	Frequency	Percentage of responses (%)
Like very much	27	45.8
Like	25	42.4
Dislike	7	11.9
Total	**59**	**100.0**

Source: Author's survey of 'host people', 2000– 01.

4.4.3.2 Worries and aspirations

What are host people worried about after the migrants were resettled in their villages? As Table 4.8 illustrates, although over half of the respondents have 'no worries', more attention needs to be paid to those responses which indicated disquiet. 'Readjustment of land' was seen as one of the main problems, followed by 'difficulty in getting along with migrants'. The two concerns are associated with an interest relationship: an economic and a social issue respectively.

Table 4. 8 What do you worry most about when migrants move into your community?

Response	Frequency	Percentage of responses (%)
Readjustment of land	12	20.3
Difficulty in getting along with migrants	7	11.9
Deterioration of social security	5	8.5
Reduced employment opportunities	4	6.8
No worry	31	52.5
Total	**59**	**100.0**

Source: Author's survey of 'host people', 2000– 01.

In rural China, the role of farmland is changing. The dominant income source of most farmers has not been from agriculture but non-agricultural activities since the 1990s, especially for peasants in comparatively developed regions such as those in the eastern coast and in peri-urban settings. However, land still plays a fundamental role as a living maintenance and security for most rural households. The host people find it difficult for them to give up their rights for land, particularly if they are requested to offer a large plot of land or if their land is high yielding. A 'minor readjustment' to land (between 0.01–0.02 ha) was adopted to secure farmland from each affected host family.

Neighbourhood relationships are closely related to the social integration of migrants in the new environment. On the one hand, the differences between the sending area and the resettlement regions will affect the migrants' ability to adapt physically and psychologically. Some of them see themselves as 'special citizens', and have the prerogative to depend on the government and host communities. On the other hand, some of local host people consider themselves to have a higher social status than the migrants. The relations between the two groups of people may be difficult to reconcile.

Engaging in non-agricultural activity in the local sphere has been a main income source of these hosts. The migrants' moving in may result in a potential threat to the employment or the labour market for the host people. The hosts tended to adopt a considerate attitude towards the migrants. As Table 4.9 shows, 78 per cent of the host respondents would 'complain' but go no further, as a demonstration of their understanding and sympathy for the migrants' difficulties in their new environment. They are almost unlikely to settle conflicts through extreme or illegal means.

Table 4. 9 How would you solve any conflicts which might arise between you and the migrants?

Response	Frequency	Percentage of responses (%)
Complain	46	78.0
Endure	6	10.2
Report to the government	1	1.7
Sue	1	1.7
Extreme or illegal way	1	1.7
No response	4	6.8
Total	**59**	**100.0**

Source: Author's survey of 'host people', 2000– 01.

Regarding the host residents as the affected people by the reservoir project, and compensating them appropriately have become an important part of the policy for involuntary resettlement launched by the World Bank (1994). In the GODR approach, the Chinese government has made explicit policy on appropriate compensation and funds which are allocated to the host people for land and infrastructure provisions. Most people in the receiving villages of *Deyang* are satisfied with the new policy changes accruing to them. Migrants have brought both cash capital and labour capital into the resettlement communities, providing a possibility for local economic development and infrastructure innovations.

How to balance the beneficiary relationship between the migrants and the hosts is important as it relates to issues of justice and equality between them. The majority of respondents (73%) viewed the governmental resettlement policy and its implementation as just, while a few host people (5.1%) thought that they were treated unfairly. The responses to the question about the hosts' general impression of the migrants in their villages reveal that many local people view migrants as 'very good' (62.7%) and 'good' (33.9%). Nearly half of the host respondents answered that they were not envious that the migrants could have some preferential policies in distant resettlement as resettlers have abandoned their hometowns and suffered heavy losses for the TGP (Table 4.10).

Table 4. 10 Do you envy the migrants for having some preferential policies in the distant resettlement?

Response	Frequency	Percentage of responses (%)
Yes	23	39.0
No	29	49.2
Difficult to say (do not know)	7	11.9
Total	**59**	**100.0**

Source: Author's survey of 'host people', 2000– 01.

Table 4.11 tells us that, putting themselves in the shoes of the migrants, the host people prefer the 'voluntarily self distant resettlement' and 'near resettlement' schemes to 'moving to the current host location' (in Deyang). Their preferences to the resettlement schemes have complicated implications. Firstly, more resettlement options need to be made available to the migrants. Secondly, the GODR scheme is a good but not perfect. Thirdly, people, especially migrants, should be able to select their resettlement locations and manage the resettlement funds for livelihood and production rehabilitation by themselves. Fourthly, 'near resettlement' is a favourable scheme because it does not result in heavy social risk and losses, compared to distant resettlement. Finally, the host people regarded their communities as hospitable places to resettle in, compared to moving to other provinces or non-flooded counties in the Chongqing reservoir area.

Table 4. 11 If you were a migrant, which resettlement scheme would you prefer?

Response	Frequency	Percentage of responses (%)
Voluntarily self distant resettlement	17	28.8
Near resettlement uphill	15	25.4
To move to the current host location	12	20.3
Living with relatives or friends	8	13.6
To settle in other province	1	1.7
To settle in non-flooding area in Chongqing	1	1.7
Do not know	5	8.5
Total	**59**	**100.0**

Source: Author's survey of 'host people', 2000– 01.

4.5 Conclusion

The Chinese government has started to deal with the problems of a number of 'reservoir resettlers' and has proposed a 'developmental resettlement' policy since the mid-1980s. The essence of this policy is to provide basic living and production conditions to the relocatees to assist them in restoring livelihood and rehabilitating production, creating a sustainable life

after resettlement. The actual situations of livelihoods and production of most 'reservoir resettlers' have been improved to some extent, but many problems remain to be solved.

The 'developmental resettlement' policy associated with the TGP resettlement has a wide context and many implications for the affected people and affected regions. It highlights the relationship between the resettlement and the sustainability of development of both livelihoods of the resettlers and the reservoir area. The 'two adjustments' to the TGP resettlement policy since 1999 have marked a turning point in the process of the TGP resettlement, both in theory and in practice.

The management system of the TGP resettlement is under the leadership of the central government, and a responsibility of the affected provinces, on a basis of the affected counties. A complete institutional system relating to the TGP resettlement from top (the TGP Construction Commission) down (at township level) has been well established. The government has committed to move out all the persons to be displaced. The governmental resettlement institutions at different levels have clear responsibilities and tasks in the resettlement. The grassroots resettlement authorities and institutions are very important and shoulder resettlement burden, in the planning, mobilising, organising, mediating, displacing and resettling of the migrants.

The core of the legal system associated with the TGP resettlement is the resettlement *Regulations*. Although the new *Regulations* have some inherently inadequate aspects which need to be addressed, they have many worthwhile features, charaterised by highlights of the industrial restructuring, combination of local and distant resettlement, environmental protection and rational use of the resettlement funds. Some new issues relating to distant resettlement, such as 'pseudo-migrants', house-building and resettlement location selections, and sometimes serious conflicts between migrants, host people and governments cannot be solved, due partly to the lack of a more powerful law (such as Reservoir Resettlement Law) to regulate the behaviours of each party.

The fields of participation of migrants lie mainly in the propaganda of the resettlement policy and different resettlement schemes. Migrant participation in the policy decision-making and various resettlement plans at high level (national and provincial) is weak, but they are greatly encouraged to participate in local resettlement affairs at the township and village level. It is a creative touch on the part of the resettlement institutions with regards to the migrants'

participation, to arrange for migrant representatives to visit the resettlement locations in distant communities, but it is not likely for them to gather sufficient information about the conditions in those locations due to limited time and the restrictions placed on their visit.

The host people expressed their understanding and support for the GODR scheme. They think they have the responsibility to provide land and basic production conditions for the migrants. Some of them are also anxious about the potential competition in resources (e.g., land) and employment opportunities and unfriendly relationships between the two groups of people. The innovation and implementation of the new distant resettlement policy are beneficial to the host communities and hosts. The new resettlement policy has played a constructive role in reducing the context and degree of conflict between migrants and the host dwellers.

Chapter Five

FRAMEWORK FOR IMPACT ASSESSMENTS OF RESETTLEMENT OF THE THREE GORGES PROJECT

This chapter develops a conceptual framework relating to the economic, environmental and social impacts of large hydro projects. While some critical issues of the economic, environmental and social impacts of the TGP resettlement are important, social impact assessment (SIA) is especially highlighted. The process of 'government-organised distant resettlement' (GODR) is employed as the main context under which the framework of SIA will be built. Equity, sustainability and livelihoods closely relate to benefit sharing, participation, production rehabilitation, social integration and social differentiation (e.g., gender). Therefore, these aspects should be the main components in SIA.

5.1 Economic Impact Assessment (EIA)

5.1.1 National Dimension

The economic assessment of the impacts of the TGP and the ensuing resettlement on the economy can be done on different spatial and temporal scales: national, regional, local and individual migrant households in the short or long-term, using economic indices. According to Fu (1998), two indices can be applied to measure the benefits of flood prevention, the biggest benefit of the TGP. One is the ratio (A/A') of the land area protected downstream of the Yangtze (A) to the land area to be flooded in the reservoir area (A'). The other one is the ratio of P/P', where the population benefiting from the project in the downstream (P) is divided by the number of people to be displaced in the reservoir area (P'). The bigger the two indices, the greater the economic benefits. The indices of the A/A' and P/P' are 15 and 64 respectively, illustrating that the TGP resettlement could bring vast economic benefits to a large area and a substantial population at a comparatively smaller cost to the environment in the reservoir and human relocation. After the completion of the TGP in 2009, the major flood control capacity in Jingjiang diversion section of the Yangtze in Hubei province will change from a present 10-year frequency to a 100-year frequency. The TGP will improve the

environment for living and promote further development in the densely populated and economically developed downstream areas. Many cities and towns, with a total of 15 million population and about 1.53 million ha of fertilised farmland, are located there. Meanwhile, there will be other benefits from the regulation of the reservoir, such as extension of the life span of Lake Dongting due to less deposition of sediments, and provision of a water source for the future South-to-North Trans-River Basin Water Project (CWRC 1997).

Another two indices are used in evaluating the economic benefits of the TGP with regard to its generation of electricity (Fu 1998). One is N/A, the proportion of the electricity generation capacity of the project (N, or 18,200 MW) to the area of farmland to be inundated (A, or 28,400 ha). The N/A of the TGP is 0.64. The other one is the ratio of N/P, referring to the electricity generation capacity (N) and the population to be displaced (P). This figure is 0.0182. These two indices are lower than in most other hydro projects in both China and the world (Li 2000). The indices indicate that the benefit from power capacity to be generated overweighs the cost of land loss and human relocation. In addition, the navigation capability could be enhanced from 1,000 tonnes to 5,000 tonnes, and 10,000 tonnes of shipping could reach Chongqing every six months. Positive and negative impacts co-exist in the project and its associated resettlement. In monetary terms, the ecological and environmental tolls brought about by the TGP were estimated to be as much as 10.2 billion *yuan*, or approximately US$ 1.25 billion (Fu and Wang 1987).

5.1.2 Indicators of EIA

In 1996, Muller (see Ferradas 2000, p. 11) proposed a set of indicators to assess the economic impacts of a dam project. Based on Muller's indicators and those of OED (1998b, p. 62), the main concerns of the EIA relating to the TGP resettlement, particularly the GODR, should comprise the following aspects at household and community level, as shown in Table 5.1.

Table 5. 1 EIA of TGP resettlement on migrant households and communities

Categories	Indicators
Income restoration	• Socio-economic status (living conditions, family assets of production and life, income and expenditures); • Production condition (production restoration, intensity of labour, skills of labourers, etc.); • Occupational pattern (diversity, technical complexity, labour force, unemployment and employment rates, etc.); • Agrarian patterns (land holdings, land productivity, product market, etc.); • Livelihoods (income resources, income proportion derived from various industrial activities, net income, debts, salary levels, etc.);
Social services and changes	• Access to water, roads, electricity, etc. • Public health (availability of medical facilities, state of infectious diseases, immunity plan and health care for children and women); • Education condition (access to schools, rate of entry, qualification of teachers etc.); • Status of women (employment opportunities, social status, participation in public affairs, voting in local affairs); • Social insurance system (living condition of the senior citizens and handicapped, medical insurance and pension insurance); • Integration of migrants.
Demographic impacts	• Age, education, gender, etc.;
Regional development	• Rate of GDP increase, per capita GDP, etc.
Satisfaction of migrants	• Satisfaction with work of the government and officials, and with their new situation.

Source: Adapted from OED (1998b, p. 62); Ferradas (2000, p. 11).

5.2 Environmental Impact Assessments (EIAs)

5.2.1 Institutions of Environmental Protection

The environmental impact assessments (EIAs) of the TGP considers the entire Yangtze river basin as an integral system and divides it into several sub-systems: the reservoir area, middle and lower reaches, and river estuary region. The main findings of the EIAs conclude that the TGP will exert both positive and negative impacts, mostly on the environment and ecological systems. While positive impacts will occur mainly in the middle and lower reaches of the Yangtze, the negative impacts will be concentrated in the reservoir area (Du *et al.* 1994; Chen *et al.* 1995).

In 1994, the Chinese government issued the '*21st Agenda of China: Population, Environment, and Development White Book*'. This agenda is a guideline in formulating the intermediate and long-term social and economic development of the country. To ensure appropriate growth and sustainable development of the national economy, the following strategic measures are to

be taken: (1) control of population growth; (2) energy savings and an increase in the efficiency of energy utilisation; and (3) development and utilisation of energy resources that cause no or little pollution.

In December 1993 the Environmental and Cultural Relics Protection Committee under the TGP Construction Commission (TGPCC) was established, in charge of environment issues arising from the project. Meanwhile, the Environmental Protection Division was established for the purpose of environmental management of the dam construction site. 'The ecosystem and environment supervision and monitoring plan of TGP' and 'the environmental protection action plan in the TGP construction site' were formulated in 1994 and have been carried out since then. The TGPCC established an Eco-environmental Coordination Group in July 1995. They consist of the relevant agencies and agents: the State Environmental Protection Administration (SEPA), CAS, the Three Gorges Company, the Resettlement Development Bureau under TGPCC, the Water Resources Ministry, the Agricultural Bureau, the Forestry Department, the Health Department, the National Meteorological Bureau, and the leaders of the provincial governments in Sichuan (now Chongqing) and Hubei. This group is responsible for leading, inspecting and coordinating the eco-environmental prevention work in the dam site, reservoir area, and mid and downstream regions of the Yangtze. A '*Bulletin on Ecological and Environmental Monitoring Results of the TGP*' has been announced every year by the SEPA since 1997 (Wang 2000). The main principles and evaluation criteria of China's environmental management, for instance, the 'three spontaneities (*san tongshi*)', referring to spontaneous activities in production, planning and control of pollutants: 'whoever develops, protects; whoever destroys, restores; and whoever uses, reimburses', are applied to urban relocation. Compensation for environmental protection in the reservoir area has been looked into (Huan 1996). Environmental protection relating to relocation in the reservoir area is being undertaken by the governments of Chongqing municipality and Hubei province. In the resettlement compensation package 82.26 million *yuan* is allocated as an environmental protection fund – 4.96 million *yuan* for Hubei and 67.3 million *yuan* for Chongqing (Fang and Chen 2002). To curb water pollution in the reservoir and in the upper reaches of the Yangtze, the SEPA has planned to invest about 40 billion *yuan* in the coming decade (www.mwr.gov.cn/20021107). In July 2001 the State Council convened a '*Working Conference on TGP Resettlement and Partnership Assistance*' and made an important decision: to prevent and manage geological disasters, potential landslides and bank collapses possibly induced by the reservoir during and after the filling process. The State Land and Resources Ministry is the authority in charge of a leadership group, especially set up for the

prevention and control of geological disasters in the reservoir region. The planning has been carried out since February 2002, when the State Council ratified the overall planning of geological disaster prevention and control in the Three Gorges region. In November 2001 the State Council approved the '*Plan for Prevention and Control of Water Pollution in the Three Gorges Reservoir Area and the Upper Reaches of the Yangtze*', as proposed by the SEPA. Come 2003, cities and towns will be strictly prohibited from discharging sewage that does not meet the required standard when the reservoir starts to be filled with water. Sewage and waste disposal facilities and equipment in all the 20 cities/counties to be flooded will be improved.

In the '*Constitutional Law of the People's Republic of China*' (PRC), Article 26 states that 'the state protects and improves the human and ecological environment, prevents and controls pollution and other public hazards'. In the '*Environmental Protection Law*' of the PRC, issued on 26 December 1989, Article 19 specifies that 'measures must be taken to protect the ecological environment while natural resources are being tapped'. Since 1989, China has implemented an '*Ecological Prevention Plan in the Upper Reaches of the Yangtze*' (Wang 2000). The '*National Eco-environmental Construction Planning*' has been implemented since 1999. The Three Gorges reservoir area is one of a number of ecologically fragile regions where the ecology and environment must be protected and rehabilitated. The environmental impacts of displacement and resettlement have drawn much attention since flooding disasters began occurring on the Yangtze in 1998.

5.2.2 Environmental Consequences of Resettlement

The main and direct ecological and environmental issues of the TGP are identified as the following six aspects: (1) environmental protection in the construction site of the dam; (2) environmental impacts of inundation; (3) impacts on public health; (4) impacts on cultural relics and natural landscape; (5) impacts on water quality and temperature; and (6) impacts on aquatic life forms, the Yangtze estuary and coastal marine areas (Fang and Chen 2002). Human resettlement is a direct consequence of the inundation of land and assets. The eco-environmental problems resulting from the process of relocation are secondary consequences of the TGP. Assessment of the population carrying capacity of land and socio-economic induced impacts on any resettlement community should be carried out for each relocation position (Inter-American Development Bank 1998).

Considerable research into the environmental impacts of the project itself has been conducted by Chen *et al.* (1995). However, environmental problems and protection in resettlement was not addressed until 1999, when the Resettlement Development Bureau of the TGPCC issued the '*Measures for Administrations of Resettlement Construction Projects with TGP*'. Thus no adequate assessment had been made to measure the potential impacts of the displacement activities on the reservoir environment (Li 2000, p. 291–292). The potential environmental effects of resettlement can be summarised as the following:

1. Land inundation and resettlement to nearby locations significantly increase the pressure on population carrying capacity of the reservoir area.
2. Land reclamation on hillsides to accommodate resettlement to nearby locations destroys the vegetation, exacerbating soil erosion.
3. The development of small and medium sized enterprises in urban areas as well as township-owned enterprises in rural areas can result in serious pollution, especially water pollution.
4. Urban relocation and engineering construction in the dam site may improve the environment and benefit the economic development after the completion of urban construction and the dam in the long run. However, it can aggravate water and soil erosion, pollution and vegetation destruction at the dam site and the resettlement locations because of the extensive excavations. Much agricultural land has been forced out of production.
5. People displacement affects the demographic patterns, societal structures, cultural traditions, and relationships of people.

In addition, incidences of local epidemic diseases may increase due to the changes in the human environment brought about by the near resettlement and increase of the interaction of people in the reservoir area (Jiang 1999). The impact on people's health may become a serious problem in some areas, for example, in Kaixian where the county seat will be surrounded by relatively stagnant water when the reservoir is filled in 2009. The sludge collected at the bottom of the reservoir during the months (October to April) of higher water level will be exposed to the hot and humid weather during the months (May to September) of low water level, and most likely lead to the increase of water-borne diseases. Currently there is yet to be an effective system in place to prevent and manage the diseases, which are closely related to the seasonal flooding and ebbing of the reservoir.

Exacerbation of water and soil erosion is defined by Du and Yan (1999, p. 299–303) as the most serious problem of the TGP. Incomplete statistics on 127 projects in the reservoir area in 1996 demonstrated that the induced water and soil erosion have affected an area of 35.1 km^2, destroying vegetation and land coverage of 36.9 km^2, and discharging solid waste of 100 million m^3, most of which was poured directly into the rivers. A wide range of studies on the sedimentation of the reservoir, landscape and cultural heritage, rare species of plants and animals, and water quality have been conducted (Du *et al.* 1994; Chen *et al.* 1995; Wang 2000).

Human influence is a major factor resulting in serious soil erosion in the reservoir area. The number of population in 1988 was more than twice that in 1949. The population density reached 278 persons/ km^2 in 1990. Increasing demands for grain crops, firewood and timber for people usually results in deforestation. In the early 1950s, forest coverage in the reservoir area was around 30–50%, but recently it has decreased to around 10%, or even 5–7% along the banks of the Yangtze. The ratio of cultivated land area to the total land area of a region has reached 34%, higher than the national average of 10%. The portion of farmland on slopes makes up 75% of all farmland and of these, a quarter is located above 25 degrees of slope gradient (Du and Yan 1999). Water and soil erosion reduce the depth, fertility and water holding capacity of the soil. It leads to a higher frequency of floods and droughts, induces landslides, mud and stone flows and the other mountain disasters. It also reduces the life expectancy of the reservoir and causes water contamination (Du and Yan 1999).

5.2.3 EIAs of Rural Resettlement

As Figure 5.1 shows, the two biggest and irreversible environmental effects of the TGP are: considerable inundation of farmland and displacement of some 1.3 million people. To resettle the rural migrants, some adverse effects of land reclamation on steep slopes have occurred in the reservoir area. Degradation of vegetation, water and soil erosion further deteriorate the ecology and environment. In rural resettlement, the human carrying capacity of the land is a decisive factor. In Chapter 6, methods for analysing the carrying capacity of land in a resettlement community will be provided. Along some suitable banks of tributaries of the Yangtze, engineering works for the protection of people and/or land will be actively carried out to minimise the number of people to be displaced and land to be submerged. The

protective engineering works, mainly those carried out in Kaixian County, will be discussed in Chapter 7.

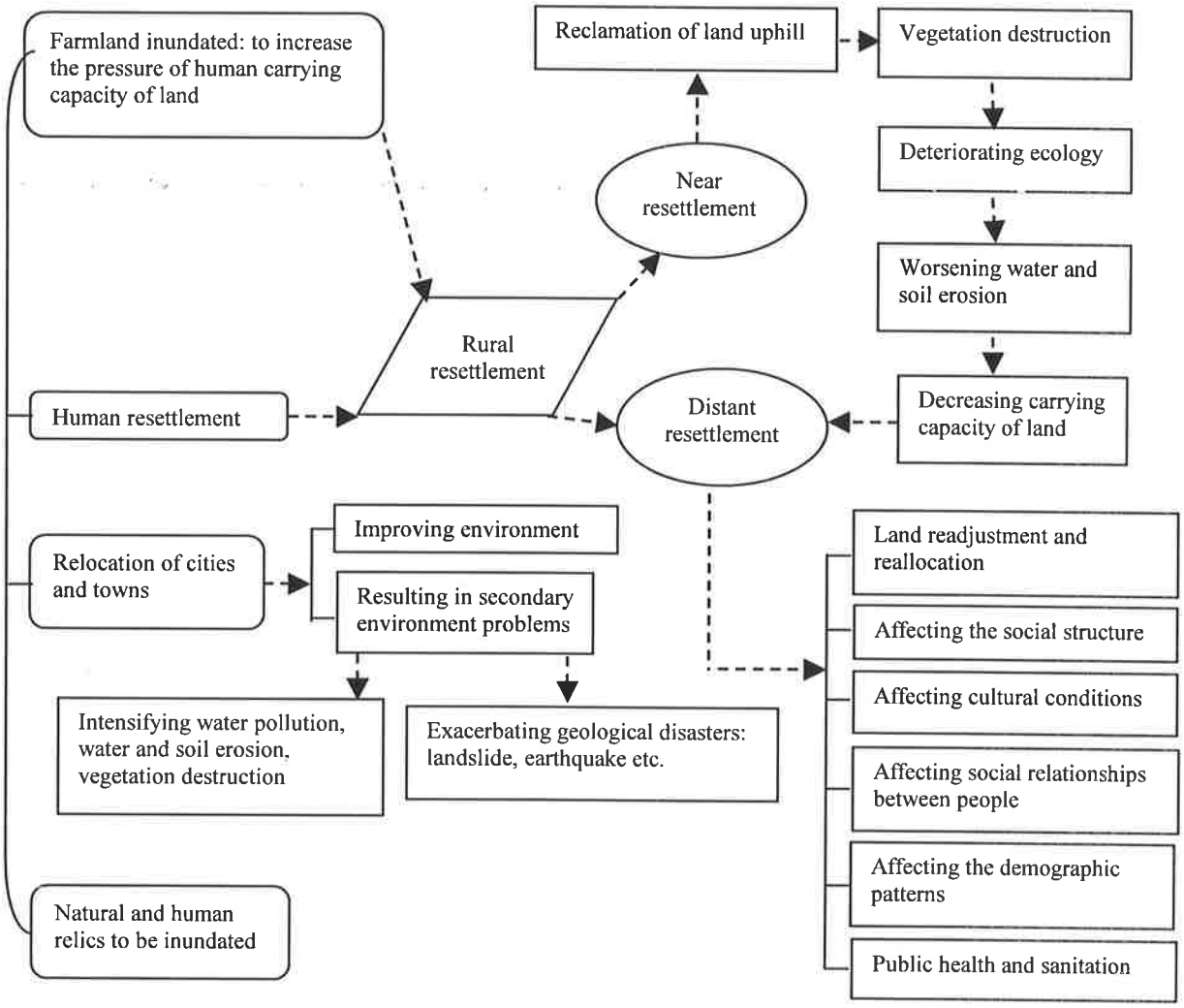


Figure 5. 1 Environmental impact assessment of the TGP rural resettlement.

Source: Adapted from Jiang (1999).

The inadequate population carrying capability of land in the reservoir area can seriously affect the near resettlement. In consideration for the long-term environmental sustainability in the reservoir area and sustainable livelihoods and further development of migrant families, some people must be moved out of the reservoir area. The extent and degree of environmental impacts on the resettlement communities and regions will depend on a set of variables. The main variables include:

- the general levels of economic development;
- land availability;
- geographical location; and

- spatial patterns of resettlement in the recipient locations.

Due to the complexity and significant differences of these variables in different resettlement locations in both the reservoir and distant provinces, the consequences of environmental impacts may vary greatly. This study argues that: (1) 'near resettlement' mainly results in problems to the physical environment; and (2) the effects of 'distant resettlement' lie mainly in the human environment, including demographic, social and cultural aspects. The most conspicuous impact on migrants and host people is readjustment and redistribution of land among host villagers and migrants in a resettlement community. The environmental impacts of the distant resettlement will perhaps need a longer time to manifest themselves. Attention to the impacts on the migrants' health and on the resettlement communities is required.

5.3 Social Impact Assessment (SIA)

5.3.1 Ignorance of SIA

In China, socio-economic impact analysis for any economic activities including dam projects was excluded prior to 1981 (Li 1997). In the past, an economic benefit assessment for a new engineering project was necessary. However, environmental and social evaluations were not required by relevant administrative departments. An essential reason for this was because China was unaware of environmental and social security problems prior to the early 1980s. 'Environmental awareness' was a completely unfamiliar term for policy-makers and even experts. Social equity was advocated in terms of income and social status under the traditional socialist system. Everyone was expected to and must sacrifice himself or herself to ensure the national and collective benefits of a hydro project with no complaints or dissent (Li 2000).

The TGP has been assessed as being beneficial to the country as a whole (REG 1988). Under this premise, SIA of the TGP was not subjected to the social cost-benefit scrutiny that is now regarded as intrinsic. The evaluation of pros and cons of the project was carried out mainly on the macro-economic level and confined to a set of predictions about future ecological and environmental impacts of the TGP. The potential transformations of the society, the industrial system with shifts in economic activities, and population relocation resulting from the project were given minimal attention in an inadequate SIA. Since the early 1990s, a range of transformations at the global, national and local levels have accompanied the further opening

policy and gradual establishment of the socialist market-economic system in China. The social and environmental consequences of the TGP and resettlement have increasingly attracted the keen attention of both civil authorities and academics. An approach to moving out a part of rural migrants is perhaps an effective strategy to cope with issues relating to equity and sustainability between in the beneficiary areas and in the reservoir area. However, a series of new social and demographic changes to cultural and social structures after distant resettlement must be taken into consideration in planning and implementing new approaches and operations for the TGP resettlement.

5.3.2 Necessity of SIA

Since the country carried out its opening policy and initiated economic reforms in the early 1980s, the government's roles in development projects have shifted from direct command to market-oriented management. Few people are willing to sacrifice their own economic returns from a project if they are in conflict with the collective benefits. These changes imply that conflicts of interest between different groups should be taken into account in analysing the socio-economic impacts of a hydro project on the affected regions and people. The affected population should include the people to be displaced in the reservoir area, those in the downstream areas, and the host people in any resettlement communities.

However, socio-economic analysis for a dam project has often been routine and perfunctory (Zhang 1999). This problem also occurred in the TGP. Resettlement and livelihood problems were generally overlooked in the rush to rebuild houses for the migrants. The potential social impacts of their new activities on their own livelihoods, the new environment and the reservoir area were neglected.

While numerous studies can be found on the ecological and environmental impacts of the TGP on the reservoir area and both upstream and downstream reaches of the Yangtze, it is difficult to find any explicit research on social impacts of the project. Social impact analysis was not even included in the Feasibility Study of the TGP. It would appear that the priority for the TGP was placed on economic and environmental considerations. Social aspects were either not perceived as a problem or ignored by the decision-makers and experts with technical engineering background. Moreover, social impacts have not been emphasised in any feasibility analysis of a project in China today (Zhang 1999).

As a matter of fact, the negative social impacts have emerged since a long time ago. More than four decades before the TGP was inaugurated and formally implemented in 1993, fear and uncertainty had already prevailed in the reservoir area. Economically, the lack of investment over a long period had severely restricted the development of the livelihoods of the people, communities and the general reservoir area. Investment in housing, enterprises, infrastructure and social facilities in areas that would be flooded were strictly forbidden or hampered.

5.3.3 Study of SIA

5.3.3.1 Cost-benefit analysis and the concept of SIA

Traditional assessments of dam projects have emphasised direct economic costs and direct benefits expected from the projects. The methodologies of this type of impact assessment are well-developed and increasingly complex (McKenney *et al.* 1999; Curry and Weiss 2000), but most economic assessments tend to overestimate benefits and underestimate costs. Economic assessments especially tend to overlook indirect and opportunity costs to environments and involuntary resettlement of people. They also fail to take into account some of the indirect benefits. Some forms of social impacts are gender specific (Mehta and Srinavasan 1999). The impacts of dams on downstream environments (Adams 2000) are inadequately understood. It is a fact that costs and benefits can be tangible and intangible. The methods of measuring the costs and benefits can be quantitative and qualitative. Some of the quantitative parameters that can be measured are: the standards of living, land ownership and other material assets. However, there are some that cannot be measured because they are intangible, such as cultural identity, social structures and well-being. In addition, economic indicators are not appropriate representatives of activities which are not monetary in nature. Such activities are often central to how a community, household or an individual accumulates, organises and uses resources.

The World Bank (1996) attempted to estimate direct costs and benefits, and indirect social and environmental costs of 50 large-dam projects, but it turned out that, despite the sophistication of project assessment procedures, the collection of data on social impacts was not yet seen as an essential element in dam planning, construction or funding (Adams 2000,

p. 11). SIA is generally unsystematic and non-professional, not only in China's TGP but also in other dam projects worldwide.

Social, environmental and economic impacts interact in complex and profound ways. Assessments of social impacts can be conducted from tangible and intangible aspects (Adams 2000, p. 4). The latter includes human rights, culture and social norms. Access to and control of resources such as land and infrastructure, and social services in resettlement locations are intrinsic to issues of both equity and distribution. In the case of involuntary resettlement, non-pecuniary assets that will be lost include: cultural assets, psychological health, social cohesion, market access and non-priced environmental services (Pearce 1999). Adams (2000, p. 13) specifies that some socio-cultural impacts are impossible to quantify in economic terms, such as culture, political identity, freedom, mobility, the impacts of 'modernity' and knowledge. Some intangible impacts such as the loss of means of livelihoods, which are intangible or non-monetary, are hard or even impossible to assess in any satisfactory way. Therefore, broader social impacts cannot be easily captured by any conventional economic measure because they are difficult to assess using any standardised yardstick. The question of livelihoods, which is the core of study of involuntary resettlement, should be a central part of social impact analysis. In the process of resettlement, social changes and cultural transformations invariably interact with economic factors. As such, social impacts are also seen to contain economic issues (Adams 2000, p. 4).

5.3.3.2 SIA models

A conceptually sound SIA relating to resettlement of people would generate a greater capacity 'to explore ways of minimising displacement, to ensure cultural and ecological compatibility, to maintain community integrity and viability, and to maximise returns from new investments arising out of project implementation' (Bartolome *et al.* 2000, p. 21). Bartolome *et al* (2000, p. 20) suggest that the process of SIA be based on three elements:

(1) A detailed assessment of the socio-economic conditions of the people who may be negatively affected;
(2) A detailed study of the impacts in terms of the extent of displacement, the loss of livelihoods, the second-order impacts as a result of submergence, construction, mitigation measures, downstream impacts, and host communities; and
(3) A detailed plan to mitigate these impacts and an assessment of the costs of such measures.

The processes of displacement and resettlement constitute the socio-economic and cultural costs of the people displaced. These costs of resettlement are defined in some analytical models, particularly the 'stress model' and the IRR model which are discussed in Chapter 2. The 'multidimensional stress' model and the eight 'impoverishment risks' provide insights into the general social impacts of involuntary resettlement. The IRR model provides an effective tool to assess the social impacts of resettlement for it analytically reveals the 'cumulative effects' of resettlement, both separately and in their interconnection (Cernea and McDowell 2000, p. 16). Each aspect of the eight impoverishment risks after displacement can be assessed quantitatively and qualitatively. Cernea (1997, p. 1) identifies that at least three main classes of adverse social effects can be distinguished, which include: boomtowns around major constructions; downstream changes in agro-production systems; and population displacement/involuntary resettlement. The IRR model and the perspective on social impacts of displacement provide specific methodology and methods for SIA on a macro scale, such as a region or community. In China, there is a lack of social specialists in planning and decision-making institutions at higher levels. This results in extremely inadequate social impact assessments and a lack of concerns for livelihood reconstruction after displacement.

5.3.4 Framework of SIA of the TGP Resettlement

5.3.4.1 Concerns of SIA in distant resettlement

It is necessary to establish a framework which looks into the direct social impacts of displacement and resettlement. In this study, the affected people specifically refer to those living in the reservoir area and the host people in resettlement communities. The extent and nature of displacement and resettlement need to be identified. The further away from the reservoir area, the greater the risk of losses of social capital of migrants. The essential nature of GODR is rural-to-rural migration, and therefore the impacts inflict mainly on the rural population and communities in both the reservoir and resettlement areas. The rural-to-rural movement could affect peri-urban development because a number of migrants have been settled in peri-urban or even locally urban areas.

The TGP aims to increase the production and wealth of the whole country, but it will probably reduce the living standards of some people (migrants), or increase the inequalities between groups of population, or migrants and non-migrants. The TGP and its resettlement

have the capacity to change the relationships for better or worse. The principles of equity suggest that no group's rights should be allowed to override those of others, and that people must work out together how rival or conflicting rights are to be balanced (Brody 1999). Equity requires that the wealth of a nation and its people be developed with respect to the interests of all. In the context of distant resettlement, the risk to migrants lies in the process of displacement and resettlement. Issues of equity and distribution are profound and related to each scale and aspects of the benefits of the project. In order to identify the social impacts of TGP resettlement SIA must be put into the political and economic context, under which the political and economical circumstances have shaped and restricted the society's response to the project and ensuring resettlement.

With reference to the social impacts of the TGP, there exists the issue of equity and its distribution among different groups of population and between the beneficial and flooding areas. Issues of equity are extensions of the fundamental issues of justice of impacts of resettlement between regions, between groups of people and between genders. These issues have become the main concerns of the SIA of the TGP resettlement, especially distant resettlement. Three key questions about the social impacts of distant resettlement are:

1. Who are those affected by the GODR?
2. In what ways are these impacts being felt?
3. How are the impacts distributed between different categories of people?

Adams (2000, p. 17–19) suggests that SIA can be analysed in various frameworks: impacts differing geographically (varying by different environments); impacts through time (varying by different stages of the development process from planning through to decommissioning of a project); and analysis by major activities, positively and negatively. The latter framework was proposed by Joseph Milewski (in Adams 2000). It aims to set out the scope and nature of positive and negative impacts of a dam project at the key stages of its cycle. He sets up a system of weightings to measure the importance and priorities of the impacts of dam construction, including displacement and resettlement. This analysis framework clarifies the methods to be proposed and used for impact assessment of TGP displacement and resettlement. While a range of socio-economic impacts is outlined, major impacts at different phases in different resettlement schemes should also be emphasised.

The impacts of a dam project tend to increase economic inequalities between beneficiary regions and people and the affected areas and people to be displaced. Displacement and resettlement may enhance or reduce inequalities. Impact assessments should be protracted and should consider all geographical areas that will be affected. SIA should cover social, cultural and health impacts.

5.3.4.2 Principles of SIA

- **Equity**

Adams (2000, p. 36–38) has summarised six principles on equity. These principles consider equity to be a fundamental element of the process of assessing development options and participation by the affected parties, and should be integral to all stages of project planning. Issues on equity in the process of displacement and resettlement should cover all spatial and temporal scales and different social groups, e.g., resettlers and host people, men and women, rural migrants and urban migrants. SIA should be broadened to include unquantifiable social and cultural impacts on currently affected communities and individual migrants.

- **Participation**

Issues on participation of migrants in the entire process of resettlement are another important concern in SIA. The principle of participation in development has increasingly been a part of development planning since the last decade of the twentieth century, with full transparency in the planning process (Adams 2000, p. 44). Participation should involve all parties affected so that they have a say in assessing and determining their displacement and resettlement and the impacts on their livelihoods and environment. The rights of those affected by displacement and resettlement should include, at the very least, the right to be heard and the right to information in its entirety, disseminated via appropriate media. The extent and degree of migrants' participation, especially by those who have and are to be moved out, are important components of SIA. Representation, empowerment, bargaining and the appeals process are common issues relating to the participation of migrants. Before moving out from their original locations, migrants must be extensively consulted and should actively participate in the design of their distant displacement, social cost assessment and mitigative measures. To ensure authentic and efficient participation, migrants should take part in a way and at a time when they can influence decisions about their distant relocation. Some aspects that need a closer examination would be, for example, in a specific project, who participates, at what

stage of the project, in what circumstances, with how much power in the decision making processes and with what extent of access to key information (Ferradas 2000, p. 10).

- **Gender dimension**

This dimension has been a missing element in almost all impact assessments of large dams and resettlement. In reality, gender plays an important role in resources and labour allocation in the migrant family, community or nation (Mehta and Srinavasan 1999). It is necessary to study the specific ways in which TGP resettlement affect migrants of both genders, in particular female migrants.

5.3.4.3 Framework of SIA

Focusing on the impact assessments of TGP resettlement, this study attempts to propose a framework of SIA of the TGP resettlement as shown in Table 5.2.

The assessment of availability and migrants' accessibility to options provided in the resettlement schemes is important. The following concerns need to be highlighted in the SIA of TGP. How can the strategy and planning of the GODR scheme avoid or minimise net losses or livelihood-threatening losses for the people to be displaced, especially for the vulnerable groups (e.g., female migrants) and for people living in different rural settings? What are the remedies or countermeasures regarding good practice in the mitigation of negative impacts on migrants and host people in the GODR implemented? Issues on how costs and benefits are shared among different social and economic groups among migrants, sending and receiving areas and host people should be addressed. In what ways does the GODR impact on the livelihoods of those affected? How the links between migrants' livelihoods and well-being and the environmental changes may be analysed? How do the changes of environment impact on livelihoods in the resettlement locations? How may fair participation processes be defined in the context of strong governmental roles combined with the socialist market-economic mechanism in China today? What is the legal mechanism for the migrants' demand for information regarding their rights? How resettlement plans may be designed and executed, incorporating criteria on the SIA to achieve social and economic sustainability at regional and household level? To what extent is resettlement linked to land readjustment and changes, and the efficiency of land use in receiving communities?

Table 5. 2 Framework of SIA in TGP distant resettlement

Scope of SIA	Aspects of SIA	Assessments	
		In sending areas	In resettlement areas
Social changes	• Social capital loss • Resettlement capital (compensation and funds); • Land readjustment and reallocation; • Different social groups; • Social and cultural structure of migrants; • Regional demographic and labour changes; • Cultural changes.	• The fragmentation of the original society; • Disruption of social cohesion; • Loss of resettlement capital; • Compensation and how it is distributed; • Migrants living in peri-urban settings and purely rural settings, and vulnerable people (e.g., women); • Population and labourers moving out; • Traditional knowledge pertaining to health systems, sites identified with traditional belief systems, exploitation of natural resources.	• Decrease in resettlers' mobility (because of the unfamiliarity of the surroundings in the new environment and increased intensity of agricultural work); • Increased insecurity and fear because of scattered resettlement and increased transportation costs; • Isolation from relatives and friends; • Inflow of resettlement capital; • Redistribution of resources, e.g., land; • Conflicts in resource and non-agricultural employment opportunity between migrants and host people; • How compensation is allocated and used; • Social impacts on resettlement areas; • Population and labourers moving in; • Structural changes, traditional knowledge pertaining to health systems, sites identified with traditional belief systems, exploitation of natural resources.
Social integration	• Social and cultural transformation; • Options of resettlement schemes; • Costs and benefits; • Cultural identity.	• Options of preferred resettlement scheme; • Means to minimise costs and share benefits.	• Social integration of migrants in new environment; • Options of resettlement locations, means and development of livelihood restoration and production reconstruction; • Means to minimise costs and share benefits; • To preserve and reinforce cultural identity.
Livelihood restoration	• How serious and in what way displacement impacts on livelihoods; • Link between livelihood and environmental changes to different groups of people; • Health	• Delays in the normal development of livelihoods;	• Addressing importance of dwelling reconstruction; • Poverty reduction; • Decreasing income during transit period; • Impacts of resettlement on migrants; • Impacts of resettlement on host people; • Incidence of diseases, nutritional levels and dietary changes;

Production reconstruction	• Land readjustment and reallocation		▪ Agricultural production; • Non-agricultural job opportunity; • Land availability and land holdings; • To what extent resettlement is linked to readjustment and changes in the land and efficiency of land use in receiving communities? • Transformation of land tenure patterns, types of crops under cultivation.
Participation	• Fair participation; • Dissemination of information (on resettlement locations and removal); • Grievance channels.	• The incorporation of relevant government departments, grassroots, academic and research institutions, NGOs into the participation.	• Resettlement location selection; • The incorporation of relevant government departments, grassroots, academic and research institutions, NGOs into the participation.
Countermeasures for reducing negative socio-economic impacts	• Policy (compensation, rural resettlement) • Preferential Policy; • Legal system; • Institutional mechanisms; • Skill training; • Design and execution of resettlement plans; • Governmental roles (accountability and responsibility).	• Profit sharing; • Preferential Policy; • Legal mechanism for migrants' demand for information regarding their rights; • Dependence on governments;	• Preferential Policy; • Skill training; • Land allocation; • Tax reduction; • Infrastructure and social services; • Legal mechanism for migrants' demand for information regarding their rights; • Dependence on governments;
Status and development of venerable groups	• Socio-economic status of female migrants	• Production activities in household and community level; • Rights in resettlement and development	• Production activities in household and community level; • Rights in resettlement and development.

5.4 Identified Aspects of SIA in GODR

5.4.1 Social Integration of Displaced People

Social integration is a significant aspect of SIA. In the TGP resettlement, two major patterns of social integration through the 'near resettlement' scheme and the 'distant resettlement' scheme can be identified, based on the distance of displacement and resettlement of rural migrants. Living in the original environment, migrants displaced by near resettlement can still tap into their existing social networks, but they have less incentive to obtain new social capital. Compared to the 'near resettlement', 'distant resettlement' has specific characteristics in some important aspects, especially the entire losses of original social capital or 'lateral relationships' (social networks), resulting in a necessary social integration of displaced people into their new social environment. Migrants moved out by distant resettlement are more likely to re-establish new social capital despite experiencing severe stress in adapting to their new social environment in the resettlement communities. To promote social integration, migrants should have more choices in deciding their relocation destinations. Livelihoods, technical support and social services should be provided for them after their displacement. The rights of the affected host people should be taken into account in resettlement operations as well.

In the case of distant resettlement of the TGP, understanding the cultural significance of the village is crucial to the cultural losses. In Chinese culture a village is a symbolic structure, a sphere which is perceived and experienced as the 'fatherland or motherland' and engenders a great psychic energy (Tu 1994). Most villages have ancient roots that invoke historical consciousness, 'centeredness' and 'rootedness' in the community. The village is central to identity-building and the villagers have a strong attachment to 'place'. Resettlement can have a significant bearing on the continuation of symbolisms of the village and consequently impact on the villager's concept of 'self' (who they are) (Downing 1996). In the process of social integration of migrants resettled by GODR, the assimilation or cultural loss of migrants is an important aspect. In assessing the SIA of the GODR, answers to the following questions need to be found:

1. How to allocate and resettle the rural migrants amongst the areas in the designated 11 provinces?

2. What are the population density and economic development stage/phrase in the 11 provinces?
3. Can the migrants and host people get along with each other harmoniously?
4. How different and similar are the production measures, life styles and customs between the host people and migrants?
5. How to make fair use of the 'production resettlement fund' for providing migrants with land, infrastructure and social services?
6. What kinds of roles do the governments and institutions in the sending and recipient areas play in resettling, planning and reallocating the migrants and in resolving possible conflicts between the host people and migrants?
7. Are these supposed resettlement locations able to receive these migrant households?
8. Would the host people welcome and accept these migrants?

5.4.2 Land Distribution: the Dilemma of Rehabilitation

This study has identified a negative social impact of GODR in land readjustment and reallocation at community level in the short term. However, it is difficult to know whether some supposed changes or effects will in practice occur in the medium or long term. These supposed changes might include increased capital investment, productivity and labour opportunities, and non-agricultural development at community and regional level. The lack of income-generating resources in most resettlement locations is identified as a main impact of distant resettlement at migrant household level.

Social changes resulting from land registration and land-use changes are becoming apparent. While planners of the GODR see the displacement to better market-economic regions as helping migrants change their traditional views and integrate more easily into host society, in reality, living and production costs of migrants increase greatly (e.g., children's education, dwelling reconstruction, purchase of hybrid seeds, fertilisers, increase in the cost of living). In the initial stage livelihoods are difficult to be restored, relying primarily on cultivating land. The flow of capital, stemming from resettlement compensation, into the receiving communities may bring about construction of roads and facilitation of other infrastructure. If development projects in the resettlement region are planed and implemented, they will enhance the transportation or social services in this region and the region as a whole might benefit, too. They might attract new investments and increase the demand for labourers. The

new resettlers' movement into the area may result in the transformation of the regional social structure. These migrants may compete for land and resources with the host people. High expectations that moving out can help reduce or even eliminate poverty exist among migrants at the initial stage of distant resettlement. However most migrants lack the necessary skills. Migrants and resettlement communities are faced with both opportunities and challenges of development.

Skills training programs for the people to be moved out are poorly planned and very frequently not specifically designed for the regional demands in the resettlement locations. Planners see moving out as a good mechanism to reduce poverty. This point of view can, to some extent, increase the degree of willingness of migrants' moving out. It seems more rhetorical than real. There is a need to analyse data regarding changes in household income throughout the different phases of resettlement: the initial stage of displacement, the transit stage after resettlement, and the stage of production reconstruction. Reliable studies on changes in health indicators (e.g., incidence of diseases that might positively or negatively correlate with the process of displacement and resettlement), nutritional levels and dietary changes are also required in SIA.

5.5 Conclusion

The construction of the TGP and associated resettlement will greatly affect the economic, social and environmental consequences in the reservoir area and other affected regions, and vice versa. All the factors resulting in the socio-economic and environmental consequences of resettlement interact with one another. Accordingly, these consequences may become the causes influencing the other parameters which produce other socio-economic and environmental subsequences. Hence, impact assessments in the three fields (economic, social and environmental dimensions) should be seen as incorporative components of the general assessment of the resettlement, rather than as independent segments. The relationships between the three fields of impact assessments can be illustrated as Figure 5.2 shows.

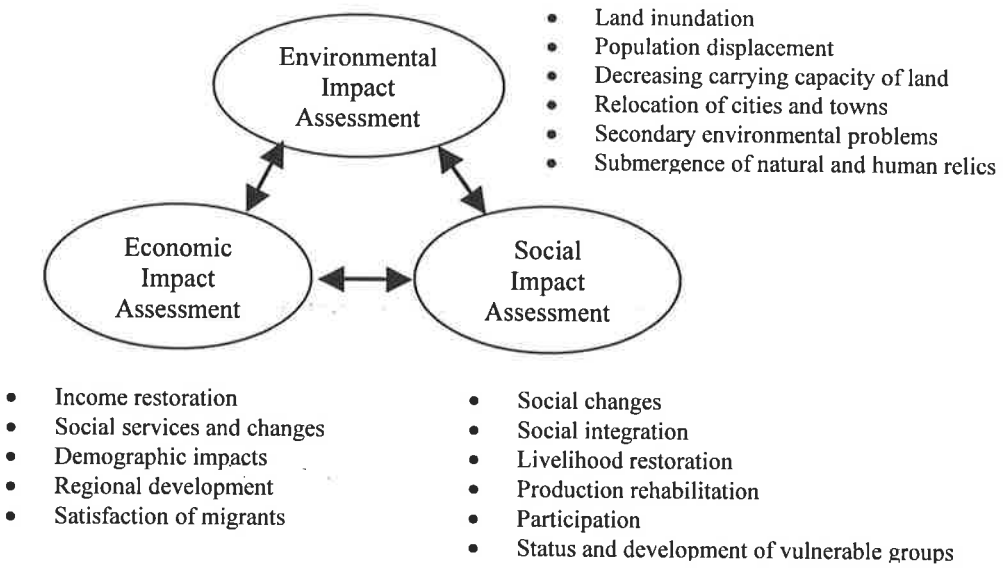


Figure 5.2 Relationships Between EIA, EIAs and SIA of the TGP Resettlement.

This chapter identifies the problems of quantifying and accounting for the economic, environmental and social impacts of the TGP. Principles and frameworks of environmental and socio-economic impact assessments relating to the TGP resettlement are outlined on the basis of the practical process of TGP resettlement. Some impacts can be quantified and assessed using economic tools and appraisal measures, but some impacts cannot because they are intangible socio-cultural variables. Thus the methodologies on impact assessments of a dam project and resettlement should be a combination of quantitative and qualitative analyses. Quantitative analysis of these socio-economic variables should be cooperated with qualitative assessments of cultural and social changes arising from human displacement and resettlement. These changes include a wide range of socio-economic aspects: transformations within households and in the community, changes in traditional perceptions, loss of cultural property, the changing roles of women, conflicts with other people, disruption of social organisation with the introduction of new forms of production (Ferradas 2000).

To set out a way for impact assessments of resettlement, in particular SIA, the principles of equity and sustainability in development are applied to resettlement. The socio-economic impact assessment relating to the TGP resettlement should be an indispensable part of the overall assessment of the TGP. Given the substantial spatial and temporal scale of the TGP resettlement, particularly distant resettlement, some effects of resettlement have not emerged. Thus data to be collected and used in the impact assessments are very limited. However, considerations and attempts to seek out suitable and effective methods for complex

assessments of resettlement are of higher significance than the assessment itself. Frameworks for social and environmental impacts are sketched out.

Socio-economic impact assessments can identify risks of resettlement, and armed with the wisdom of hindsight, counter-measures can then be explored. The principles of equity affirm the importance of these concerns in the course of GODR. The rights of migrants to be heard and to have their rights recognised and respected are the beginning of achieving equity in the process of resettlement. Social equity with reference to important categories of social conditions, such as the options of resettlement schemes open to migrants living in areas which are purely rural or peri-urban settings, and genders at household and community level, are stressed. Sustainable livelihood provides the linkages between different variables of social differentiation and between the changes in the environments which migrants and host people depend on. Considerations for participation of migrants are another important concern in SIA. It is important to clarify concepts such as equity, participation, human rights and sustainability. Obviously, the TGP resettlement is still in progress and this phase of the GODR has just concluded. Hence, some social, environmental and economic impacts have not manifested themselves.

Chapter Six

LANDUSE CHANGE AND RURAL RESETTLEMENT CAPACITY: A CASE STUDY

This chapter takes Yunan village in Kaixian County, an agrarian community which will be submerged by the TGP, as a case study area. Based on recent landuse survey and population data of the study community and using GIS-based multi-criteria analysis in landuse planning, this chapter reveals the current characteristics and future changes of landuse in both the inundation and resettlement areas. It is found that uncultivated land is scarce in both flooding and proposed resettlement areas. The non-flooded farmland is distributed mainly on steep slope (over 25 degrees). These areas are presently used for crop farming, already suffering from degradation and in need of restoration to ensure sustainability. There is a discrepancy between the amount of land required by resettlers and that which are available in locations where the rural population is to be resettled. The case study suggests that resettlement should take into consideration the carrying capacity of the land. This chapter from a community standpoint sheds light on the interplay between landuse planning and migrant resettlement and provides constructive suggestions for the TGP resettlement decision-making on a macro scale.

6.1 Introduction

6.1.1 Hydro Projects and Resettlement Impacts

One of the most irreversible impacts of hydro projects on environment is permanent land inundation in the reservoir areas and the corresponding transformation of landscapes. The land occupied by large dams in the world is more than 400,000 km^2, or 0.3% of the world's territory (Bosshard 2001). The real loss of land to inundation is much greater than the figure suggests because the land in river basins is the world's most fertile farmland, with the most diverse habitats, terrestrial and aquatic biodiversity and ecosystems (McCully 1996; WCD 2000; Picciotto *et al.* 2001). The inundation of land dissolves human's traditional connection with the land to be submerged and leads to landuse changes and reduction in the carrying capacity of the land for the resettled population (Xia 1994; Wu *et al.* 2002), which in turn impact on the changes in physical environment and human welfare (Scudder 1973), including soil erosion and nutrient loss (Meng *et al.* 2001), variation in hydrological processes (Chen *et*

al. 2001), potential climate warming, land degradation (Wang 2002), biogeochemical impacts (Campo and Sancholuz 1998; Friedl and Wuest 2002), loss in biodiversity, break down of social ties and food security (World Bank 1994), and spread of infectious disease (Patz *et al.* 2000; Zhou *et al.* 2001; Seto *et al.* 2002). Landuse change and resettlement arising from reservoir inundation also impact on agriculture and food security of the resettled persons.

Acquiring land for dam or reservoir construction eliminates the means of livelihood for the people dependent on that land (OED 1998a). Most dams and reservoirs are situated in rural areas which are usually characterised by poverty associated with scarce land resources, finite carrying capacity, fragile environments with serious water issues and soil erosion, lagging socio-economic development and low literacy of the labour force. The TGP, Danjiangkou and Ertan projects on the Yangtze River in China and the Narmada project in India are some examples. Inadequacy or in-equivalency of land to resettle relocatees is a critical issue worldwide. Land lost cannot be readily replaced with other land near the reservoir areas or in distant relocation sites because the general availability of arable land has been reduced by population increase, urbanisation and land degradation. Resettlement can lead to deterioration in host-resettler relations and result in land disputes due to inadequate farmland and growing population pressure in resettlement communities (Xu 1995; OED 1998a).

Displacement and resettlement resulting from hydro projects is involuntary, and so is the expropriation of land and other assets. Economic rehabilitation of the displaced is most often the weakest aspect of resettlement planning (OED 2000). A recent study (Gillett and Tobias 2002) reveals that resettlement has affected the human biology through changes in water and food security (Lerer and Scudder 1999). The Narmada project in India is widely seen as one of the worst reservoir resettlements in terms of the lack of farmland provided to displaced people (Fearnside 1990). Consequently, strong protests from the affected people forced the World Bank to terminate its financial aid for this project. In China, many people displaced by a number of large dams built before the mid-1980s suffered from food insecurity for a few decades, living on less productive land either uphill in the vicinity of the dam or further from the reservoirs. The direct reasons lay mainly in the loss of all their land, a decline in land holding of each person and degradation in land quality (Li *et al.* 2001). Inadequate land supply can lead to a decline in income, which in turn aggravate the economic impoverishment suffered by these displaced.

The 'developmental resettlement' policy associated with the TGP proposes that resettlers be

assisted in their efforts to improve their former production levels, income earning capacity and living standards, or at least to restore them to before-project levels or before the actual displacement. The rural resettlement communities have adopted land or agriculture as a basis for resettlement, as stipulated in the resettlement *Regulations* (SCC 1993, 2001). 'Near resettlement' has been the main approach used in the resettlement of rural dwellers since the commencement of the TGP in 1993. The original resettlement planning (REG 1988) had intended for 40% of the rural relocatees to be resettled in secondary and tertiary industry, but this plan has proven to be optimistic owing to changed macro and micro-economic situations. While the TGP provides opportunities for the development of the whole Yangtze River basin, it brings with it a range of ecological and environmental problems (Wu 1998). It was not until 1998 that the central government realised that deforestation in the upper reaches of the Yangtze River was responsible for disastrous floods and that clearing of these areas for displaced people should be limited.

Studies of the human carrying capacity of the land in the selected resettlement location and subsequently seeking a viable distribution of people are important in resettlement. Carrying capacity is a 'dynamic' (Meadows *et al.* 1992, p. 21) and not a 'unitary' concept (Cohen 1995, p. 233) due to the complex interaction of various factors, such as food and energy supplies, eco-system services, human capital, people's lifestyles, cultural constraints, social institutions, political structures and public policies (Myers 1992). Fearnside (1986, p. 73) defines carrying capacity as 'the maximum number of persons that can be supported in perpetuity on an area, with a given technology and set of consumptive habits, without causing environmental degradation'. This perception has been broadly shared or supported by many scholars (WCED 1987; Gilbert and Braat 1991; Myers 1992; Postel 1994). For the purpose of this study, carrying capacity refers to the number of population that the resources in an area can support or feed, based on a long-term and stable supply of resources. Land is an essential resource in a purely agrarian area like the case study area. The availability and capacity of the land in any rural resettlement community is an important determinant in the evaluation of the number of migrants which it can receive.

Development-induced impoverishment is believed to be the result of poor policies and inadequate planning (Downing and Garcia-Downing 2002). In rural resettlement associated with the TGP, detailed planning of resettlement, including analysis of land availability and carrying capacity, often lags behind the process of actual displacement due mainly to the limitation of conventional methodology for landuse planning. Moreover, resettlement plans

cannot be easily or quickly adjusted to complement corresponding changes in policies.

The objectives of this chapter are, in the contexts of landuse planning policy in China and 'developmental resettlement' policy associated with the TGP, using GIS-based multi-criteria analysis in landuse planning, to analyse (1) the characteristics of landuse in the flooding area and the proposed resettlement area; (2) land loss to inundation in the study area; (3) the availability and carrying capacity of the land in the designated resettlement area; (4) evaluate the reforestation of cultivated land on steep slopes of 25 degrees or greater and limitations of improvement of lower yield cultivated land; and (5) discuss the impacts of landuse changes on resettlement and implications for landuse planning. The 175m inundation line (which is the highest water level of the reservoir after the scheduled completion of the dam in 2009) is the criterion that separates the flooding area from the non-flooding area.

6.1.2 Case Study Area

Qukou town, 14 km south of Kaixian, is a major agrarian zone that will be submerged, whose submergence zone encompasses 16 administrative villages. Yunan village, the case study area (Figure 6.1), is one of the main areas to be inundated in Qukou, as shown in Table 6.1. Yunan village is a typical community representing the flooding status and rural resettlement in this county.

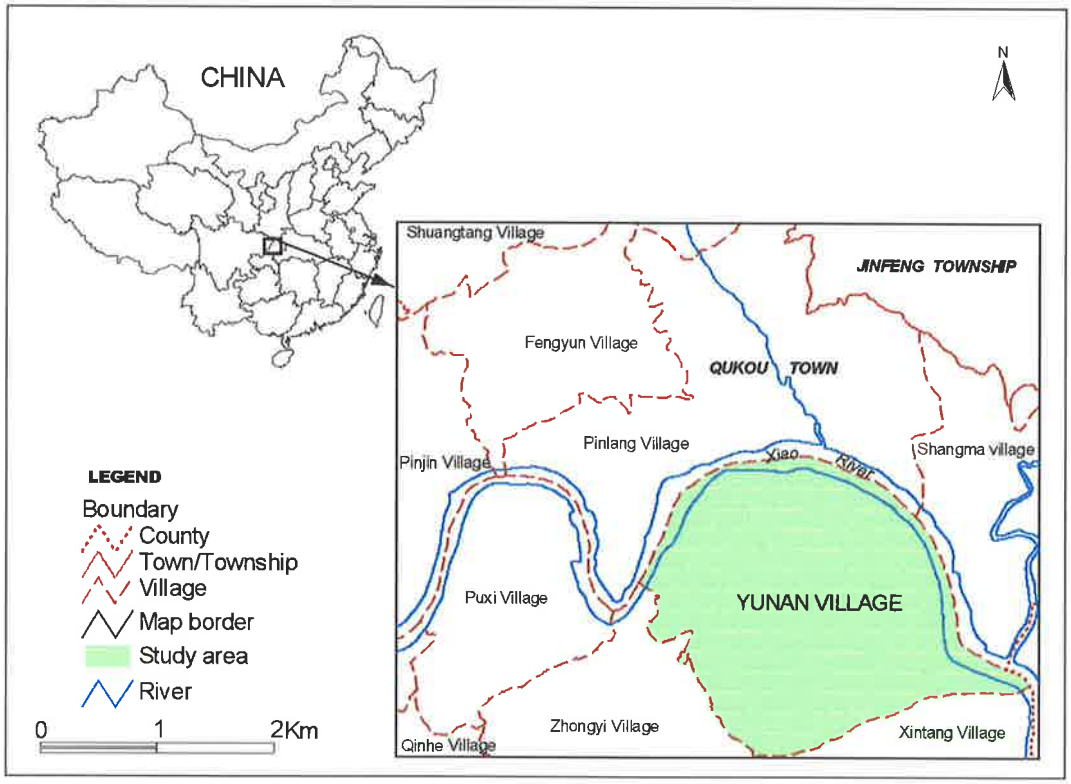


Figure 6. 1 Case Study Area and Its Surrounding Areas.

Table 6. 1 Flooding status in the study area.

Flooding zone	Agricultural population [a] (1999)	Directly affected population [b] (1992)		Productively resettled population in rural areas [c]		Cultivated land and orchard to be flooded [e] (ha)
			Agricultural population	In 1992	By 2007 [d]	
Yunan village	4 011	1 855	1 854	945	1 131	144.2
Qukou town	28 920	8 737	8 656	6 546	7 825	775.97
Kaixian County	1 292 411	61 337	59 863	43 834	52 447	3209.87

Notes: [a] Agricultural population refers to the people whose household status is registered as rural residency.
[b] Directly affected population refers to the population whose houses will be flooded by the dam construction.
[c] Productively resettled population means people who will lose their farmland and need to be provided with farmland or means of production to restore agricultural production or job opportunities for livelihood and production rehabilitation.
[d] By 2007: figures are calculated at the population growth rate of 1.2%.
[e] Cultivated land and orchard to be flooded: figures from survey data, 1992.
Sources: CWRC (1996); KSB (1999).

6.2 Landuse Planning Policy in China and Its Impacts

In rural China, land is owned collectively (mainly at the village level), with landuse rights allocated to households in terms of the numbers of family members or labour. The allocation of land for specific uses in the integrated landuse plans (*tudi liyong zhongti guihua*), an important aspect of land policy, did not come into effect until 1998, when the revised national Land Administration Law (*LAL 1998*) replaced the one first enacted in 1986. While landuse planning in urban areas has been given much emphasis (Yeh and Wu 1999), similar planning in rural areas did not receive much attention until the mid-1990s (Pieke 2002). China has consistently carried out policy objectives in agriculture, supporting subsistence agriculture and national food grain self-sufficiency, on the one hand, and supporting the commercialisation, industrialisation and urbanisation, on the other, since the liberation in 1949 (Lardy 1983). In order to retain land for grain production, land policy and administrative measures are established and embedded in Chapters 3 ('Overall landuse planning') and 4 ('Protection of cultivated land') of the *LAL 1998* (Liu 1999). The landuse planning policy requires authorities at the State, Provincial, County, Township and Village levels to draft and implement integrated landuse plans which require particular plots of land be utilised for specific purposes only (Pieke 2002). Incorporating farmers' 30-year land tenure rights, which aim to provide strong incentives for farmers to invest in their currently low-yielding land and to ensure the farmers' long-term productivity gains in agriculture (Zhang *et al.* 1997; Smil 1999), the landuse planning policy has confronted the difficulty for village cadres to readjust land

holdings on the basis of changes in household size or population scale in a village (Pi 1999; Xie 2001). The land tenure policy protects the contract land of farmers' households from being readjusted except in extreme cases, such as natural disasters and requirements of national development projects.

With reference to landuse, one objective for the Chinese government to achieve is to guarantee a minimum subsistence to rural people by allocating each person with a plot of land. The other objective is to rationalise landuse for urban expansion, infrastructure, industry and commercial agriculture. Both objectives are often in conflict (Pieke 2002). An important policy in landuse after 1998, as stated in the *LAL 1998*, has been the requirement to make up for any losses in agricultural land by bringing land elsewhere under cultivation (*zhan duoshao, ken duoshao*) in order to keep a dynamic equilibrium in the total amount of cultivated land (*gengdi zongliang dongtai pingheng*). Consequently, the preservation of cultivated land has become a dominant concern and guiding principle in landuse planning since 1998 (Pieke 2002).

Landuse is divided into three basic categories: agricultural, construction and unused. 'Agricultural land' (*nongyongdi*) subdivided into 'basic agricultural land' (*jiben nongtian*) and 'non-essential agricultural land' (*yiban nongtian*). The former mainly comprises 'cultivated land' and is mainly used for basic bulk cropping (e.g., grain, oilseeds, cotton and vegetable) to provide the people with basic maintenance. The latter is used for other agricultural production such as orchards and commercial forests. Changes from 'agricultural land' to 'construction land' (*jianshe yongdi*) will need direct approval from the State Council under some circumstances, as stipulated in the *LAL 1998*.

Both the *LAL 1998* and the resettlement *Regulations* explicitly address the significance of environmental preservation. The cultivation of wasteland appears to be a potential main source for obtaining cultivated land, but it is restricted to those distributed on gentle slopes (Li, Y. 2000). Land with a gradient of 25 degrees or greater is strictly banned from being reclaimed. In addition, the country has implemented a policy of reforestation or 'returning cultivated land on slopes of 25 degrees or greater to the forest or grassland' (*tuigeng huanlin*). The Chinese government reiterates that destroying forest for land reclamation must be halted. On 9 March 2000 the Forestry Bureau, the State Planning Commission and the State Financial Ministry, issued a governmental announcement (No. 111 [2000]), titled the 'Circular on Carrying out Preparatory work of Returning Cultivated Land to the Forest or Grass Status in

the Upper Reaches of the Yangtze River and in the Upper and Middle Reaches of the Yellow River'. According to the plan and assistance policy of the national reforestation, the state will compensate the losses of farmer households for returning cultivated land to the forest or grassland for the maintenance of eco-environmental sustainability. The farmers living in the upper reaches of the Yangtze River can get a grain subsidy of 150 kg plus 20 *yuan* (US$ 1 = RMB 8.27 *yuan* as of March 2003) for each *mu* (1 ha = 15 mu) of cultivated land returned to forest or grassland for as long as required (Xie *et al.* 2002). According to the Reforestation Division of the Forestry Bureau in Kaixian County, besides 150 kg of food grain and 20 *yuan* subsidy, farmers in this county can get another 50 *yuan*/mu of compensation for purchasing nursery stock for a period of more than 8 years for ecological forest or 5 years for commercial forest. The levy on agricultural products and grain obligation to the country are exempted.

The Three Gorges reservoir area is in the lower section of the Yangtze River's upper reaches. The extent of eroded land exceeds 60% of the total terrain in the reservoir area (Du *et al.* 1994). It can be anticipated that the people's agriculture-based resettlement, through exploitation of sloping land, adoption of traditional cultivation aligned with slope on steep slopes, and deforestation for cropping and firewood, will exacerbate soil erosion and sediment accumulation in the reservoir (Dai 1994; Jiao 1998; Lu and Higgitt 2001).

Although reforestation will benefit the rehabilitation of the eco-environment of the reservoir area in the long term, it is one of the main factors affecting local land provision in the proposed resettlement communities. The main measures adopted for reforestation include returning cultivated land to forest or grassland, planting trees, prohibiting logging, providing food grains to compensate the farmers' loss of cropland (*yi liang dai zhen*) and contracting barren land to peasant individuals.

The landuse planning policy in China is characterised by a combination of modern landuse planning, environmental protection, socialist economic planning and pre-occupation with basic food production (Pieke 2002). This planning policy is perceived to be a key tool for the preservation of long-term interests of the country (Li, Y. 2000). It concerns agriculture, cultivated land, grain production and environmental protection. These concerns become important factors relating to rural resettlement plans in the Three Gorges reservoir region, analysing needs and supply of land, and properly dealing with the relations between reclamation, use, improvement and protection of farmland in any resettlement communities.

6.3 Techniques and Methods

6.3.1 Techniques

Landuse planning and land capacity assessment are inherently geographic problems. Landuse planning involves the analysis of the spatial distribution of human landuses in relation to other human and environmental elements in the landscape. In this sense, landuse planning is particularly suited to analysis by GIS techniques, which has been extensively used to assess a variety of landscape planning issues including biodiversity conservation (Scott *et al.* 1993), agriculture (Carsjens and van der Knaap 2002) and urban planning (Li and Yeh 2002). GIS has been used in landscape planning in China (Yeh and Li 1996, 1997, 1999; Chen *et al.* 2000).

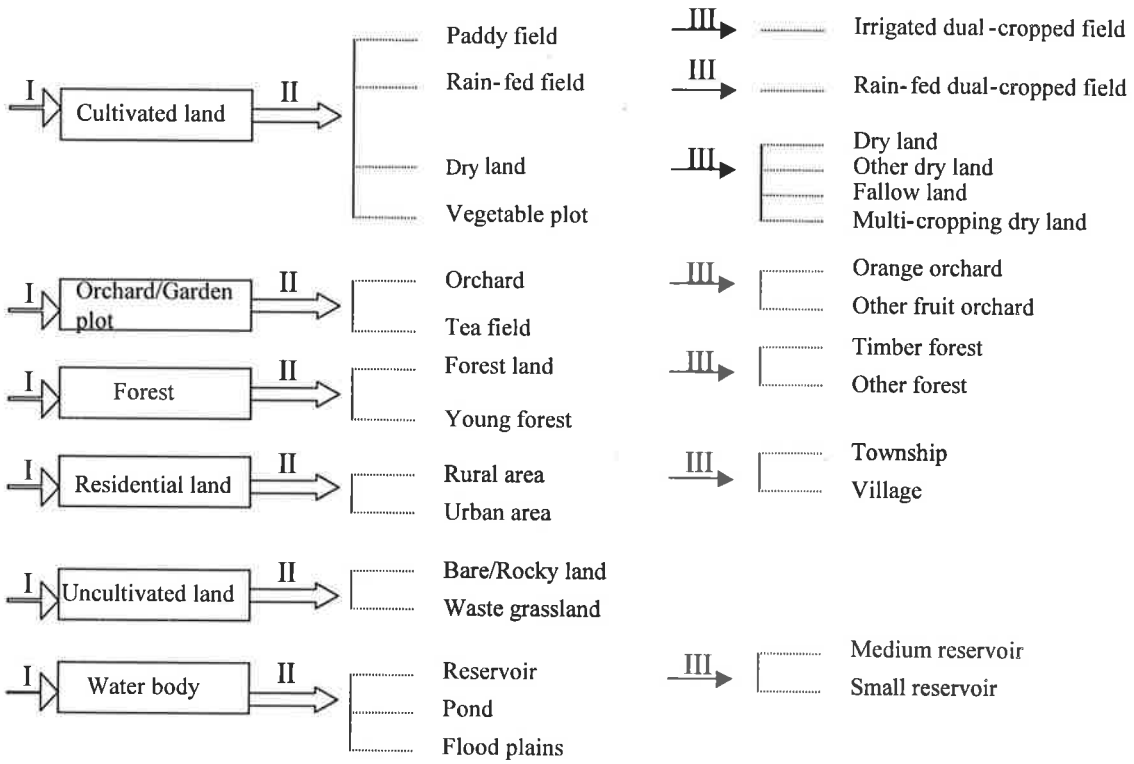
The most common form of GIS analysis in landuse planning involves the overlay of thematic spatial databases. Traditional map overlay analysis (McHarg 1969) is an elegantly simple technique involving the overlay of different themes (e.g. landuse, topography, soil type) and the assessment of their geographic relationships. In the landuse planning analysis in this chapter we use map overlay analysis based on a few key data layers – elevation, slope and landuse. Slope and landuse will be assessed in terms of the current distribution of landuse and the carrying capacity of the land which is primarily determined by slope in the case study area. These data layers will be overlayed and analysed in the assessment of impacts on resettlement in the case study area.

6.3.2 Criteria for Landuse and Slope Classifications

Keeping in line with the existing national landuse classifications, mapping landuse in the Three Gorges reservoir area helps address questions of land cover and landuse status. Based on the features of landuse and human impacts in the case study area, a three-tier classification system of landuse is established (Figure 6.2). To reflect the topographic characteristics in the study area, slope gradient is divided into six classes: 0–2, 2–6, 6–15, 15–25, 25–35, and >35.

In Yunan village, land with a slope of 0 – 2 degrees is located in the narrow flooding plain alongside the Xiao River. Land with a slope of 2 – 6 degrees extends along down hills. These areas, with stable hydraulic regimes and minor soil erosion, are most suitable for farming. On moderate hillsides of gradient 6 – 15 degrees, soil erosion increases slightly, but the land is still suitable for agriculture. The magnitude of soil erosion on slopes of 15 – 25 degrees

increases further and 25 degrees is the highest gradient suitable for farming (Du *et al.* 1994). The area with slope exceeding 25 degrees in the upper reaches of the Yangtze River has been suffering from severe soil erosion, especially since the 1950s (Xie *et al.* 2002). Land on steep slopes of 25 – 35 degrees and on slopes exceeding 35 degrees are suffering from detrimental soil erosion. Land on slope of 25 degrees or more, with thin, rocky and infertile topsoil, is not suitable for cultivation but is of some use for forestry.



Note: I, II, and III refer to three -tier classification of land use

Figure 6.2 Classification of Landuse.

Source: KG (1999).

6.3.3 Basic Data Sets

The primary data sets include maps of contours and landuse. The contour map sheet was obtained from Puxikou (Code: H-49-26-(33)), produced by the Planning Office of the Yangtze River Basin (1984), with a scale of 1:10,000 and contour interval 5 metres. The landuse map sheet was produced by the Kaixian Land Administration Bureau in 1999, with a scale of 1:10,000 and was based on the comprehensive land survey of the Kaixian County in 1999.

The scanned contour map and landuse map sheets were digitised in ESRI's ArcView, and

projected and edited in ARC/INFO to produce two data files: contour and landuse coverages for Yunan village (Figures 6.3 and 6.4).

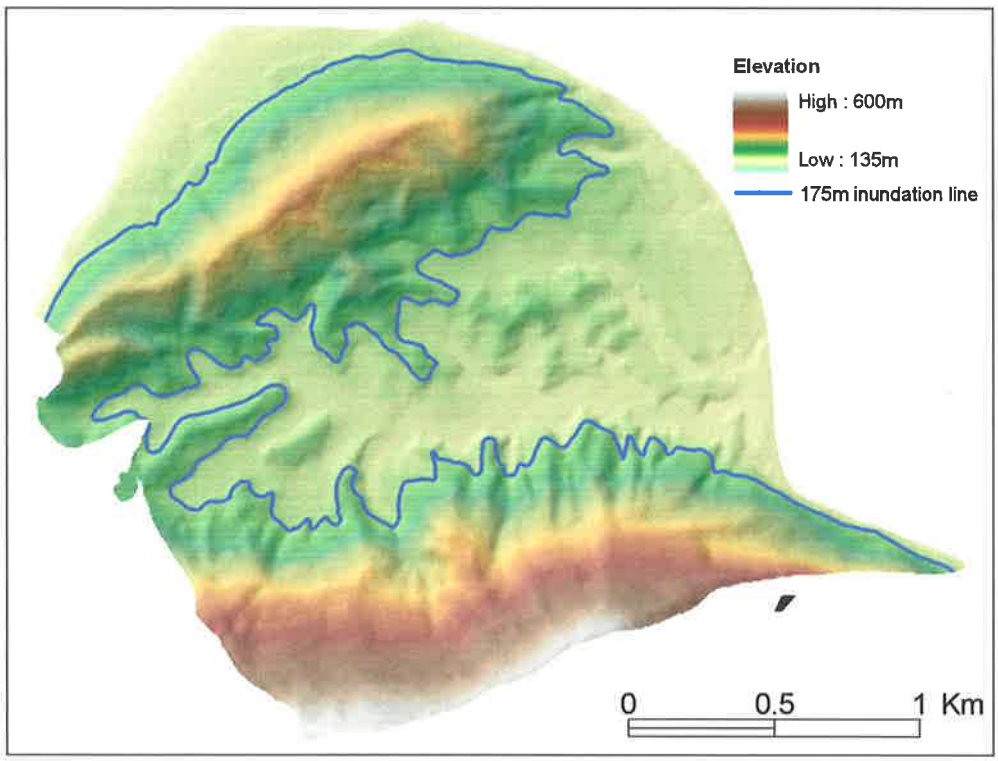


Figure 6. 3 DEM of Topography in Yunan Village, Kaixian County.

Notes that the lighter area below the 175m inundation line will be flooded, while the darker areas above the 175m inundation line are the proposed resettlement area. Note also that the small darker areas in the flooded area will become islands, from which current dwellers should be displaced and land use type may be changed to fishing or tourism.

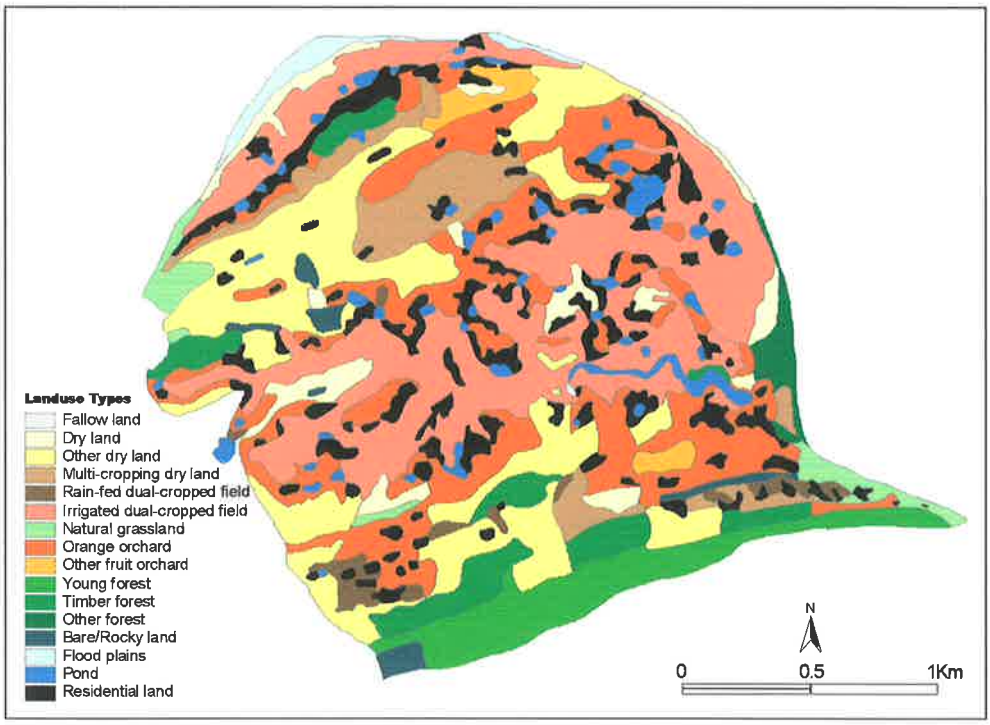


Figure 6.4 Landuse in Yunan Village, Kaixian County (1999).

6.3.4 Slope Classification

A digital elevation model (DEM) of the topography of Yunan village was created using Topogrid in ARC/INFO, with a 5-metre grid cell resolution (Figure 6.3). A slope grid was derived from the DEM coverage of Yunan village and then classified into six classes (Figure 6.5).

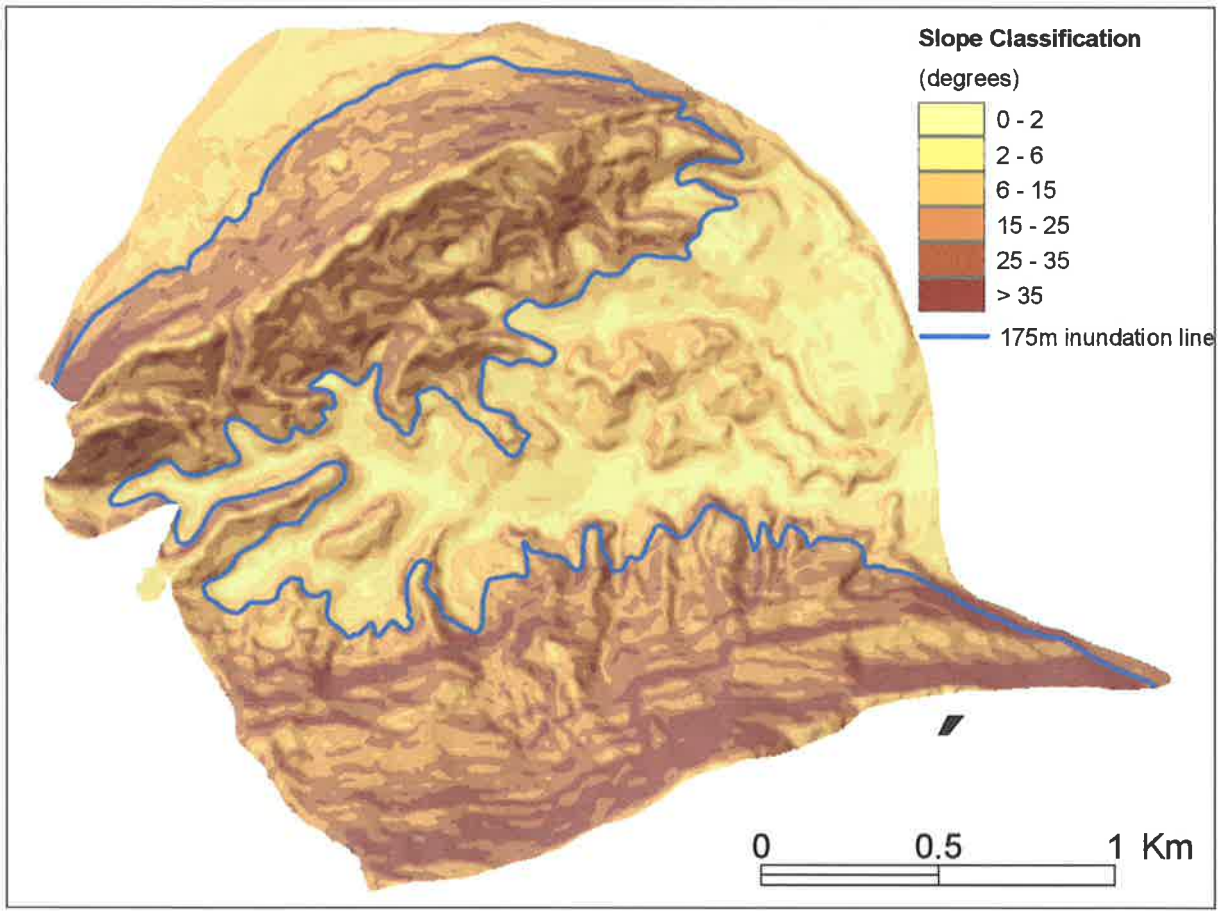


Figure 6.5 Slope Classifications in Yunan Village.

6.3.5 Overlay of Slope and Landuse

Landuse type is closely related to slope in the valleys of the reservoir region. Using Intersect in ARC/INFO, the two base files, slope and landuse coverage, were overlaid to create a set of maps of unique combinations of various landuse and slope (Figure 6.6).

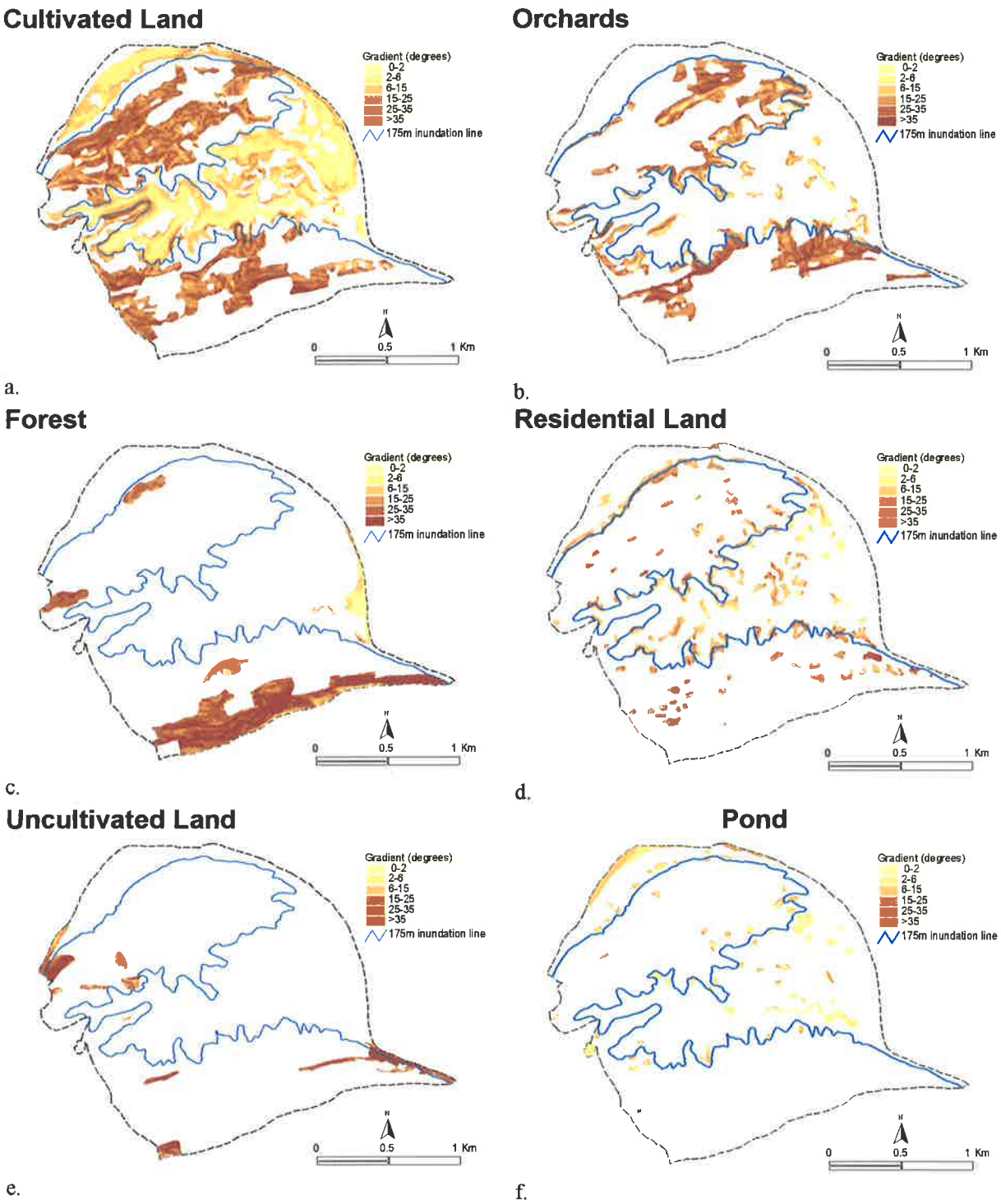


Figure 6.6 Coincidence of Gradient (Degrees) and Landuse in Yunan Village: (a) cultivated land, (b) orchard, (c) forest, (d) residential land, (e) uncultivated land, and (f) pond.

6.3.6 Productively Resettled Population and Land Demand

'Productively resettled population' (*shengchan anzhi renkou*) refers to persons who will lose their farmland or other production resources and need to be provided with land or means of production to restore agricultural production or job opportunities for livelihood and

production reconstruction. In order to ensure per capita agricultural productivity, which sets forth a standard of 600 kg grain in Kaixian County to maintain food security after displacement, the area of farmland should not be lower than before removal (CWRC and CSPDI 1996). The study adopts a simplified formula, based on land provisions to ensure the basic food security of the migrants in their new resettlement environment, to calculate the population carrying capacity of land versus land demand for resettlement (Equation 1).

$$P_c = \frac{\sum(L_c + L_o)}{\bar{L}} \qquad \text{(Eq. 1)}$$

P_c refers to the carrying capacity of the land for the migrant population to be productively settled. L_c represents the gross cultivated land. L_o symbolises the orchard area designated to resettle migrants in the resettlement community. $\bar{L}$ stands for the average standard area of cultivated land or orchard field set up to resettle one migrant in the receiving area. The standard has taken into consideration population density, the levels of economic and social development and consumption in the local area. The standard recommended by the relevant Chinese institutions is 0.08 – 0.093 ha per capita for cultivated land and orchard, among which 0.093 ha is set aside for newly reclaimed cultivated land or orchard, 0.087 for improved cultivated land and orchard, and 0.08 ha for cultivated land or orchard readjusted from the host people in the resettlement communities within Kaixian (CWRC and CSPDI 1996, p. 32). The amount of land required for migrants' resettlement in Yunan village is around 75 – 105 ha (Table 6.2), depending on the land provision to be adopted and the time of displacement of the migrants.

Table 6. 2 Land demand for migrant resettlement in Yunan village (ha).

Land provision	$\bar{L}$ Criteria (ha per capita)	$\sum(L_c+L_o)$ Land demand in 1992 [a]	$\sum(L_c+L_o)$ Land demand in 2007 [b]
Newly reclaimed cultivated land or orchard	0.093	87.885	105.183
Improved land and orchard	0.087	82.215	98.397
Recruited or readjusted land	0.08	75.6	90.48

Notes: [a] Land demand in 1992 is calculated based on "productively resettled population" in 1992, $p_c = 945$.

[b] Land demand in 2007 is calculated based on "productively resettled population" in 2007, $p_c = 1\ 131$.

6.4 Results and Discussion

6.4.1 Limited Fertile Cultivated Land, Steep Slope Farming

As can be seen from Table 6.3, the total area of various landuse types in Yunan village is 463.3 ha, of which 187.2 ha are in the flooding area and 276.1 ha in the proposed resettlement community. The amount of flat land on slope of 0 – 6 degrees is 20.3% of the total land area, of which merely 5.5% is fertile and well irrigated. The largest proportion of land, 44.0%, is situated on slopes of 6 – 25 degrees, while the land situated on slopes above 25 degrees accounts for 35.8%. This trend of slope distribution is representative of the general trend of entire flooding area in Kaixian County.

Table 6. 3 Land use (ha) by slope (degrees).

Landuse	Slope 0 – 2		Slope 2 – 6		Slope 6 – 15		lope 15 – 25		lope 25 – 35		Slope >35		Total
	175m		175m		175m		175m		175m		175m		
Cultivated land	18.91	0.10	48.13	1.04	35.60	10.33	11.50	43.84	1.90	53.54	0.21	10.05	235.16
Orchard	0.72	0.25	2.36	1.42	5.94	6.99	5.19	25.75	2.49	28.58	0.25	7.87	87.80
Forest	1.70	0.03	2.24	0.17	1.50	1.35	0.42	6.96	0.10	19.18	0.09	21.21	54.96
Residential land	0.86	0.02	4.64	0.27	12.55	3.41	7.77	11.17	1.30	6.12	0.06	0.90	49.06
Uncultivated land	0.00	0.02	0.00	0.07	0.49	0.42	0.75	2.32	1.79	3.55	1.14	5.19	15.73
Pond	3.00	0.07	6.27	1.75	6.07	1.59	1.23	0.47	0.02	0.09	0.00	0.00	18.97
Total	**25.21**	**0.47**	**63.63**	**4.72**	**62.14**	**24.09**	**26.86**	**90.52**	**7.60**	**111.06**	**1.75**	**45.22**	**463.26**

Figure 6.6 and Table 6.3 show the categories and distribution of landuse in Yunan village. It is worth noting that over two-thirds of lands are cultivated land and orchards. Around two-thirds of cultivated land is irrigated dual-cropped land, orange orchard and 'other dry land'. Figure 6.6 also illustrates the variation in dominant landuse types by gradient. The dominant cultivated land, irrigated dual-cropped field or rice paddy, 93.5 ha, or 22.3% of the cultivated land, is distributed on slope of 0 – 15 degrees, mostly in the flat flooding area (93.6%). Orange orchard is the second largest landuse type, mainly distributed on hillsides at slope varying from 15 – 35 degrees to over 35 degrees, particularly on slope of 15 – 35 degrees in the proposed resettlement area. Steep slope above 15 degrees is mainly occupied by 'other dry land', the third largest landuse type in the village. 'Other dry land' is locally named as 'hanging land' (*guapo di*) or 'paper land' (*dazibao di*), which is in critical condition and has a thin and infertile soil layer, looking like a tiny plot attached to the mountain or a piece of paper hanging in the air. Crop farming on steep slopes is widespread. Due to the lack of water

and fertiliser, and the difficulty in cultivation and management, the cultivation and harvest of such land relies upon 'the mercy of God' (*kao tian shou*). Forest and orchards are the main landuse types on steeper slopes. As the human-induced forest is young, the eco-environment is fragile on steep slopes.

6.4.2 Scarce Undeveloped Land

Table 6.3 shows that the uncultivated land in this village is merely 15.7 ha, or 3.4%. It consists mainly of bare or rocky land and is distributed on slopes of more than 25 degrees. This type of land is a result of the people's need to meet demands for firewood and grain after the liberation of China. The uncultivated land area of 11.6 ha in the designated receiving community is hardly suitable for farming. Consequently, there is almost no potential farmland to be reclaimed in Yunan village.

6.4.3 Flooding Status Below the 175m Inundation Line

Figure 6.6 and Table 6.3 also depict the landuse categories and distributions by gradient and by type in the flooding community. Most of the land (80%) is distributed on gentle slope (0 – 15 degrees). Much of the land to be flooded is cultivated and residential land. Fertile cultivated land, mainly irrigated dual-cropped land, accounts for 62.1%. The riverside plain is a key cropping zone in this village. As seen in Figure 6.6 (d), housing area takes up 10.6% of the total area in the village (49.1 ha). The housing area below the 175m line is 27.2 ha, which includes yards, retained vegetable garden and bamboo field surrounding the rural residential sites.

6.4.4 Landuse Status Above the 175m Inundation Line

Figure 6.6 and Table 6.3 display the three main types of landuse above the 175m flooding line, namely cultivated land, orchard, and forest, making up 43.1%, 25.7%, and 17.7% respectively of the total land area of 276.1 ha. Most of the land is on steep slopes, mainly distributed above slopes of 15 degrees. It is also noted that 'other dry land' is the major component of cultivated land, having an area of 74.4 ha, accounting for 62.6% of the cultivated land, or 26.9% of the total land area in the resettlement community. It appears that the infertile and low-yielding 'other dry land' will be potentially the main resource provided

to migrants. However, 'other dry land' located on slope 25 degrees or greater will have to be returned to forest or grass status. Orange orchards make up 24.1% of the total land area.

6.4.5 Reforestation of Cultivated Land on Steep Slope

The area of forestry land is only 55.0 ha, or 11.9%. More importantly, the forestry is primarily young forest (5.7%) and timber forest (5.0%), distributed above the elevation of 175-metre. About half of forestry land is not native forest but secondary forest of one to three years old, which is sparsely distributed.

Figures 6.7 and 6.8 show the association between landuse and steeper slope gradient of more than 25 degrees in Yunan village. It is apparent that steeper land is concentrated in the area above the 175m flooding line. The correlation of steeper land in the entire village and in the areas above 175m is very high.

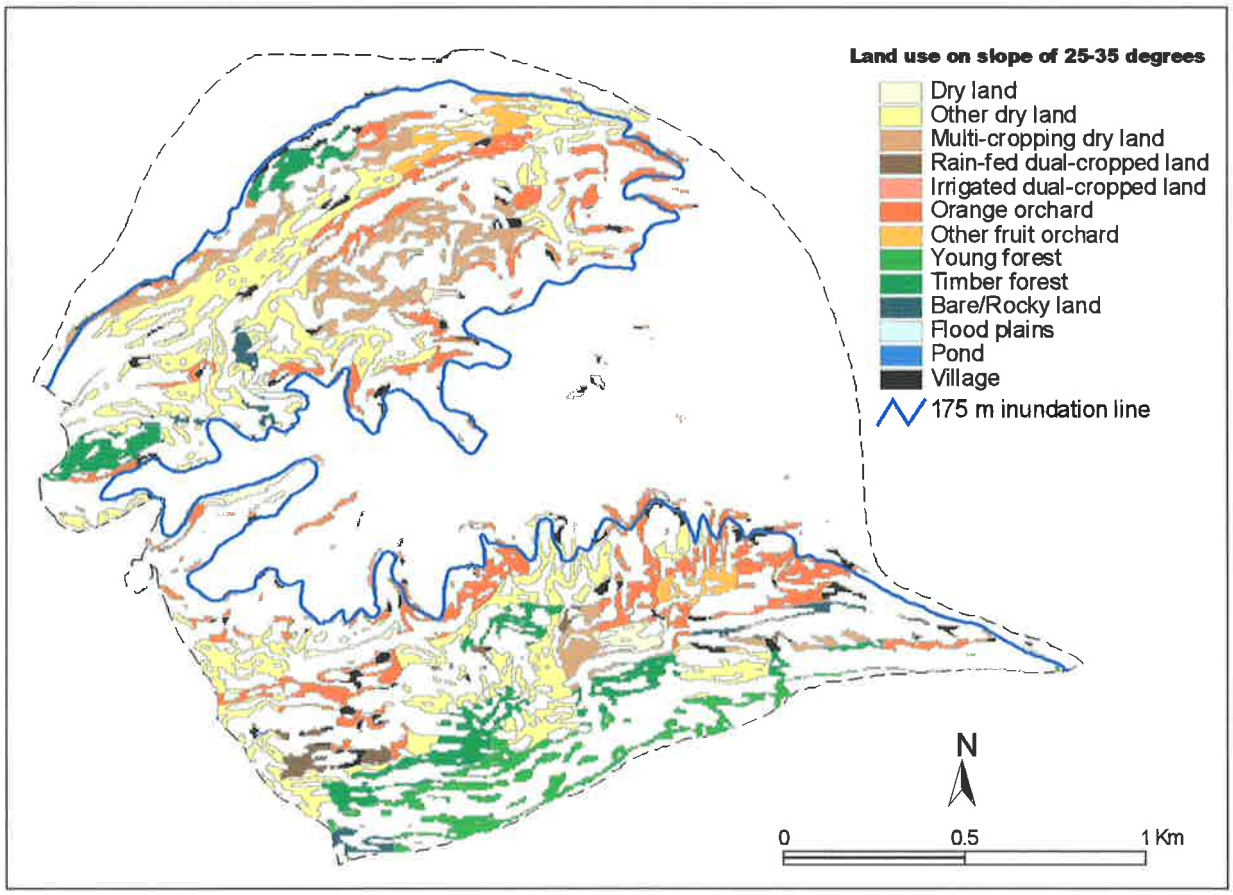


Figure 6. 7 Landuse on Slope of 25 – 35 Degrees. Note that the main land use types are "other dry land" and orange orchards.

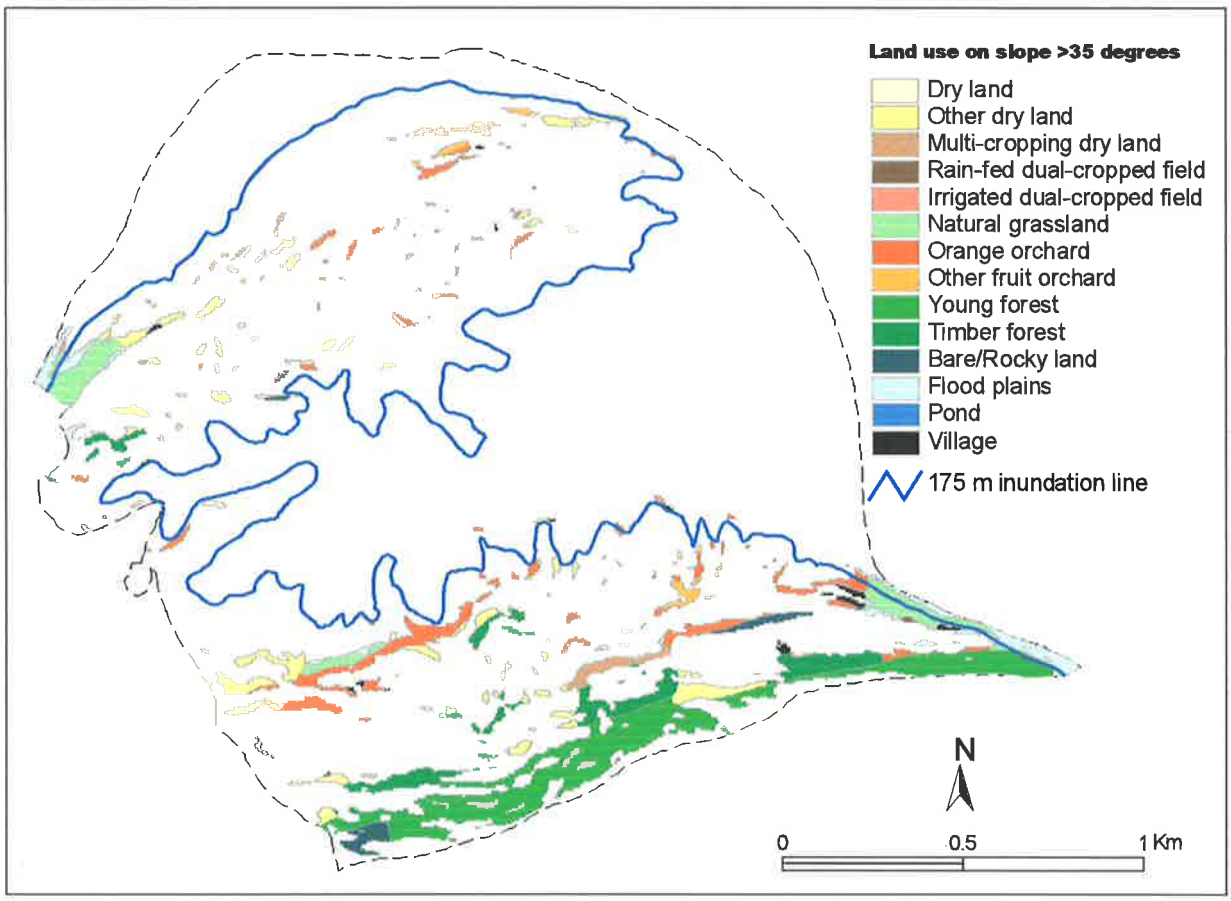


Figure 6. 8 Landuse on Slope > 35 Degrees.

Cultivation of land on steep slopes in the reservoir area is a prominent characteristic of farming, which has led to serious water and soil erosion (CMEPB 1998, 1999, 2000). All the cultivated land (63.6 ha), 40.7% of the total land area on slope of gradient exceeding 25 degrees, must be returned to the forest or grass status according to the national policy, especially the largest portion of 'other dry land' (42.8 ha, accounting for 67.3% of this category of cultivated land), and 'dry land' which is around one quarter.

6.4.6 Limitations of Improvements Made on Lower Yield Cultivated Land

There is a significant difference in agricultural productivity between the district to be flooded and the proposed resettlement area. The fieldwork in Qukou in 2001 found that the gross produce of land (in terms of standard grain) in the flooding plain was an average of 9,765 kg/ha in 2000, compared to 6,960 kg/ha in the resettlement areas uphill. The difference in land productivity will greatly affect the human carrying capacity of land when plotting the resettlement capacity of uphill land. Addressing the land provisions for resettling migrants should not only emphasise the quantity of land but also the quality. The main factors which affect the agricultural yields on hillsides above the elevation of 175-metre include:

- Lack of water conservation system;
- Infertile soil;
- Low ratio of multiple cropping;
- Lack of effective management on orchard field.

In the proposed resettlement community, the remaining cultivated land which might be suitable for farming and located on slopes less than 25 degrees is 55.3 ha, but it is mainly situated on slopes of 15 – 25 degrees. This kind of cultivated land is in need of being improved to increase its fertility and capacity of water conservancy, particularly requiring irrigation facilities. However, inadequate investment restricts the improvement of low yield farmland. Also, an adoption of desirable agronomic practices – appropriate tillage, suitable crop rotations, continuous recycling of crop residues and other organic wastes, and efficient use of fertiliser and irrigation water – would require time to improve the soil quality of the low-yielding land.

6.4.7 No Additional Land to Resettle Migrants

Reforestation will reduce the amount of cultivated land for resettling migrants. The migrants are very likely to face a threat in food security after their removal. The shaded figures in Table 6.4 show the maximum areas of land which might be used to resettle the migrants in Yunan village.

Table 6. 4 Land status above the 175m inundation line.

Land status	Area (ha)
Cultivated land:	118.9
To be used (on gradient 0 – 6 degrees)	4.1
To be improved (gradient 6 – 25 degrees)	51.3
To be returned to forest/grassland (gradient ≥ 25 degrees)	63.6
Forest	48.9
Fruit orchards	70.9

Four assumptions are made:

(1) All the lower yield dry land (51.3 ha) on slope of 6 – 25 degrees might be improved;

(2) The remaining cultivated land (4.1 ha) and orchard (70.9 ha) would be adjusted from the host people and used to resettle migrants;

(3) The housing sites for migrants to rebuild houses will not be encroaching on cultivated land and orchard field;

(4) Construction of infrastructure will not acquire cultivated land or orchard field.

The maximum land area, including dryland and orchard, in the designated resettlement community is only 126.3 ha, which, according to the criteria of land-based resettlement in Kaixian, can only support 1m524 people. The host population in the proposed recipient area was about 1,809 at the end of 2000, suggesting that the land in the proposed resettlement community cannot possibly support the current entire population of Yunan village for basic grain cropping production. As a result, there is no extra land to answer to the need of the migrants' resettlement. All the migrants could not be resettled via the near resettlement scheme. Moreover, around 285 host villagers should be considered as environment-related migrants, affected by harsh agrarian production conditions or land degradation uphill, and moved out of the proposed resettlement community as well.

6.4.8 Implications for Landuse Planning

The analysis of land availability is very important in selecting appropriate resettlement location. The potential of reclaiming land and improvement of low yielding land in any designated resettlement communities is an important component of resettlement plans and landuse planning. This component can be included in the social impact assessment (SIA), environmental impact assessments (EIAs) or the report of implementation of a hydro project.

Effective and timely analysis and estimation of the reduced land availability caused mainly by reforestation in the local resettlement location is critical. GIS provides a methodology and technology to facilitate such analysis in an objective way, especially in tackling the larger scheme of programme planning and evaluation research (Page 1993; Hugo 2001). Using GIS, landuse change and human carrying capacity of the land in any community scale can be clearly analysed. This study from a micro scale at a village community level might be extrapolated to macro scales at township, county or reservoir area levels. If dynamically inputting landuse data such as remote sensing data or detailed survey data of various scales and areal size, situations of land flooding and land availability in the proposed resettlement locations can be further analysed systematically. Using the techniques of GIS to build landuse database, analyse the carrying capacity of land, map landuse changes, and effectively manage land resource in the Three Gorges reservoir area can provide the relocation planning and implementation with scientific specifications and powerful technical support. Only if the carrying capacity of the land were correctly anaylised through an appropriate methodology, then can sustainable resource use be achieved (Lado 1999).

6.5 Conclusion

Social and environmental consequences of reservoir resettlement have been undervalued in resettlement planning in the past. Resettlement schemes should adapt to the changing contexts of landuse planning and resettlement policies in order to work out more suitable resettlement options. However, the undertaking of landuse planning or environmental and social impact assessment often occurs belatedly and is limited in scope (WCD 2000). Consequently, issues like budgetary problems, lack of accountability, poor management, deficient land supply, inadequate personnel and equipment allocated to the displacement and resettlement inevitably arise (Scudder 1973), resulting in the impoverishment of the people produced by many large dams and reservoirs.

Landuse planning policy (including land ownership, land tenure and landuse transformation) varies by county and temporal dimension. Land policy and landuse changes as well as the endowment of farmland, means of production and levels of economic development and standard of people's consumption, greatly impact on the carrying capacity of an area. In an area which is dominated by agriculture, land is an essential resource on which most people depend for basic subsistence. The human carrying capacity of the land becomes a determinant in analysing the changes of landuse and plotting resettlement planning.

The analysis of carrying capacity of the land was missing from resettlement planning in the past. The carrying capacity in the confined environment of the reservoir area hinges on the interaction between the population and food supply in the transition period after resettlement, and is closely related to the changes in landuse, particularly the reduction of cultivated land. Sustaining a basic subsistence of the relocatees after displacement is a primary condition for maintaining a stable society in the reservoir area and a starting point for the displaced toward a better life after resettlement. Allocating farmland to eligible 'productively resettled population' provides them with the basic condition to re-establish their livelihood and production.

Farming on slopes, especially those over 25 degrees, has been common in the Three Gorges reservoir area. Reservoir inundation and reforestation for the purpose of restoring and reconstructing a sustainable environment in the reservoir area will greatly change the landuse status and in turn impact on resettlement of the rural people. The landuse changes will definitely reduce the amount of cultivated land and result in a decrease in the carrying

capacity of the land. Possible means to seek adequate land for resettling the rural persons clashes with strict policy which places limitations on landuse and resettlement. Land available for the near resettlement scheme cannot support all of the displaced people, strongly implying that some migrants need to be moved out of the reservoir area and resettled through a 'distant resettlement' approach. The study suggests that the rural residents living in the flooding areas above the 135-metre flooding line (the level of the reservoir when filled in 2003) but with deficient farmland provision or inadequate carrying capacity in the proposed recipient communities be considered as eligible migrants and be moved out via distant resettlement. GIS provides effective and objective methodology and techniques in the applied field of landuse planning and resettlement.

Chapter Seven

LAND PROTECTION AND COMPENSATION FOR LAND INUNDATION IN PERI-URBAN DISTRICTS: THE CASES IN KAIXIAN COUNTY

This chapter analyses two major issues in relation to land-based rural resettlement: land protection works to minimise the number of people to be displaced and maintain fertile farmland in the inundation area; and provision of compensation for land losses. Kaixian County, an important area to be submerged in the Three Gorges reservoir area, is the case study area. It has the largest population to be displaced and land area to be submerged among the counties.

In section 7.1, the people's predicament of land losses and problems of land availability are emphasised. In section 7.2, the measures used to protect land through appropriate engineering works are analysed. Section 7.3 provides an evaluation of the current arrangements made for compensation and resettlement to the farmers who will be displaced. Under present regulations the specific value of peri-urban land is underestimated: neither cash-in-hand arrangements nor land-for-land swaps are adequate. There are other problems. The availability of suitable land for resettlement is scarce and rarely of equivalent quality. The inflexibility of the 'household responsibility system' contributes to the problem. It is suggested that some of those facing displacement should be encouraged to accept resettlement in places at considerable distance from their current homes and that a more creative approach should be taken to the issue of compensation to enable people to develop their trade and business skills.

7.1 Land Scarcity

7.1.1 Status of Land

Kaixian (see Figure 7.1) makes up 12.7% of the overall flooded area and 13.1% of the population to be relocated by the Three Gorges dam (CWRC 1997). There are 616 village groups from 93 administrative villages in 11 towns and communes lying in the submergence region in Kaixian. Approximately 118,200 persons will be relocated by 2009 and of these

64,400 people are defined as rural citizens. The persons to be uprooted account for 4.8% of the population and 8.2% of the agricultural population in the county. According to a detailed land survey in Kaixian in 1993, the land to be submerged is 4,640 ha, of which 2,740 ha is cropping land and 552 ha orchards (CWRC 2000). Some eighty percent of the cultivated land to be flooded is level and fertile, situated in the river valleys and plains.

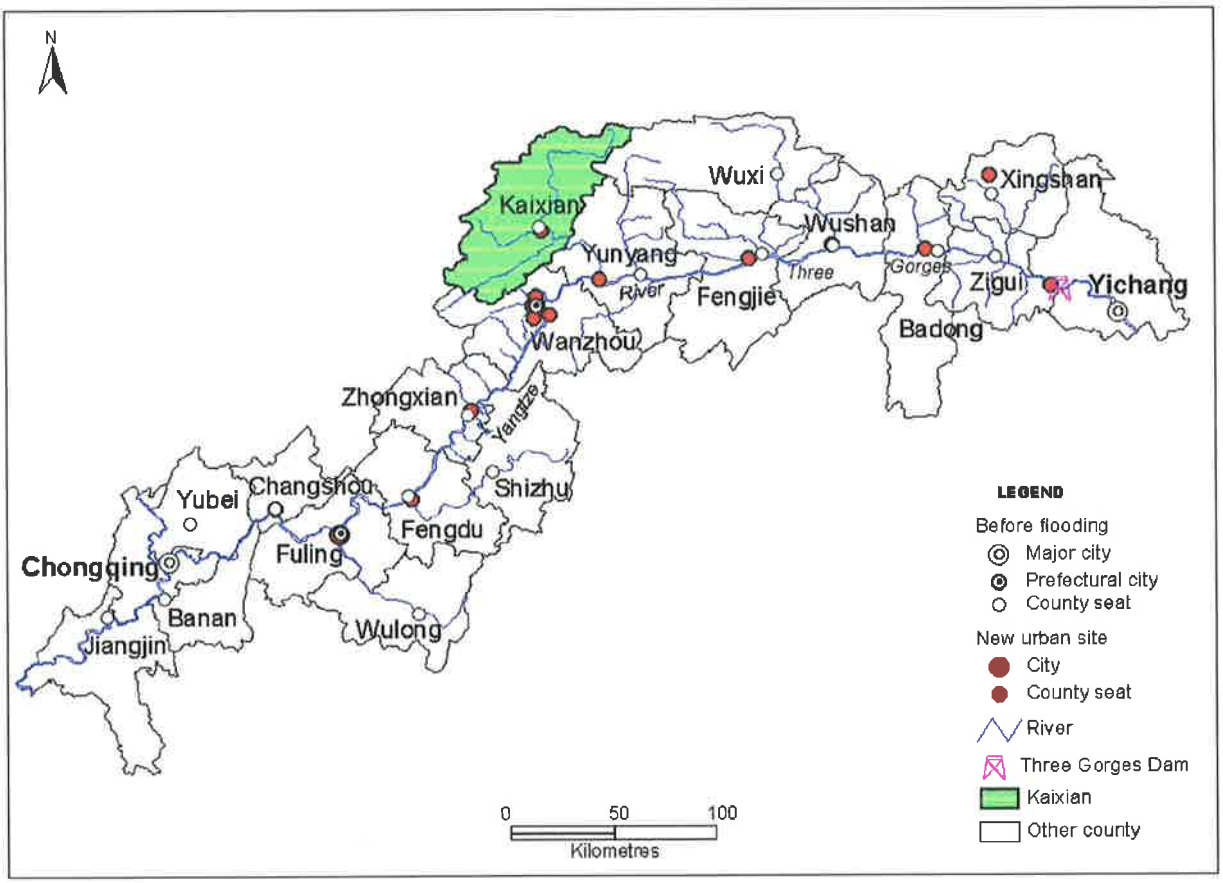


Figure 7. 1 Three Gorges Reservoir Area and the Location of Kaixian.

Source: Compiled from the Resettlement Bureau of the TGPCC (1997a).

Per capita land area is only 0.07 ha, half the average 0.13 ha in China (CNSB 2001). Fertile farmland is distributed along the river valleys but will mostly be submerged. The ratios of mountainous land, hilly land, and plain are 63: 31: 6. The ratio of cultivation makes up 25.77%, much higher than the national average of 13.52%. The percentage of farmland located on slopes of more than 15 degrees accounts for 61.85%, with 33.49% of farmland is situated on very steep hillsides of 25 degrees or greater. Land degradation is serious. The area suffering water and soil erosion amounts to 270,638 ha, or 68.11% of the total territory area. The area suffering from heavy erosion, distributed mainly in the submergence zone, is 172,969 ha, or 43.53% of the area of the county. The annual loss of topsoil reaches some 21.1 million tonnes. Thin soils with reduced nutrient content speed up land degradation.

7.1.2 Limitations of Land Reclamation and Improvement of Low Yield Fields

In the planned local resettlement communities, the total exploitable wasteland is 2285.5 ha, merely 205.5 ha for cropping and 828 ha for forestry. Of all the land-use types in the receiving communities, dry land situated on slopes of more than 25 degrees makes up 46.81%, or 388 ha of the total cultivated land (CWRC 1996, p. 30). Plans were made to reclaim land and improve low yield fields of an area of 12,420.2 ha, investing 23.7212 million *yuan*. Since 1986, when the 'trial of the TGP resettlement' was initiated, reclaiming land and improving poorly yielding farmland have been carried out in 255 groups of 62 villages within 11 towns/townships in this county. By the end of 2000, 659.4 ha of land had been developed, of which 237 ha could be used to receive rural migrants but the portion which can be directly allocated to resettle migrants was only 68.2 ha. The main reason is because considerable areas of reclaimed and improved land are of rather inferior quality, especially the land reclaimed during the 8-years' trial resettlement (1986–93).

- **Limited uncultivated land**

Kaixian is located in a mountainous region with dense population along the valleys of rivers, Nan, Dong, Puli and upper Xiao, one of the main tributaries of the Yangtze River. Above the flooding elevation of 175-metre, there is almost no uncultivated land remaining, as the case study in Chapter 6 has revealed.

- **Inadequate investment in land**

This results in reclaimed or improved land that is not ideal. Per capita funds for the 'productively resettled population' are only 7,000 *yuan* in Kaixian (rate as in 1993). The gross compensation and funds for rural resettlement are 540.1697 million *yuan*, or 15% of the total resettlement funds in Kaixian. However, the investment in land reclamation usually needs around 300,000 *yuan*/ha, while 120,000–150,000 *yuan*/ha is required to improve land on hillsides into standard terraced land, with affiliated irrigation. Relying only on the resettlement funds, which actually are the main means of investment to reclaim or improve land, is likely to yield few results.

- **Serious water and soil erosion**

The newly developed land is suffering from heavy erosion. Human management of the land is not efficacious due to the long duration of resettlement between its commencement in 1993 and its completion in 2009. The newly developed land is situated on steep hillsides with thin topsoil and sparse vegetation. Research has shown that for every per cent reduction in forest cover in the Three Gorges region, soil erosion increases to 128.47 t/km^2 per annum (GRICAS 2000). The amount of soil eroded from slopes makes up 60.6% of the total erosion, equivalent to 53,333 ha of fertile topsoil eroded, with an annual loss of chemical nutrient elements such as N, P, and K of 1.2 million tonnes.

- **Inadequate water conservancy measures**

The lack of agricultural equipment and facilities, especially water conservation, to sustain the achievements of land development, is another factor. Even though the rainfall in this county is about 1,100–1,500 mm/yr, due to inadequate water facilities, water supply for human and livestock consumption and agricultural activities is still problematic. The capacity to resist natural disasters, particularly droughts and floods, is weak.

- **Steep dry land**

More than ninety percent of the land to be reclaimed is rocky or sandy. Most dry land is distributed on steep hillsides (>25 degrees), lacking in irrigation to cope with droughts. The soil layer ranges from 10–30cm in depth. Soil salinity is serious. The yield of agricultural products is low and average annual income originating from land is only around 4,500 *yuan*/ha. It needs a few years of farming for newly opened land to become productive.

Cropping on hillsides is a main factor that exacerbates soil erosion, land degradation and environmental deterioration. In the reservoir area, there are about 266,667 ha of steep land on slopes of more than 25 degrees, accounting for 18.2% of the total land area. The proportion of steep land in the lower reservoir section amounts to 28.5% in Fengjie, 38.4% in Yunyang, 45.9% in Wushan, and 49.6% in Zhigui respectively. Sixty-six percent of the amount of mud and sand worn away are from steep land. Slope gradient of approximately 10 degrees is an obvious limit. Over this threshold, the amount of soil erosion increases by 390 t/km^2.a for every increase of 1 degree. By contrast, the increment of soil erosion on forestry land is only 39.3 t/km^2.a (GRICAS 2000). This illustrates that improving steep land by creating terraced land is necessary to restore the environment in the reservoir area. However, agrarian production on dry land has played a key role in the rural economy in the reservoir area. Fifty-

six percent of food grains are produced on sloping land. The current policy of regeneration of the cultivated land on slopes of 25 degrees or greater will benefit the rehabilitation of the environment in the reservoir area in the long term. However, it will reduce grain production, resulting in food insecurity (Zhang and Xu 1997). The implementation of the reforestation policy will greatly increase the pressure of rural resettlement in the reservoir area because arable land available and exploitable is limited.

There is inadequate land available for resettlement and whatever land exists is often unsuitable for agriculture. Moreover, rehabilitating the uphill land of more than 25 degrees to forest or grassland will exacerbate the situation of arable land supply. By early 2001, only 1,786 farmers had been resettled in the agricultural sectors in Kaixian. The persons near the town or county urban settings have only obtained around 0.027 ha of farmland per capita. Those settled away from townships have received about 0.04 ha per capita. Some 30, 000 rural migrants are required to be resettled locally through the NR scheme. The main resettlement task will be concentrated in the latter stages (2004–08) of the resettlement, as shown in Figure 7.2. These migrants have to share the remaining unproductive land uphill with the host people.

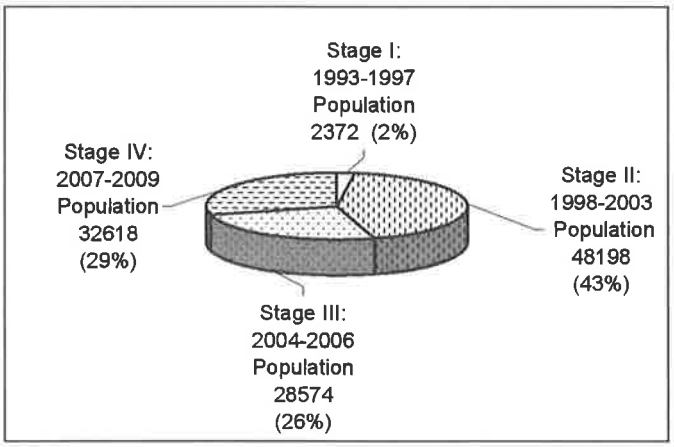


Figure 7. 2 Migrants to be Displaced in Kaixian by Stages (1993–2009).

Source: CWRC and CSPDI (1996).

Practical countermeasures to tackle the issue of land shortage include: (1) protect farmland from inundation by adopting appropriate protection engineering works; and (2) move out a proportion of migrants through a distant resettlement approach.

7.2 Land Protection Works on the Xiao River

7.2.1 Objectives

The submerged areas in Kaixian are densely populated and mainly agricultural districts, which extend along the three tributaries of the Xiao River. The 15 land plots to be protected are located at the end part of backwater of the Xiao River, as shown in Figure 7.3. The 15 zones encompass 392 villager groups of 43 villages in 7 towns/townships. The waters will be shallow when the reservoir is filled. The average annual net income in these zones is usually 20% higher than the average income in the county. These districts have suffered severe soil erosion. In 1993, the amount of soil loss reached 2,107× 10^4t. The average depth of topsoil was reduced by 6.82mm, with a soil erosion modulus of 5,054t/km^2.a. The land protection project aims at reducing inundation loss, enhancing the standard of local flood prevention, and minimising the number of migrants.

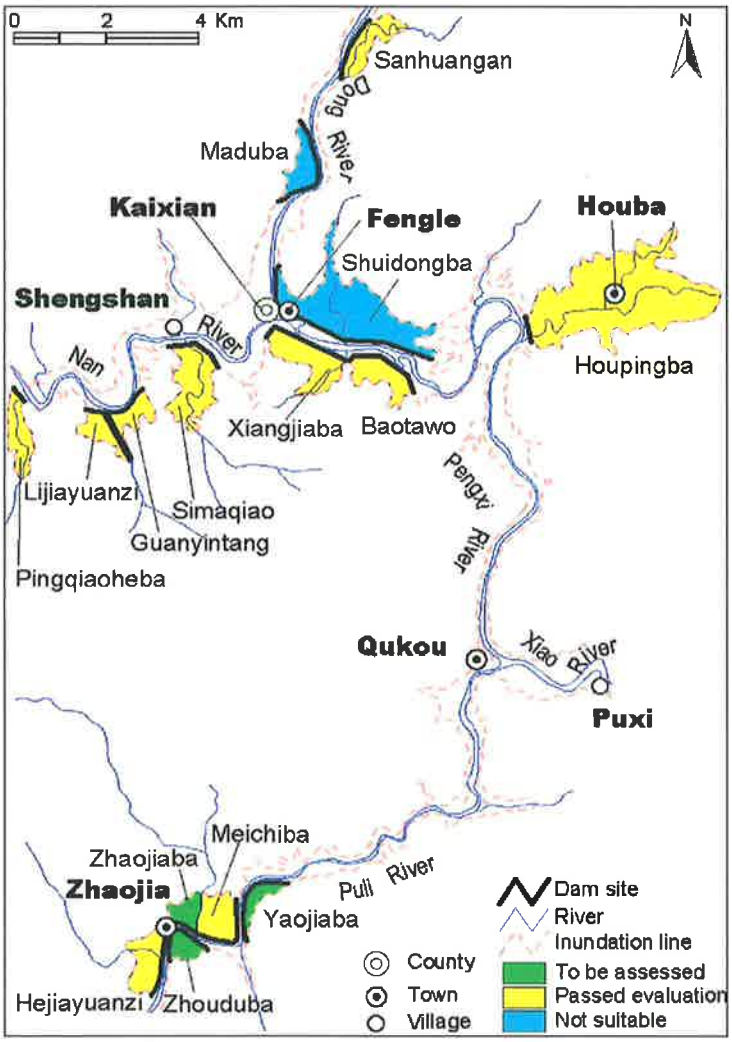


Figure 7. 3 15 Zones to be Protected in Kaixian.

Source: Compiled from Kaixian Resettlement Bureau: Diagram of the Land Protection Works. 1993.

The protection works are expected to protect the current cultivated land, orchard, infrastructure, and other assets from being submerged (CWRC 1997). The area of cultivated land and orchard to be protected is 908.3 ha. Parts of Fengle, Houba, and Zhaojia town seats could be conserved. The current standard of flood prevention is only capable of controlling 2-year floods. The prevention works will be designed to 5-years' flood control for land and 10 – 20 years' flood control for people's living and special infrastructure (CWRC 1997). As such, the loss of inundation could be reduced by amounts of 18 million *yuan* in urban areas and 4 million *yuan* in rural areas during a year of flood occurrences. It is estimated that 26,034 rural residents may not need to be displaced, of whom 19,309 people are 'productively resettled population' (KG and CSPI 2000). Correspondingly, the demand of population resettlement for land could be reduced. Some 1,773 ha of cultivated land and orchard might be relinquished.

7.2.2 Features

The elevation of the area to be flooded by the dam construction in Kaixian ranges from 150 – 175m. The 15 zones are at an elevation of above 160m. The area of each zone is over 10 ha (see Figure 7.4). The designed water level of flood prevention ranges between 175.22m and 175.23m. The engineering works consist primarily of three components: dams, discharging locks and pump stations (KG and CSPI 2000). The maximum height of the dams will be 20.24m, the minimum 2.0m, and on average 10m. The total length of the dams is 25.904 km. It is proposed that 17 pump stations and 18 discharging locks be built over a 7-year construction period.

The engineering works are found to be feasible by a cost and benefit analysis. The farmland, housing and population to be protected make up 37.9%, 22.4% and 28.2% respectively of the loss inventories of the TGP in Kaixian (KG and CSPI 2000). The compensation and funds for the land and asset losses and resettlement of people in these zones to be protected is 930.05 million *yuan* (KG and CSPI 2000). It is estimated that the total cost of the protection works will be 474.0969 million *yuan*, coming from the compensation and funds for population resettlement. The ratio of the cost and compensation is approximately 1:2 (KG and CSPI 2000).

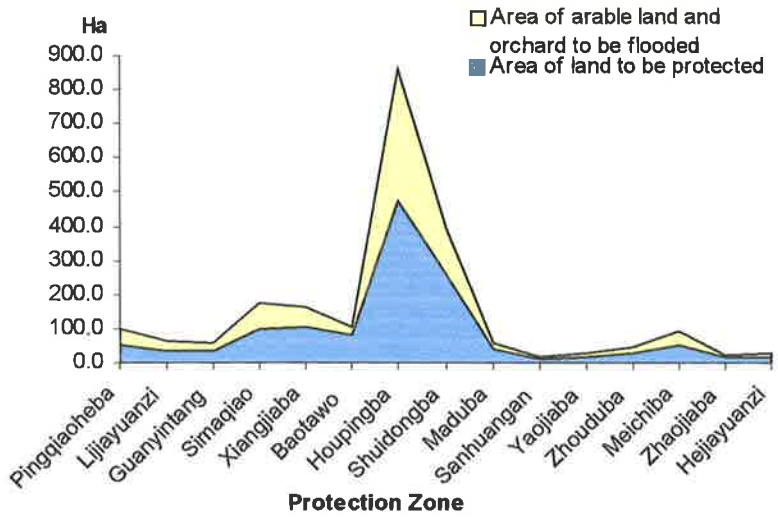


Figure 7. 4 Land Area of the 15 Zones to be Protected in Kaixian.

7.2.3 Uncertainty of the Protection Project

The feasibility evaluation of the protection project should adopt an accumulative assessment, taking into consideration the interaction of economic, geo-engineering and environmental impacts on this region. There are few successful examples of land protection works in China's hydro projects. Over several decades of the TGP feasibility assessment, how to deal with the problems of land inundation and population resettlement that Kaixian encounters has been in heated dispute among experts and accountable institutions (CWRC 1997). The corresponding scale of land protection measures along the Xiao River was one of the factors in determining the final height of the Three Gorges dam. The CWRC has conducted research into the feasibility and operational schemes of this protection project. The main schemes include: 'large-scale protection' which was rejected in 1996; and 'small-scale protection', which is more favorable from the cost-profit point of view.

However, the feasibility assessment and detailed plans for most plots of protection zones have experienced long periods of planning and a conclusion has not been reached. The uncertain situation prevails in all the affected parts despite the fact that in 1995 the CWRC explicitly authorised implementation of a 'small-scale protection' project, starting with a feasibility study of each zone. This long interim period has increased the complexity and uncertainty for the local communities to implement any resettlement schemes. Resistance is met when requiring rural people who reside in some zones to move out and resettle in distant

provinces. The survey in *Fengle* town found that most residents refused to be moved out, hoping to stay on their land which possibly could be protected.

7.3 Compensation for Land Inundation in Peri-urban Districts and Impacts on Rural Resettlement

To compensate for the peasants' loss of land, the tradeoff can either be in monetary terms or in the form of land-for-land, or a combination of both. The essential problems arising from land compensation are: how to measure land loss, what compensation standard to adopt, and to whom the compensation should be paid. In the reservoir area, two types of rural settings can be identified: purely rural areas and mixed peri-urban and agricultural zones. There are significant differences in agricultural production, income resources, landuse types, and perceptions of the people towards displacement and resettlement in these two locational settings. Few studies have paid attention to the category of people who live in the peri-urban zones of a city or township. These people are being compensated and resettled using the same standard measures as for ordinary rural resettlers and they believe that there is inadequate compensation for their land and other asset losses. This section analyses the impacts of the process of displacement and resettlement on this category of rural resettlers. For this purpose, the peri-urban zone in Kaixian County was selected as a case study area. Section 7.3.1 identifies the particularities of land losses and describes the interaction between production measures and location in the peri-urban areas. In section 7.3.2, the restrictions on compensation for land losses will be discussed. Section 7.3.3 analyses the impacts of such compensation on the migrants.

7.3.1 Land Loss and Economy in the Peri-urban Zone

7.3.1.1 Land loss and people who will be affected

The peri-urban zone of Kaixian includes three towns surrounding the county seat: Fengle, Hanfeng and Zhendong, as Figure 7.5 shows. In this district, the flooding loss will be substantial and the people resettlement task is critical, as shown in Table 7.1. Almost one third of the total land in the county to be inundated is here. The people to be displaced are largely farmers who make up over half of the total migrants in Kaixian. Hanfeng, where the

county seat is situated, will be the largest town to be submerged in this zone, while Fengle will have the highest rates of cultivated land loss and people to be displaced, as shown in table 7.2.

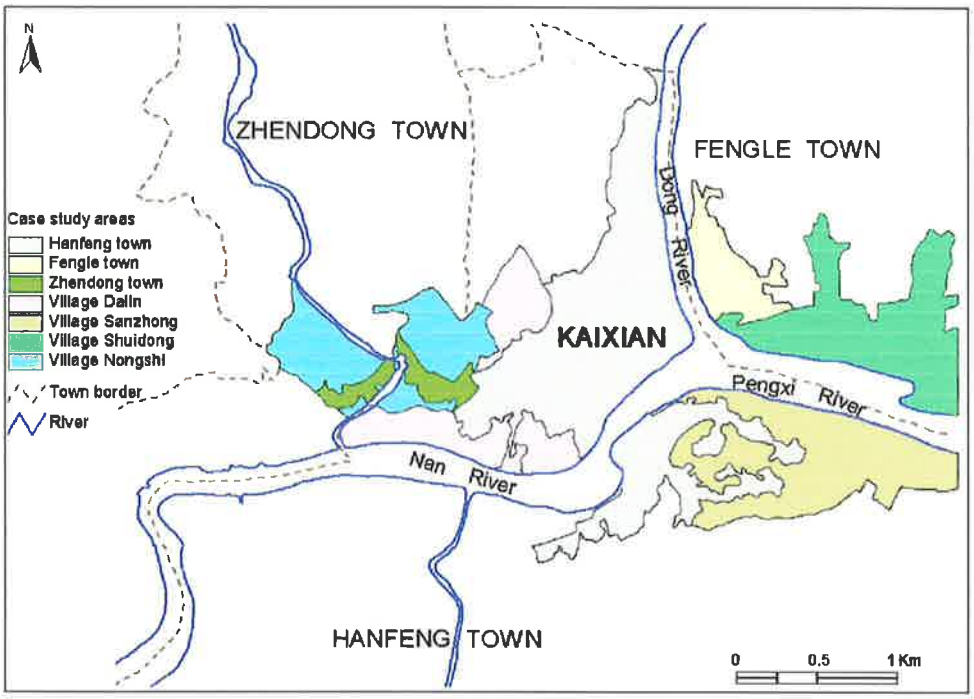


Figure 7. 5 Peri-urban District and Case Study Areas in Kaixian.

Table 7. 1 Inundated land area and population to be displaced in the urban fringe of Kaixian

Flooding status		Fengle (a)	Hanfeng (b)	Zhendong (c)	(a)+(b)+(c)	Total in Kaixian
Cultivated land	ha	365.2	505.4	147.2	1,017.8	3,314.6
	%	11.0	15.2	4.4	30.6	100
Total rural population to be displaced	Persons	13,482	14,423	5,397	33,302	64,889
	%	20.8	22.2	8.3	51.3	100
Farmers	Persons	13,259	13,611	5,084	31,954	63,351
	%	20.9	21.5	8.0	50.4	100

Note: Percentages are with regard to the whole of Kaixian County.
Source: Calculated from: CWRC (2000, p. 10–13).

The peri-urban district has been the most economically advanced in this county. The section to be flooded in Zhendong is the center of agricultural products in the town. In Fengle, secondary industry, both collective and privately-owned enterprises, is the key component of the economy. A number of rural labourers are, in fact, engaged in non-agricultural production, e.g., running businesses and working as construction and transportation workers

and craftsmen. The comparative agricultural productivity is lower than that of the other two towns.

Table 7. 2 Percentages of land loss and migrants within the urban fringe of Kaixian

Flooding status		Fengle	Hanfeng	Zhendong
Cultivated land	ha	824.4	1,341.1	1,099.5
	%	41.4	35.8	11.5
Orchard field	ha	12.0	25.5	18.5
	%	2.5	5.7	7.5
Agricultural production loss	Million *yuan*	23	38.9	21.9
	%	35.1	35.5	29.1
People to be displaced	Persons	13,482	14,423	5,397
	%	51.3	33.3	24.7

Note: Figures and percentages are with regard to each individual town.

Source: Calculated from: CWRC (2000, p. 10–18).

7.3.1.2 Status of land use and land production

The villages selected (Figure 7.5) for the case study are representative of the situations of current landuse in the peri-urban district to be flooded, as shown in Figure 7.6.

Multiple economic productions. The peri-urban district is situated on the narrow plains along the banks of three rivers, Nan, Dong and Pengxi. These plains are suitable for farming with level topography, sufficient water resources, fertile soil, and easy accessibility to markets in the county seat. Cash crop cultivation such as vegetables and fruits (oranges, grapes and strawberries) dominate the agricultural products as indicated in Figure 7.6. According to a 1993 report, potential rural migrants in peri-urban sites had per capita incomes which were 20 per cent higher than the average incomes of peasants in the reservoir area (Liang 1995). In one of the villages in the case study, Shuidong, migrants had an average net income of 1,200 *yuan* per capita. Conversely, host people in the nearby upslope villages, Huangling and Yinxian, designated to be the resettlement communities to receive the migrants from Shuidong, had an income of less than 500 *yuan* per person in 1992 (Li *et al.* 1995). The current income disparities between migrants and the local host people have, in fact, widened.

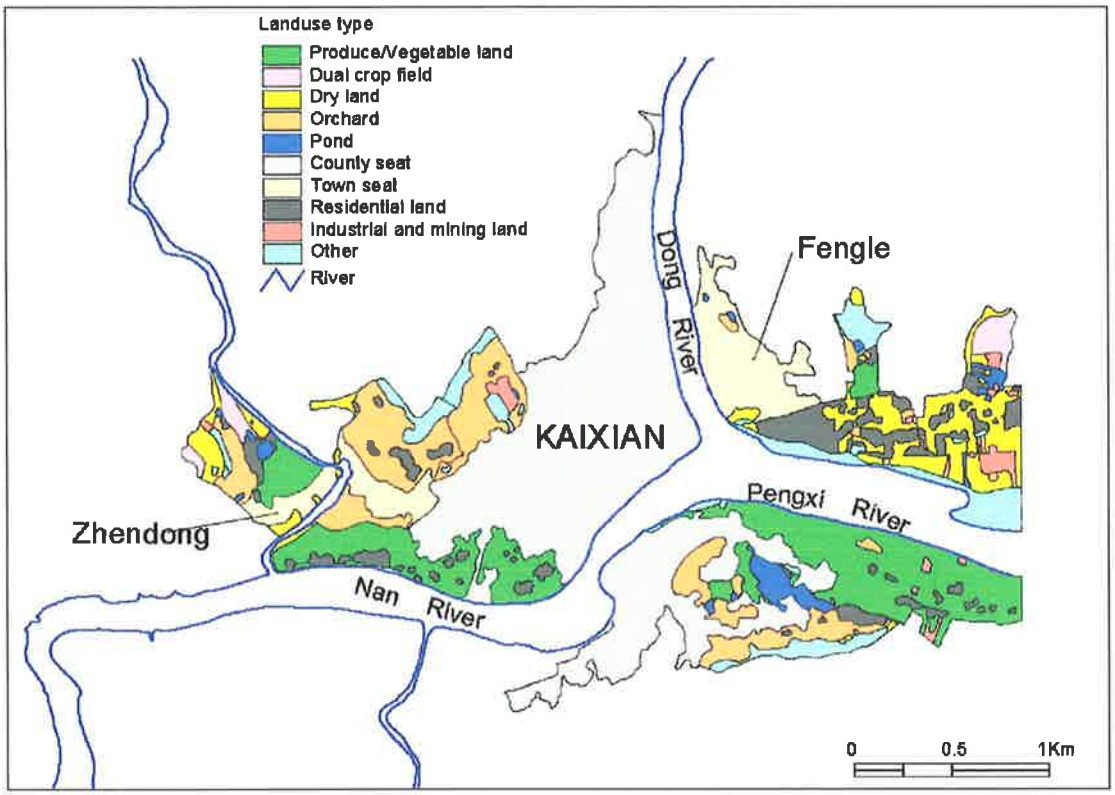


Figure 7. 6 Landuse in the Peri-urban Settings of Kaixian.

Note that the dominant agrarian landuse types are vegetable gardens and orchards.
Source: Redrawn from: Kaixian Land Administrative Bureau (1999).

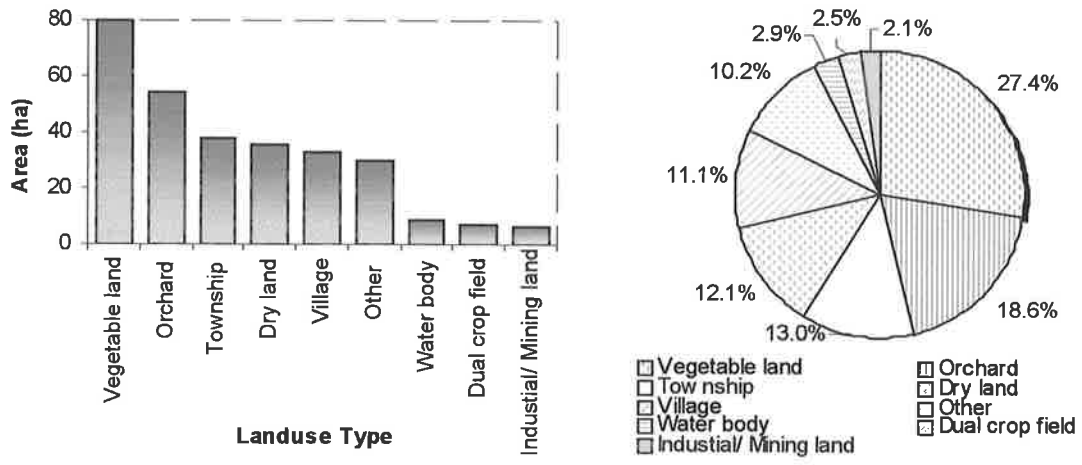
The main economic productions and thus the main income sources presently include:

- commerce/ business (restaurants, shops);
- construction (materials, workers);
- transportation (rickshaw or tricycle, motor-cycle, truck transportation);
- vegetable/fruit cultivation;
- house/store lease (in county and town seats); and
- township-owned enterprises.

Agriculture relies upon natural endowment to a great extent, particularly land resources and geographical location. In peri-urban locations the agricultural structure is more sophisticated and the commercial values of the products are higher than in purely agricultural areas. Due to insufficient farmland and high density of population the surplus labourers engage in hobby farming, businesses, and other non-agricultural professions as transport workers (rickshaw or motorcycle drivers), construction workers and craftsmen. The investigation in Fengle found that one third of the migrants are engaged in commerce and business. Some of them have built or purchased houses in the county or township seat which they lease to others for commercial use. There are over 20,000 construction workers in the new county seat, taking

advantage of the opportunities for employment in project-related lines of work. They are engaged in the construction of transportation routes and new housing and installation of communication infrastructure. These construction workers, mostly carpenters and tilers, are mostly from Fengle. Fengle has the second largest vegetable cultivation base, too, with Hanfeng being the largest. Two of the villages in the case study, Sanzhong and Dalin in Hanfeng, are major vegetable production sites in this peri-urban district. The survey data shows that the annual net income ranges from 4,000–5,000 *yuan* per capita for people running businesses, 3,000–5,000 *yuan* for people engaging in vegetable cultivation, and 7,000–8,000 *yuan* for tilers in the peri-urban areas. It is the advantageous location that has enabled the peri-urban district to develop a multi-facetted and active economy.

Capital and labour-intensive agriculture. In all four villages in the case study, the main agrarian landuse types produce capital-intensive or labour-intensive products: fruits and vegetables as shown in Figure 7.7. These activities require farmers to input more investment in capital, know-how, or labour than are normally necessary to produce grain crops. However, a loss of confidence resulting from the knowledge that they will have to leave the land has directly influenced the level of recent investments. Land is already fully cultivated, with fertile soil and plentiful and cheap irrigation. The substantial capital investment has raised land values. Specific investments made by the migrant-interviewees include the introduction of long-term products such as grapes and oranges, increasing use of organic fertiliser, and the setting up of small and medium sized greenhouses such as those shown in Figure 7.8.



a b

Figure 7. 7 Landuse in the Peri-urban Areas of Kaixian.

Largest portion is agricultural land: vegetable land and orange orchard, followed by non-agricultural land for township construction and rural residential area.

Photo: Yan Tan

Figure 7. 8 Vegetable Base in Shuidong Village, Kaixian.

Shows that migrants have invested much capital and labour to homemade small and medium sized greenhouses.

Free-time agriculture. Farmers in the peri-urban towns are permitted to lease their farmland to other villagers as long as the state grain quota and tax obligations on their contracted land are fulfilled. Some migrant families pay the levied grain ratio in order to lease their land to others, moving from farming to engaging in businesses and other non-agricultural work. But they usually retain their land tenure rights rather than renounce them. In Villager Group 5 (see Note in Table 7.3) of Longshi village, Zhendong, eighty percent of the 200 migrants are engaged in businesses and craftwork. Some migrants are even ignorant of farming. Due to inadequacy of land allotment, farmers cannot be entirely absorbed by agriculture, thereby producing a surplus labour force in the densely populated peri-urban areas. Most migrant respondents state that they do not want to hold much land. They think that 0.02 ha of land per capita is enough to provide for their basic maintenance. This perception of a suitable size for a family land holding is different from that of the migrant households in the purely rural areas, for instance, migrant households in Qukou town. Although grain cropping is not the main income resource for most migrant families, land has played a role, both for the maintenance of basic living and as a form of fundamental security in rural society. Furthermore, there is no land market to transfer land use rights in most counties of China. Consequently, peasants choose farming as a part-time occupation and keep their land use rights.

7.3.2 Inadequate Compensation for Land Loss

7.3.2.1 The value of land

The word 'value' can have many meanings and be used in many different ways (Ring 1970). Practically, compensation will never perfectly indicate the value or worth of land. The factors affecting land values are not easily quantified (Doll *et al.* 1983). But compensation might be able to represent the most probable price or value of land. In western economics, the variables influencing the value of farmland include land earnings or rents (Smith 1952; Clark 1973), asset appreciation and the expectation of inflation (Tostlebe 1957; Grove 1960), technical change and enlargement demand (Reinsel 1973), farm programs (Harriss 1975), financing and taxation (Beneke 1952; Adams 1977). Another insightful perspective on compensation for asset losses suggests that the basis of compensation must not be valued as simply an economic exchange but the totality of the rights that are extinguished or negatively affected by projects (Bartolome *et al.* 2000, p. 30).

The World Bank (1990, 2001a) requires that all affected assets (land and structures) be compensated for at their replacement cost, which is equivalent to the amount required to replace the asset in its existing condition. In line with the Bank's rules, the concept of land has a broad context, covering anything growing on or permanently affixed to land such as crops and buildings. In reality, each value or price of land is different and even similarly situated land may have vastly different current uses and different future use potential. Land should have a different value or price according to its spatial location, soil fertility, human-made fertilities deriving from mechanical and capital investment, water provision, irrigation facilities, and inputs of the live labour force. The compensation for a variety of parcels of land should be different, given the aforementioned determinants.

However, compensation for land in the peri-urban settings is seriously at odds with its value in the reservoir area. Some losses in land are material and thus measurable, and correspondingly can be compensated through disbursing resettlement funds, redistributing farmland, or arranging industrial jobs for the migrants to be affected. Yet there are other types of losses relating to land, non-material or immeasurable, such as the local socio-economic networks, advantageous geographical locations and investment in infrastructure on the land. The Chinese government has adopted a strategy to compensate land losses of migrants which combines compensation in cash (for the attached trees, orchards, bamboos

and other green plants cultivated on land) and in land, provided by the resettlement communities. Still, the cash compensation is inadequate for the agrarian land, especially for land in peri-urban locations. An equivalent quality and location of land in the recipient locations is not always provided.

7.3.2.2 Standard of compensation for land loss

The compensation for the resettlement of the TGP falls into three sections: the production resettlement fund (*shengchan anzhi fei*), livelihood resettlement fund (*shenghuo anzhi fei*), and dwelling reconstruction fund (*fangwu huanjian fei*). This first is a compensation for the land that will be flooded by the reservoir, constituting six categories of land: cultivated land, fruit orchards, forestry land, fishing ponds, residential land, firewood and grass land (CWRC 1997). This compensation is especially provided for the eligible 'productively resettled population'. Arable land comprises of rice paddy, dry land, and vegetable garden. Orchards are listed separately. The compensation standards are based on the quantity and quality of land to be submerged in a given region at county level. The amount of cash compensation for land varies by area and resettlement category, ranging from 6,000 to 8,000 *yuan* per capita. The average compensation for land loss is 7,000 *yuan* per person in the overall reservoir area (CWRC 1994). The production resettlement fund makes up the major share of the whole package of compensation and funds for rural resettlement.

The total compensation for rural resettlement in Kaixian is 540.1697 million *yuan* (as in May 1993), accounting for 15 per cent of the gross compensation for displacement and resettlement in Kaixian. Besides rural resettlement, other resettlement involves removal of urban migrants, relocation of industrial factories and mining enterprises, reconstruction of the new county seat and township settings, and restoration of inundated infrastructure. The compensation for rural land, excluding attached houses, infrastructure, and scattered fruit orchards and trees, is 241.8752 million *yuan*, making up 44.8 per cent of the compensation package for rural resettlement. On average the compensation for land and attached trees and orchards is 52,128 *yuan* per hectare in Kaixian, disregarding the land attributes at different locations between the purely agrarian areas and the peri-urban areas.

A big issue in the compensation for rural land flooding is that it does not differentiate between the population carrying capacity of land in the different rural regions. This indicates

that the compensation does not consider the factors such as the numbers of migrants and locations of land that will be flooded in different counties and different rural settings. Moreover, investment in land is not taken into account in the cash compensation for land loss. Resettlers in peri-urban areas strongly protest against inadequate compensation for their farmland. The losses of this category of rural resettlers living adjacent to urban areas are heavier than in purely agricultural areas further away from county seats. For this group of resettlers, what they will lose is not only tangible assets but also intangible wealth such as important socio-economic losses which could not be quantified in monetary terms. These residents have a variety of potential income resources arising from their advantageous locations, which include stable agricultural product markets and potential employment opportunities. There is only about 0.02 ha of farmland per capita in the villages of the peri-urban towns in the case study. Therefore, in order to engage in high value-added agriculture, the people have invested much capital and labour to enhance the agricultural productivity and land fertility. An average of 90,000–150,000 *yuan*/ha usually has been outlaid to develop big greenhouses for vegetable or fruit production. An average of 15,000 *yuan*/ha for materials such as plastic, seed and fertiliser has been invested to develop small greenhouses for vegetable cultivation. The migrants, as vegetable farmers, strongly condemn as unfair the fact that their land is compensated for by adopting the same criteria as that for grain cropping land.

More importantly, the cash compensation criteria are lower than the standards set forth in the *LAL 1998*, which is a fundamental law setting out the compensation criteria for land and other asset losses. According to the *LAL 1998*, there are specific regulations on land requisition compensation in the 47th Article of Chapter 5. It stipulates that compensation for cultivated land requisition should include three components: compensation for land, fund for resettlement, and compensation for attached assets and green shoots of grain on land. The amount for the first item is 6–10 times the derived land productivity (DLP), which is the average production per hectare in the preceding three years. The amount for the second item is 4–6 times the DLP, subject to a maximum of 15 times the DLP. The combined amount of the former two items is set at a maximum of 30 times the DLP. Unfortunately, when establishing the compensation standard in the early 1990s, 'compensation for land' and 'fund for resettlement' were lumped together. Consequently, the gross compensation for arable land was 40,515 *yuan*/ha, which was only 3.5 times the DLP, and the average compensation for flooded orange orchards was 86,445 *yuan*/ha, a mere 2.3 times.

7.3.2.3 Who should keep the production resettlement fund?

In compliance with the resettlement regulations (SCC 1993, 2001), cash compensation for flooding land is not awarded to migrants but to the recipient communities or individual units, e.g., villages in rural areas and enterprises in a city or a town, which receive migrants.

Rural migrants have less employment security and fewer benefits in their resettlement compared to urban migrants. Most respondents in the case study, when interviewed, replied that migrants themselves should keep the production resettlement fund. They were hoping to make their own decisions on investment plans and production arrangements. Comparatively, the migrants in peri-urban areas have higher education levels, more market-oriented economic views, and more versatile skills than those in purely agrarian areas as a result of frequent interaction with urban society. They hope to hold all the production resettlement compensation and then resettle by themselves. If the migrants cannot get all of their compensation for their land in cash, they alternatively suggest that they could:

1. renounce a part of their land holding rights in their future resettlement receiving locations and in turn, receive a proportion of the production resettlement fund;
2. transfer the agricultural household registration status of aged migrants to urban status;
3. arrange non-agricultural employment for skilled craftsmen;
4. provide preferential provisions and conditions to help migrants re-establish businesses;
5. assist necessary production skills training, especially training in new and relevant skills that are in demand in the regional and local economy in the resettlement sites and facilitating such capacity building, especially amongst women.

7.3.2.4 Impacts of the household responsibility system in rural China on land compensation

The Land Administration Law states that land in urban areas belongs to the State and land in rural areas and in peri-urban areas belongs to the collectives. Article 14 points out that collectively owned land at village level should be allocated to the villagers belonging to the collective, in accordance with the members or participants in the labour force in a family. This egalitarian land distribution is what sets China apart from other developing countries.

The principle of land distribution was derived from collective land ownership, which was established during the 1950s and 1960s, as a result of the centralised and planned socialist economy. Farmland in a village was owned by all of its members collectively. Every member had equal claim on land property rights. Since 1978, the 'Household Responsibility System' (*jiating chengbao zerenzhi*) has been the nationwide statutory pattern for the agricultural land tenure in China, which abandoned collectivisation following its failure (Lin 1992). The modern theory on land states that land ownership is just one of the components of property rights. Other components include the rights to consume, to obtain income from and to alienate assets (Barzel 1989). The ownership of land in rural China is clear but the property rights of farmers are vague. Land is collectively owned by villagers but it is used by farmers individually. In theory, farmers should have an exclusive-use right which should imply the freedom to consume, to obtain income from, and to alienate the right of use at their will. Practically, their rights to consume and to obtain income from land are weakened by the state recruitment system and distorted prices. Furthermore, farmers are usually forbidden to transfer their land use rights. Incomplete land property rights directly affect the benefits of migrants and other farmers. Compensation for land losses is institutionally incomplete and underestimated. Most of all, investment in land is usually excluded from the cash compensation. The collective ownership of land entails that the compensation for land loss is disbursed to the communities that receive migrants at village level. The recipient villages are accountable for land adjustment and allocation to migrants.

7.3.3 Impacts of Compensation for Land on Rural Resettlement

7.3.3.1 Staying in the origin areas

The government's proposed resettlement schemes are out of step with the migrants' preferences. The investigation in village Dalin of Hanfeng finds that nearly two thirds of the 526 migrant households to be displaced would not like to move out until 2008 (see Tables 7.3, 7.4 and 7.5). Over ninety percent of migrant families prefer self-employed resettlement carried out by themselves, staying and living in the new county seat or its outskirts rather than moving out of the county by any other resettlement schemes.

Table 7. 3 Villager groups and migrants surveyed in Dalin village, Kaixian

	Villager Group							
	1	2	3	4	5	6	7	Total
Number of households	107	63	62	89	16	98	91	526
People to be moved out:								
Agricultural population	320	177	149	203	51	324	292	1,516
Non-agricultural population	37	18	42	51	0	8	7	163
Total	357	195	191	254	51	332	299	1,679

Note: An administrative village consists of several villagers' groups, where each group consists of villagers residing in one residential cluster.

Source: The author's survey in Dalin village of Hanfeng town, Kaixian, in collaboration with the Resettlement Office of Hanfeng Town in 2001.

Table 7. 4 Migrant households' preferences for resettlement schemes

Resettlement schemes	Villager Group							
	1	2	3	4	5	6	7	Total
Government-organised distant resettlement (GODR)	0	0	0	0	1	0	1	2
Moving to non-flooded counties in Chongqing	0	2	0	0	0	0	1	3
Living with relatives or friends	2	0	3	3	0	2	1	11
Near resettlement	0	0	2	0	0	0	0	2
Self-employed settlement in new county seat	105	61	55	70	15	96	88	490

Source: The author's survey in Dalin village of Hanfeng town, Kaixian, in collaboration with the Resettlement Office of Hanfeng Town in 2001.

Table 7. 5 Migrant households' preferred year of displacement

Year	Villager Group							
	1	2	3	4	5	6	7	Total
2001	2	1	2	0	0	0	2	7
2002	0	0	1	0	1	1	5	8
2003	0	0	0	0	0	1	0	1
2004	0	3	2	0	0	1	7	13
2005	0	19	6	9	1	4	15	54
2006	3	9	14	3	1	1	12	43
2007	3	5	8	7	0	1	10	34
2008	97	23	29	54	12	88	43	346

Source: The author's survey in Dalin village of Hanfeng town, Kaixian, in collaboration with the Resettlement Office of Hanfeng Town in 2001.

The land-for-land strategy is a significant part of the compensation for land loss. The main strategy applied has been to settle rural migrants in areas uphill at higher elevations. Given the inadequate land potential and the need for environmental sustainability in Kaixian, the

carrying capability of land provided to resettle migrants uphill is insufficient. Under this context, distant resettlement, through which some people should be moved out of their origin counties in the reservoir area and displaced in distant land, is suggested. Most migrants in the peri-urban towns will have to be moved out to Sichuan, a neighbouring province, via the GODR scheme. The key issue of the land-for-land scheme in both the near resettlement and distant resettlement approaches is that land provided by the receiving communities is not equivalent in quality and location of the land in the sending peri-urban districts. Incompatible land provision in distant resettlement is a major factor that restricts the resettlement process of the distant resettlement scheme. For instance, the migrants who were from Fengle and resettled in Zigong and Luzhou prefectures of Sichuan through the GODR scheme in 2001 strongly argue that land in their current resettlement sites is not as fertile as in Fengle. Although they have been resettled in township settings, the towns are far away from county sites or the prefectural capitals. It is a big problem that to date there has been no standard or rules to evaluate the quality and compatibility of land between in the receiving locations and in the sending areas.

7.3.3.2 Delay of displacement

There are 30,287 migrants identified for displacement within the three towns, of which 2,679 were resettled in Deyang prefecture (the trial resettlement location in Sichuan) and other counties in the middle Sichuan basin in 2000–01. The migrants interviewed in the peri-urban areas perceived all the resettlement locations in Sichuan in 2002 as ill-provided resettlement sites with an underdeveloped economy, infertile land and disadvantageous locations. By early 2002, the number of people who voluntarily registered to move out was only 1,532, or 58 per cent of the migrants targeted by the distant resettlement task for 2002. It is notable that among the migrants who registered, 602 selected the scheme of 'Living with Relatives or Friends' (*tou qing kao you*) to move themselves out. In Sanzhong village of Hanfeng, there are 2,007 migrants to be moved out but the number of those who registered voluntarily accounts for less than one percent. In Villager Group 8 of this village, only 6 households among the 147 migrant households registered to move out. Similarly, in Villager Group 7, only 3 of the 110 households registered to move out. Most migrants refuse to accept the resettlement locations in the eastern hilly region of Sichuan. Lack of land of comparable quality and locations of resettlement are the dominant factors resulting in the delay of resettlement. The other reasons giving rise to the migrants' reluctance to relocate include:

1. the migrants' current high standard of living in the peri-urban sites in the existing areas;
2. their self-inflated importance arising from the sacrifices they have made for the progress of the nation, which suggest that they should be provided with the best terms to relocate;
3. ineffective implementation of a less-than-ideal distant resettlement plan coupled with empty and exaggerated promises; and
4. over-optimistic propaganda by the media on the positive and favourable aspects of relocation, resulting in migrants' unrealistic expectations and irrational comparison among migrants.

Of the migrant households investigated, eighty per cent hold two kinds of expectations: (1) similar or better conditions in the resettlement locations as compared to their current locations: close proximity to county seats, convenient access to urban sites, fertile soil suitable for vegetable and/or fruit cultivation, and essential facilities and infrastructure in good condition; and (2) similarly favourable resettlement conditions as in the trial resettlement phase to Sichuan in 2000. During the trial resettlement phase in 2000, migrants were allocated favourable sites in Deyang prefecture, but as more and more favourable locations were taken up, subsequent migrants relocated in 2001–02 were given increasingly less favourable sites. Migrants require the bilateral governments in both the sending and receiving areas to realise the national resettlement policy and promises in agreements before their removal, especially on some major and sensitive issues which relate to the primary benefits of migrants and their posterity, e.g., compensation, resettlement location selections, and land redistribution in their destination communities.

7.4 Conclusion

Land loss in Kaixian is serious but available land to resettle the affected rural residents is scarce. Engineering works on some suitable river sections are able to protect land from being inundated, which would have reduced the number of persons to be displaced. The uncertainty of whether such schemes will be carried out affects the progress of the rural resettlement schemes in the affected areas. The characteristics of land inundation, landuse and production means in the peri-urban areas are different from those in purely agricultural areas.

Compensation for land loss should take into account the intensive investment in farmland, advantageous location and broad income potentials of the more advantageous peri-urban land. An understanding of different groups of migrants under different settings, especially their socio-economic and demographic characteristics, is essential for setting forth compensation standards for land and other asset losses and identifying the most suitable resettlement options for the affected people.

Compensation for the loss of land usually takes the form of a combination of monetary compensation and land-for-land strategy. One of the most intractable problems in rural resettlement has been a fair compensation for land loss both in adequate cash and in provision of land of equivalent quality and locations in any resettlement sites. Inadequate cash compensation for land and lack of land equivalent in quality and location in resettlement sites have hampered the work to move migrants 'out of the way' and to the resettlement sites as quickly and smoothly as planned. Inadequate or inequitable compensation for the dismantling of the existing setup of production and the loss of multi livelihood resources in peri-urban land is a critical issue for the migrants residing in peri-urban districts. Involuntary displacement, especially via the distant resettlement approach, will force migrants to lose their existing social organisation of production, networks of relationships, allocation of resources, and an entire set of rights which are affiliated to their origin land and rarely compensated. Due to increasingly limited availability of cultivated land which is comparable to the quality and locations of the land to be flooded, it is suggested that the loss of agricultural land be compensated with alternative land and/or non-land-based livelihood strategies.

Self-employed resettlement schemes are welcomed and accepted by most migrants in the peri-urban areas. On the one hand, land provision is an option that must be made available to individual migrants that are dependant on the land-based livelihood and production system because it continues to be an all-important sustainable resource for a majority of the people. On the other hand, a majority of the farmers have already had the experience of participating in a wide range of non-farm activities. They often alternate between their normal land-based occupations and temporary non-farming work. Therefore, the transition of the resettlement strategy from land-based agricultural resettlement to partly permit eligible migrants with higher education levels and multiple skills to settle themselves via a voluntary distant resettlement approach, would be a much more suitable means of facilitating rural resettlement.

Chapter Eight

GOVERNMENT-ORGANISED DISTANT RESETTLEMENT

The Chinese government has committed to resettlement as a 'political task' of considerable magnitude. It emphasises 'moving out' and 'resettling stably' as key objectives. The previous approach of local 'near resettlement' uphill from the reservoir has been replaced by alternative to move large numbers of rural migrants out of the reservoir area entirely. The Chongqing reservoir section is a key origin area for 'government-organised distant resettlement' (GODR) scheme. This chapter first argues the necessity of the GODR from the perspectives of land availability, the need for environmental sustainability in the reservoir area, and problems in the existing 'voluntary self distant resettlement' (VSDR) scheme. Section 8.2 maps out the spatial and temporal patterns of distant resettlement in 11 recipient provinces and municipalities in China. The GODR scheme is agriculture or land-based resettlement. Issues on land readjustment in the host communities are analysed and critical problems regarding fair allocation of compensation and funding, social integration, rehabilitation planning, and governmental functions are stressed.

8.1 The Rationale for Government-Organised Distant Resettlement

8.1.1 Present Situation of the TGP

The main course of the Yangtze River was first blocked by a 790 metres long, 60 metres high coffer dam on 8 November 1997, which symbolised the end of the first phase of the dam construction. During the first resettlement stage which ran concurrently with the dam construction phases, a total 103,000 migrants were displaced and resettled. The second phase of the dam construction (1998–2003) comprises the construction of the main dam, permanent ship locks and the installation of the first group of power generation equipment. This phase is the 'key stage' because it faces the greatest challenge during the overall project construction, encountering major technological issues in the construction of the dam and relocating the most people to make way for the reservoir. There had been 248,000 persons displaced, accounting for 21.9% of the total population to be relocated, by the end of July 2000 (Wu 2000). At present, the huge transverse cofferdams on both upstream and downstream have

been erected across the river. On the left side of the river, an initial 14 turbine generator station has been built. At the same time, also on the left bank of the Yangtze, dual line five-level ship locks, 170m in depth and 1.6 km in length, have been constructed through a mountainous area. The targets of TGP construction in the second phase are to fill the reservoir to the 135m water level, to generate electricity with the first group of turbines and to prepare the permanent ship locks for navigation in 2003. In order to probe the experience of rural resettlement, China started a 'trial resettlement' in 1985, lasting for 8 years. However, from the end of 1985 to the end of 1998, the average number of migrants displaced and resettled was less than 3,000 annually. Over the following 10 years beginning 1998, on average some 40,000 people each year will need to be displaced (Wu and Liao 1999).

8.1.2 Lagging Economy in the Reservoir Area

Due to its geographical location, mountainous topography and particular relationship with the TGP, the reservoir region has received little capital investment from the central financial department compared to many other regions in China. Until the late 1980s, few national large-sized construction projects had been planned in the reservoir area due to the possibility and uncertainty of building the Three Gorges dam since the liberation of China in 1949. The statistics show that only 1.8 billion *yuan* was invested in construction in this reservoir area from 1949 to the mid 1980s (Zhu *et al.* 1996). Table 8.1 shows that the economic development level in the Chongqing reservoir section is far lower than the 11 designated resettlement provinces.

8.1.3 Fragile Environment in the Reservoir Area

The Three Gorges reservoir area lies in the lower section of the Yangtze River's upper reaches. The extent of land eroded exceeds sixty per cent of the total terrain in the reservoir area (Du *et al.* 1994, p. 5). The catastrophic flood which occurred in the Yangtze River in the summer of 1998 was the second largest in the 20th century (the largest being in 1954) in the river catchment. Meanwhile, the flood in the Songhua River was the largest in its catchment in the 20th century. According to various provincial statistics, the inundated farmland was 22.3 million ha. The toll of people killed was 4,150. The direct economic loss was 255.1 billion *yuan*. The most serious disasters occurred in Jiangxi, Hubei, Helongjaing, Inner

Table 8.1 Economic status of the 11 provinces receiving TGP migrants in China (2000)

Province/ Municipality	Arable land	GDP								Disposable income of urban households		Net income of rural households	
				Agriculture		Secondary industry		Tertiary industry					
	Per capita (mu)	Per capita (*yuan*)	Order	Per capita (*yuan*)	Order	Per capita (*yuan*)	Order	Per capita (*yuan*)	Order	Per capita (*yuan*)	Order	Per capita (*yuan*)	Order
11 receiving provinces													
Shanghai	0.92	34,547	1	497	31	13,137	1	13,991	1	11,718	1	5,596	1
Jiangsu	1.21	11,773	6	1,386	8	5,964	5	4,189	8	6,800	8	3,595	6
Zhejiang	0.84	13,461	4	1,420	6	6,807	4	4,680	4	9,279	3	4,254	3
Guangdong	0.75	12,885	5	1,157	17	5,634	6	4,390	6	9,761	4	3,654	4
Fujian	0.80	11,601	7	1,845	2	4,930	9	4,518	5	7,432	6	3,230	7
Shandong	1.45	9,555	9	1,397	7	4,675	10	3,337	9	6,490	9	2,659	8
Anhui	1.43	4,867	22	1,223	11	2,166	20	1,687	27	5,294	20	1,935	19
Jiangxi	1.17	4,851	23	1,170	16	1,689	27	1,970	21	5,104	25	2,135	15
Huinan	1.09	5,639	17	1,219	13	2,270	18	2,244	16	6,218	12	2,197	12
Hubei	1.44	7,188	13	1,098	20	3,523	13	2,472	15	5,524	17	2,269	11
Sichuan	1.03	4,784	25	1,135	19	2,042	24	1,638	28	5,894	13	1,892	21
Migrant sending area													
Chongqing	1.02	5,157	19	916	22	2,128	22	2,100	18	6,276	11	1,903	22
In China	1.98	7,078		1,125		3,601		2,351		6,280		2,253	

Source: CNSB (2001).

Mogonia and Jilin provinces (MWR 1999). The environment of the reservoir area has severely deteriorated due to population increase, resource development, land degradation and natural disasters (Du and Yan 1999). Water and soil erosion are the biggest environmental issues in the reservoir area (Jiao 1998). The major threat to the reservoir area arises from the serious water and soil erosion in the upper reaches of the Yangtze. The area suffering erosion in Sichuan province covered scme sixty per cent of the upper reaches of the Yangtze in 1999 (Xie *et al.* 2002). The forest coverage was at its lowest (9%) at the end of 1980s, increasing slightly in the 1990s due to reforestation.

Ecological deterioration has seriously hampered the development in west China. A vicious cycle of poverty and environmental deterioration has confronted the upper reaches of the Yangtze River. Among the affirmed 18 regions which have been stricken by poverty in China, 5 are located in the upper Yangtze, spreading into the mountainous areas: Qinling-Bashan, Wuling, Wumeng, Hengduan and Da-xiao Liangshan. The number of impoverished people amounts to over 20 million, distributed among 82 poverty-stricken counties and making up one third of the poverty-stricken population in China. Particular geographical conditions in the upper catchment of the Yangtze make it difficult to rehabilitate the environment if it is destroyed. The improvement of the eco-environment is the prerequisite to anticipating the socio-economic development in west China. After the disastrous floods in 1981 the central government and Sichuan province have highlighted the significance of protecting the natural forest as means to improve the environment in the upper Yangtze. In 1988, the State Council selected the upper Yangtze basin as one of the national water conservancy areas. In 1989, the construction of shelter-forest was formally initiated in the upper Yangtze. Since September 1998, Sichuan (the pioneer province to implement the 'natural forest protection engineering' nationwide) has stopped logging the natural forest entirely and closed down all the wood exchange markets in the western prefectures of the province.

According to the Chongqing Agricultural Bureau in 1998, 5,333 ha of fertile topsoil were worn away annually from sloping land. Sloping land constitutes 60.6% of the area suffering from soil erosion. Due to the complicated geological conditions in this region, landslides, mudslides, droughts and other natural disasters occur frequently. Some species are on the verge of extinction. Due to rebuilding new cities and towns, water and air pollution in urban reservoir areas have aggravated (Du *et al.* 1994; Chen *et al.* 1995). Little attention has been paid to the interplay between displacement and environment. People displaced uphill can be

forced to over-exploit ecologically fragile land and other natural resources for survival, exacerbating environmental degradation, especially aggravating the soil erosion through developing uncultivated land on steep slopes. There are 2,490 landslides in the reservoir region (Tao and Liu 2002). Some of them (578 landslides) will be submerged by the reservoir. Among the remaining 1,912 landslides, some (617) must be managed through engineering works and some (742) only need to be closely monitored. People living on the other landslides (553) must be moved out (Tao and Liu 2002). Based on the analysis of a geological investigation and examination, 9.8% of the bank of the reservoir will be unstable when the reservoir begins to be filled on 1 June 2003 (Tao and Liu 2002). Urban re-construction aggravates the original pollution and geological disasters such as landslides and rock-mud flows (Gu and Huang 1999). For instance, a landslide occurred in the old county seat of Yunyang on 17 January 2001 (*Guangzhou ribao* 19 January 2001). An earthquake with a magnitude of 4.1 occurred 40km away upstream of the Three Gorges dam on 13 December 2001. Senior Chinese water engineers foresee that the reservoir is likely to induce about 760 locations of potential landslides (Yang 2002).

To prevent new soil erosion, ecological rehabilitation in the reservoir region is urgently required. Soil erosion directly relates to sedimentation of the reservoir and affects the life span of the dam (Lu 1996). According to the study of CAS (GRICAS 2000), among the currently available cultivated land in the reservoir area, steep farmland with gradients of more than 25 degrees makes up 18.6%, or approximately 263,333 ha. In compliance with the Eco-environmental Construction Plan in Chongqing Municipality (CMG 1999a), some 133,333 ha of farmland for cropping, which is about 8 times the area inundated by the reservoir, would be reduced if 50% of the steep land were restored to forest or grassland within 10 years. Exploiting the near resettlement scheme might lead to fast deterioration of the land cover followed by aggravated water and soil problems.

It is worth noting that important measures to address the environmental problems in the Three Gorges reservoir area have been adopted. They include: (1) The government is organising a number of rural migrants to move out through the distant resettlement schemes in order to reduce the pressure on the reservoir area; (2) The country had arranged special funds to comprehensively manage the serious and frequent geological disasters before the reservoir was filled with water in June 2003; and (3) Large scale treatment of contaminated water and rubbish in the reservoir area and in the upper reaches of the Yangtze has been initiated (Zhu 2002).

8.1.4 Land Scarcity in the Reservoir Area

In China, the land feeds nearly 1.3 billion people, who depend on cultivated land of merely 13.54 % of the territory. The per capita arable land area in China is only around 0.1 ha, less than 43% of the world's average (CNSB 2000). Even though the exploitable wasteland which is suitable for agriculture amounts to about 263.3 million ha, quality land is no more than one third of this figure. Moreover, most uncultivated land is distributed mainly in the Northeast and Northwest border regions, with inconvenient transportation, harsh climate, and enormous amounts of investment being required if it were to be reclaimed for resettling TGP migrants.

The reservoir area has been over tilled. Cultivated land per capita is no more than 0.08 ha. Due to land inundation and resumption for cities' and towns' reconstruction, an estimate shows that the amount of cultivated land per capita will be successively reduced at a rate of 0.007 ha every 10 years in the reservoir area (GRICAS 2000).

In the fieldwork, 143 rural migrant households who have been displaced via the NR scheme in Yunyang and Fengdu counties and Wanzhou district were interviewed. Figure 8.1 illustrates the trends of land-holding changes after resettlement. The percentage of households who own 0.5–0.8 of land increased from 25.0% before the displacement to 37.2% after the resettlement. The percentage of households who occupied 1.0–1.5 mu of land decreased from 25.0% before the displacement to 14.0% after the resettlement.

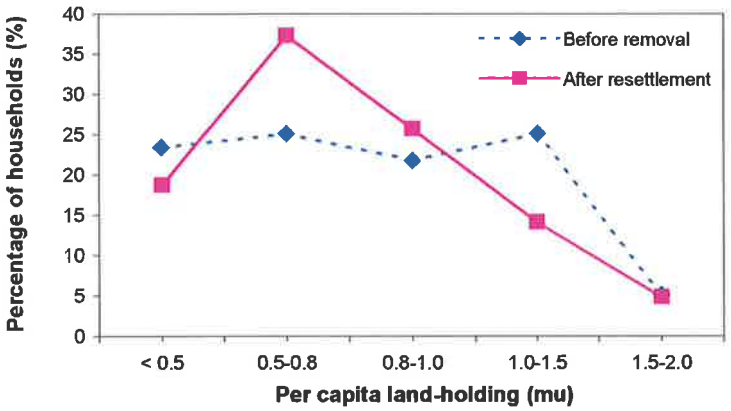


Figure 8. 1 Land-holding of Migrant Households Before and After Resettlement Via Near Resettlement.

Note: 1 ha = 15 *mu*

Source: the author's survey in 2000–01.

The uncultivated land potential in the reservoir region is extremely deficient for dense population occupation and plowing. The proportion of plowed land is 23% on average, with a top range of 60–80% in some areas. Over 70 percent of the farmland in the reservoir area is 'uphill', of which a quarter is located on slopes with a gradient of 25 degrees or more. Nevertheless, 83,033 ha of cropping land on steep slopes of more than 25 degrees are in need of being restored to forest or grassland (Zhang and Xu 1997). The undeveloped land and grassland intended to be reclaimed are only 19,660 ha, or 0.4% of the total land resource. It is impossible to provide all the migrants with equivalent land if they were to be resettled locally.

Another barrier to uphill resettlement is the limited carrying capacity which exists in that area, especially in the seven counties: Zigui, Badong, Wushan, Fengjie, Yunyang, Kaixian and Zhongxian, as shown in Figure 8.2. The total farmland to be inundated in this region will be 26,000 ha and the estimated total number of rural dwellers to be displaced as a result will be over 421,000. It is estimated that around 22,667 ha of arable land and orchard fields needs to be cultivated to accommodate this group. To do this will involve developing uncultivated land uphill, creating terraced land on slopes of less than 25 degrees, readjusting contract land from host communities and providing farmland protection engineering in some areas. This farmland could receive 340,000 rural migrants based on the guideline of 0.067 ha of farmland per capita, which the government has promised to the migrants. However, the farmland to be flooded is much more fertile and more easily cultivated than the newly reclaimed land uphill which generally has steep gradients.

This is especially difficult in five counties – Wushan, Fengjie, Yunyang, Kaixian, and Zongxian – situated in the lower reservoir section of Chongqing. The rural migrants to be displaced there amount to 223,000 and the farmland to be inundated is 14,333 ha. Yet the land available for resettlement is only 8,867 ha so that at least one third of the people displaced cannot be resettled locally due to land deficiency. A total of 330 million *yuan* has been invested in reclaiming uncultivated land since the early 1990s. As a result, 10,000 ha of newly developed farmland has been provided. But more than half of the newly developed land is located on slopes of more than 25 degrees (Wu 1999).

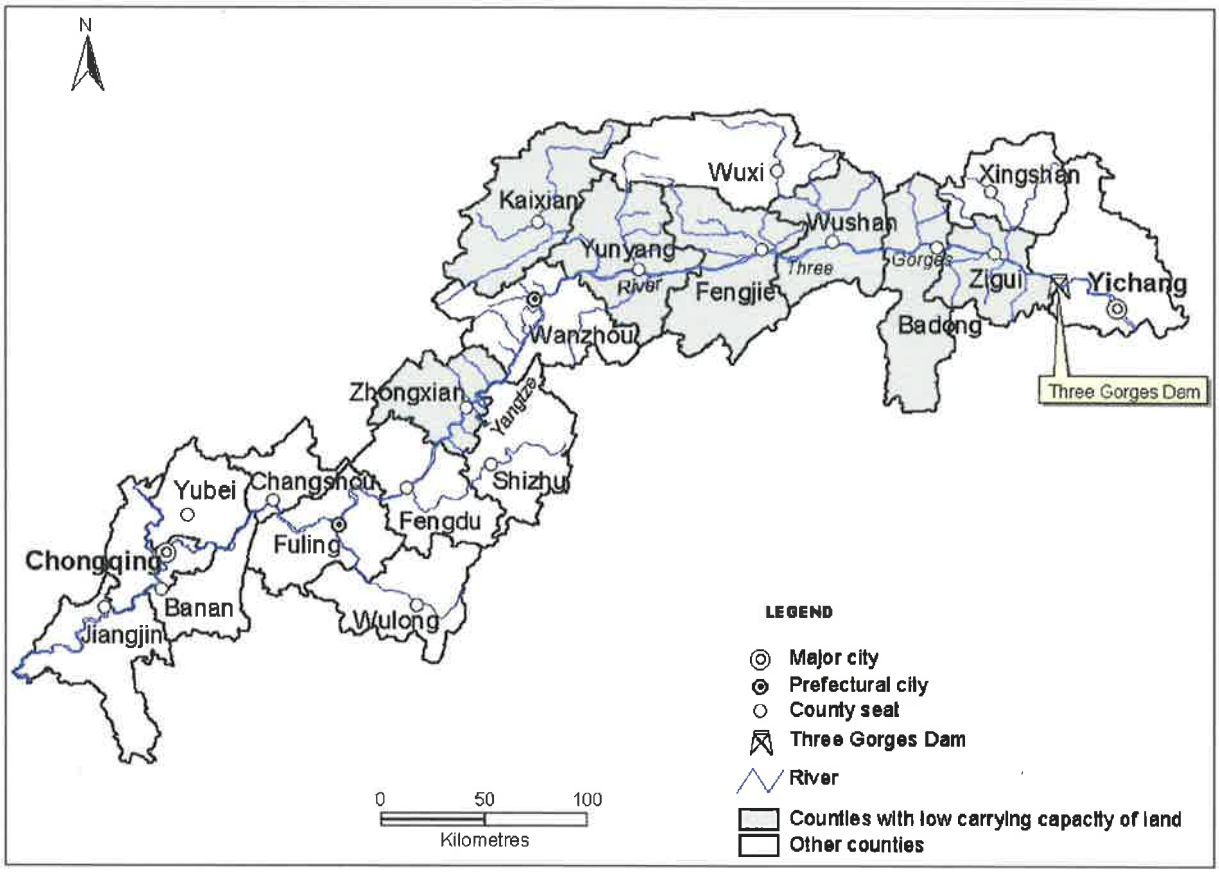


Figure 8. 2 Counties with Severely Deficient Land in the Three Gorges Reservoir Area.

8.1.5 Problems Encountered in the Voluntary Self Distant Resettlement

There are 15,898 displaced rural people mostly from Yunyang, Wushan, Fengjie and Kaixian counties in the Chongqing reservoir area, who have moved to Yichang and Jinzhou cities in Hubei and other provinces. This spontaneous mobility to locations beyond the reservoir area occurred prior to the development of a national policy on distant resettlement on 26 January 2000 (TGPCC 2000a). However, these displaced migrants have suffered much stress owing to a lack of adequate compensation for their losses in being displaced.

The average compensation and funding provided to a rural migrant who is required to be moved out of the reservoir area is some 30,000 *yuan* (TGPCC 2000b). Displaced persons are required to discuss and sign agreements with the receiving county government (TGPCC 2000a). However in practice, the migrants negotiate the provisions of their resettlement locations, contract for rebuilding houses and transfer of *hukou* with town/township authorities. The migrants usually are allocated land to build houses and transfer their household registration for less than the compensation figure and the surplus from the

compensation is retained by migrants. A Distant Resettlement Division of Chongqing Resettlement Bureau official explained that 'each migrant displaced by this scheme has kept 4,000–6,000 *yuan* from the production resettlement fund, which was intended to be given to the host communities in the destination provinces for land supply, infrastructure and service access.' The governments in distant resettlement locations are now requiring the migrants to hand over the funding to the receiving communities.

The land provided in some receiving locations is not adequate for migrants to restore their agricultural production to pre-movement levels as the land is more often than not infertile or subject to frequent floods or droughts. However, the migrants would still accept it so that they can obtain the required 'three certificates' from the local official departments in the destination areas.

Some migrants have obtained compensation and funding from the VSDR scheme, but have actually remained in the reservoir area and worked in non-agricultural jobs as construction workers created by the dam construction, or live on the compensation, becoming 'pseudo' migrants. Some have no jobs and unclear intentions. It is difficult to arrive at an accurate figure for this group but they exist and potentially place stress on the resettlement institutions in the reservoir area.

Generally, resettlers under the VSDR approach (implemented in 1997–99) have not been granted preferential status in their distant resettlement, unlike their counterparts under the GODR. In 1999 the All-Chinese Taxation Bureau issued a '*Notice about Relevant Taxation for Rural Migrants Displaced by Distant Resettlement Schemes in the Three Gorges Reservoir Area*' (governmental document No. 845 [1999]). The people relocated in 2000–02 under the GODR scheme enjoy three-years' tax exemption for agricultural products, house reconstruction funding and taxation reduction during the transition period of resettlement. Migrant families had to pay an extra amount for transportation fee because they had no funding for long distance transportation. They have to pay a high charge to transfer their residence registration from their origin areas to the destination regions. Those displaced under the VSDR approach have not been assigned a subsidy for livelihood restoration during the transition period after resettlement.

A range of other problems include: a lack of economic and technical support in the host communities to help the relocatees restore production; no farmland being made available to

them and no non-agricultural job opportunities in most of the resettlement locations; difficulties in assimilating into and building new social ties in the host communities; resettlement locations often being ill-equipped to cope with the influx of new arrivals; social instabilities in the host communities arising from clashes between the local authorities and/or the host people and the resettlers, who view themselves as being disadvantaged and not receiving due recognition for their sacrifices.

8.1.6 Lessons from Past Distant Resettlement

The resettlement authorities and planners of the TGP prefer to resettle migrants in the near areas of the original abode. They understand that migrants via the distant resettlement scheme usually experience more physical, psychological, socio-economic and cultural stress in the resettlement locations than in the local reservoir areas. Conflicts will be unavoidable between the migrants and the host people, especially over farm land, house-building plots and infrastructure services. Migrants settled far away try by every possible means to return to the reservoir area once they are treated unfairly or they perceived themselves as being treated unjustly in the distant recipient locations. To resettle these reverse-flow migrants from distant resettlement sites, the governments, especially local government and relocation authorities had to invest substantial funding, labour and effort. Another concern addressed by the local governments is that moving migrants away from the sending counties will result in dual losses: resettlement funds and human capital, especially young labour. Therefore, settling migrants in local areas has been regarded as a better way of reducing displacement costs, retaining more resettlement funding and avoiding many troubles in the actual resettlement operations.

Displacing migrants to the regions (in the middle and downstream catchments of the Yangtze which benefit from the TGP construction and are economically developed provinces) is an initial consideration of the GODR approach. Kang Weiming, a famous expert on population resettlement in China, once proposed introducing market mechanisms into the resettlement schemes (Xia 1996). The nationwide 'partnership assistance' to the reservoir area has played a part in the TGP resettlement. However, its roles are limited. Issues on equality and justice of social and economic development between the reservoir area and beneficial regions of the TGP are acute in the entire process of TGP resettlement.

Before designating resettlement tasks to the recipient provinces, the TGPCC had required the CWRC to conduct investigations of important aspects, such as the scale and scope of people to be moved out, the state of affairs in host provinces, principles of distant resettlement, compensation standards and allocation ratio. The main principles for determining the receiving provinces are: (1) provinces which receive benefit from the TGP construction. These provinces include Hubei, Hunan, Jiangxi, Anhui and Jiangsu; and (2) the comparatively developed provinces, which include Shanghai, Zhejiang, Guangdong, Fujian, and Shandong. The beneficiary regions are expecting to obtain cheap hydro-generated electricity from the project and have a safer production environment as a result of improved flood control along the middle and lower Yangtze. Sichuan is an exception. The only consideration in assigning Sichuan the resettlement task is the specific relations between the people in the reservoir area and in Sichuan. People in Sichuan and in the reservoir area share similar culture, language, life style, and agricultural production measures.

In the process of reform over the past two decades, the disparity of socio-economic development between the western and the eastern sections of China has widened. The level of economic development in west China lags behind that of east China. From 1978 to 1998, the average annual GDP increased by 12.8% and 8.7% in east China and west China respectively. As for the national economic capacity, the eastern regions made a contribution of 50.1% of the GDP in 1978 and 58.3% in 1998, but west China accounted for only 16.7% and 13.8% respectively over the same period. The difference in the proportion in the national GDP expanded from 1.9 times in 1978 to 2.34 times in 1998. The income disparity of farmers was 1.39 times higher in the eastern regions than in the western regions in 1980, expanding to about 3 times in 1998.

Before a 'resettlement trial' of the GODR scheme was initiated in 2000, a small number of resettlers in the Chonqing reservoir section had in fact been moved out through different ways organised by the local government, to gain an appropriate model for distant resettlement. In 1997–98, the SPRO undertook a resettlement planning for Nongjiao town in Yunyang County. In the final planning report, it was suggested that 350 rural migrants in this town must be moved out of the county and resettled in Youxi town of Jiangjin County within Chongqing. The Chongqing Municipal Resettlement Bureau carried out this plan, which was the earliest plan to move out rural migrants under the organisation of the government.

Another experimental distant resettlement was to move 800 migrants out of the Chongqing reservoir area and resettled them in a state-owned farm in Xinjiang Uighur Autonomous Region in western China, but it proved to be a failure. The nature of this distant resettlement is an 'export of labour services'. Over three quarters of these resettlers have returned to their origin counties in the reservoir area. When the migrants came to Xinjiang, they found conditions there extremely dry and hot. There are big differences in production means and lifestyle between in Xinjiang and in their hometown. They had a strong feeling of being abandoned in a desert and inhospitable environment. They also felt anxious at being caught in the ethnic conflict between the Han Chinese and the local *Uighur* nationality. The local governments in the reservoir area had to resettle these returned migrants.

8.2 Nature of the 'Government-Organised Distant Resettlement'

8.2.1 Scale

Generally, the GODR approach includes two schemes: moving rural migrant households out of the reservoir area to (i) 11 nominated provinces or municipalities, which will benefit from the services (flood prevention, electricity generation and navigation) provided by the project and economically developed areas on the east coast and in the middle and downstream areas of the Yangtze River basin (Figure 8.3) and (ii) other non-flooded counties in the reservoir area.

Some 25,000 migrants in Zigui, Badong counties in Hubei province will be resettled in the province by the latter scheme, over 10,000 of whom have already been displaced. The major component of the GODR approach is to move out 100,000 rural dwellers from the five counties, as shown in Table 8.2. Some 20,000 rural migrants will be resettled by scheme (ii), and 70,000 rural migrants will be displaced via scheme (i). Another 10,000 migrants are intended to be resettled by the VSDR scheme (Guo 1999).

The GODR includes two phases: trial resettlement of a small number of displaced persons followed by full-scale resettlement of the remainder. The first stage involving 7,139 displaced persons and 11 recipient provinces was completed in 2000. The second stage started in September 2000 and lasted until the end of 2002, as shown in Table 8.3. Figure 8.4 shows the numbers of persons to be moved out each year from 2000 to 2002.

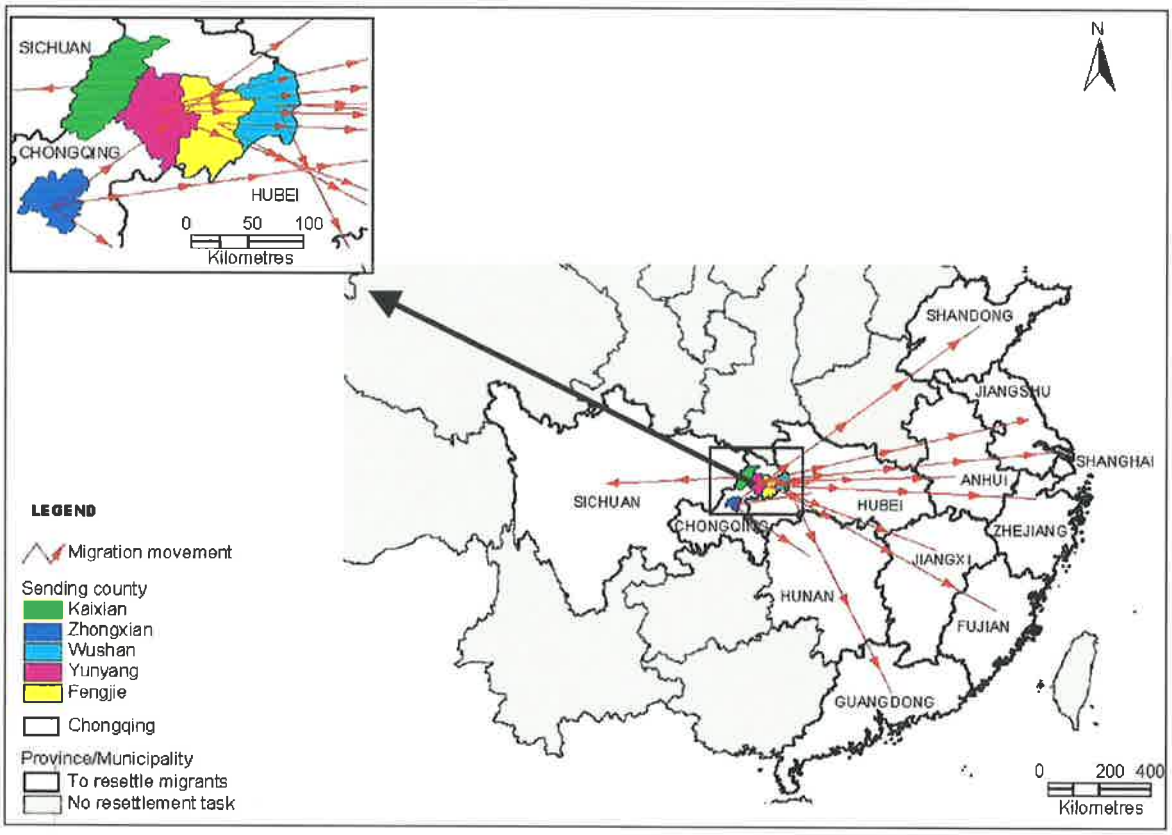


Figure 8. 3 Origin Counties and 11 Destination Provinces/Municipalities (2000–02).

Table 8.2 Distribution of the 100,000 rural dwellers to be moved out from the Chongqing reservoir section via distant resettlement schemes in 2000–02

Origin County	Number of Migrants to Move out	Out of Chongqing		Within Chongqing		Via VSDR Scheme
		Destination provinces	No. of migrants to move	County/City	No. of migrants to receive	
Wushan	17,000	Guangdong	7,000	Liangping	3,000	500
		Anhui	5,000			
		Hubei	1,500			
Fengjie	17,000	Zhejiang	7,000	Dianjiang	3,000	0
		Fujian	5,500			
		Hubei	1,500			
Yunyang	36,000	Shanghai	5,500	Tongliang	5,000	6,000
		Jiangsu	7,000			
		Jiangxi	5,000	Jiangjin	5,000	
		Hubei	2,500			
Kaixian	11,000	Sichuan	9,000		0	2,000
Zhongxian	19,000	Shandong	7,000	Hechuan	4,000	1,500
		Hunan	5,000			
		Hubei	1,500			
TOTAL	**100,000**	**11 provinces**	**70,000**	**5 counties/cities**	**20,000**	**10,000**

Source: Adapted from CRB (2000).

Table 8. 3 Resettlement task and completion of GODR

Destination province	Resettlement task	Number of migrants displaced (people/household)			Total
	In2000-02	In 2000	In 2001	In 2002	
Shanghai	5,500	639/150	3,007/706	1,859/448	5,505/1304
Jiangsu	7,000	810/138	4,312/955	2,155/500	7,277/1,593
Zhejiang	7,000	620/142	4,488/1017	1,893/412	7,001/1,571
Anhui	5,000	625/151	3,560/808	821/196	5,006/1,155
Shandong	7,000	612/150	4,090/983	2,335/569	7,043/1,749
Hubei	7,000	488/125	5,389/1,150	1,213/266	7,090/1,541
Hunan	5,000	699/182	3,064/722	1,283/316	5,046/1,220
Jiangxi	5,000	806/185	3,467/798	7,38/178	5,011/1,161
Fujian	5,500	603/139	3,067/678	1,887/405	5,557/1,222
Guangdong	7,000	606/157	3,614/1,020	2,782/808	7,002/1,985
Sichuan	9,000	631/153	5,820/1,492	2,818/811	9,269/2,456
TOTAL	**70,000**	**7,139/1,672**	**4,3884/10,376**	**19,784/4,909**	**70,807/16,957**

Sources: Compiled from TGPCC (2000c); CRB (2001, 2002).

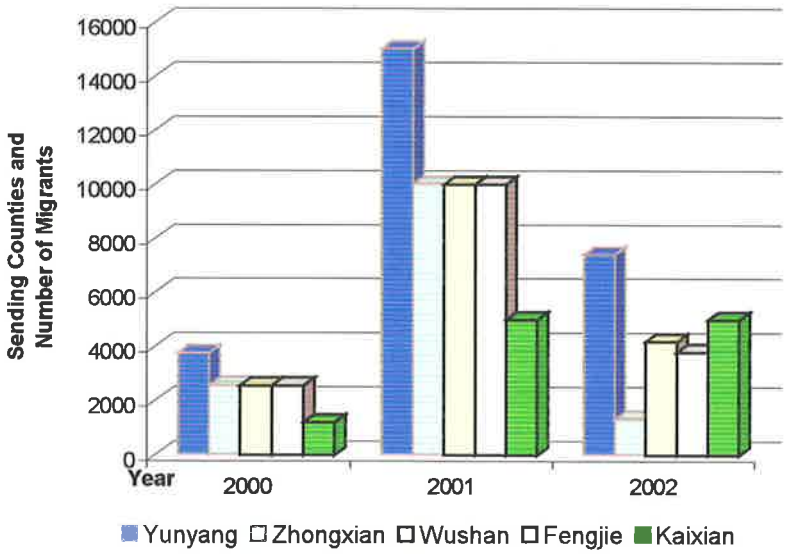


Figure 8. 4 Annual Task Sending Out Migrants Via Distant Resettlement Schemes (2000 – 02).
Source: Adapted from CRB (2000).

The removal procedure involves a series of steps. The first step is that resettlement institutions at county, township and village level in the sending areas organise a delegation to visit the distant resettlement locations. The authorities in the sending and receiving counties will sign agreements on transferring the residence registration of migrant households and allocating land to migrants in the host communities. The second step involves the recipient communities allocating land to migrants for house building. Housing construction then begins along with purchase of available existing houses. 'Entrusting construction' (*weituo jianfang*), 'collective construction' (*jiti lian jian*), and 'independent construction' (*zi jian*) are the three

main methods for migrants to rebuild houses in the recipient communities. The local government is responsible for recommending quality construction units to migrants, inspecting and monitoring the process and quality of the housing construction. 'Entrusting construction' is a method where migrants negotiate the price of construction with the constructors to formulate a contract on house rebuilding. 'Collective construction' is for a group of migrant households to voluntarily get together and build their houses, through which they could share a low cost of construction. 'Independent construction' is for migrants to build the houses by themselves. House-building usually takes 4 months or longer. The final step is to move the displaced households out of the reservoir area to the distant resettlement locations and to redistribute farmland to them.

8.2.2 Eligibility

For 'affiliated migrant family members' (*shuiqian renkou*), there are some criteria to fulfil in determining whether they can move out with their families. Two categories of affiliated members are eligible. One is direct kinfolk: a spouse who used to work as an urban resident but now is retired and the aged who can no longer work as labourers and whose residence registrations are beyond the reservoir area. This group of affiliated migrants is entitled to the same right as normal migrants to transfer their residence registrations to host communities. However, they will not be treated as 'productively resettled population', and hence will lose land and cannot receive subsidies and funding for living restoration, housing and agricultural land (Qi 2000). The other group involves the migrants' children. According to earlier resettlement policy, a second child over the age of 7 years, born before 1992 and whose parents were fined for his birth (as being more than that stipulated in the national one-child family planning policy) could get compensation. A third child who is over 14 years of age, born before 1992 and whose parents had paid the penalty can also receive compensation. However, any additional children born in violation of the family planning policy after 1992 will not be treated as migrants. To motivate more migrants to move out of the reservoir area in October 2001 the TGP Construction Commission stipulated that migrant families with less than four children would be treated as eligible households and displaced through distant resettlement schemes.

Table 8.4 shows that more than sixty per cent of the migrant households have three or more members. This is generally due to the fact that most rural households in the reservoir area

have more than one child despite the government policy. This will result in a greater number of migrants than was originally estimated and place more pressure on land and resources in the destination areas.

Table 8. 4 Number of family members in migrant households

Number of Family Members	Migrant Households Resettled in Deyang, Sichuan in 2000		Migrant Households to be Displaced in 2001 – 02	
	Responses	Percentage of responses (%)	Responses	Percentage of responses (%)
2	1	1.4	0.9	0.9
3	16	22.9	19	18.3
4	29	41.4	43	41.4
5	13	18.6	21	20.2
6	7	10	10	9.6
7	0	0	6	5.8
8	3	4.3	3	2.9
> 8	1	1.4	1	0.9
TOTEL	**70**	**100.0**	**104**	**100.0**

Source: Survey 2001.

8.2.3 Criteria for Selecting Resettlement Locations

To ensure that the process of distant resettlement proceeds smoothly the TGP Construction Committee sets out five criteria for selecting resettlement locations: physical environment, transportation and infrastructure; abundant farmland; higher economic development level; strong leadership at the village and villagers' group level; and sound folklore and traditions. In addition, it also requires that the conditions of all resettlement locations within a province/municipality be similar for both resettlement exercises – the trial resettlement in 2000 and the massive resettlement in 2001–02. Nevertheless, the main issue in location selection is that the high expectations and demands of migrants are often not met, due to unsatisfactory geographical locations and the underdeveloped state of the economy in some destination provinces. The migrants had hoped to select their resettlement locations but their choices are actually quite restricted. They generally prefer rebuilding their houses in urban or peri-urban settings rather than in rural sites. Issues relating to land, infrastructure, social security, and potential benefit conflicts between migrants and host people are often unavoidable.

8.2.4 Agriculture or Land-Based Resettlement

The goals of distant resettlement are to allow the displaced people to maintain their previous living standard and to enable the migrants to be economically and socially integrated into host communities. For the majority of peasants or migrants, farmland provides not only a basic income but also security (Tuan 1970). The main principle for distributing land to migrants is to ensure that each migrant has a landholding no less than the average for the host people. Ensuring fairness to the people displaced is difficult since the quality and quantity of the allocated land has to be taken into consideration. The approaches involved are:

1. Breaking down the original land allotment system in a village and redistributing land to every host and migrant household in terms of the current total population (including the migrants);
2. Readjusting the original land relationship of the host residents slightly by allocating a part of the land collected from the host peasants to the migrants;
3. Using a part of the retained land which has been put aside by the community in a host village for emergency use as contract land for migrants; and
4. Adjusting farmland from the state-owned farms and allocating them to the migrants.

Both 'minor readjustments' (acquiring a part of the land from some of the host people) and 'major readjustments' (complete redistribution of the land in the affected villages) are difficult to implement. Most recipient provinces like Sichuan, Jiangsu, Jiangxi, Shandong, Fujian and Guangdong have adopted an approach that is a combination of both. Of the 57 host families interviewed in Deyang, Sichuan, 31.6% experienced land readjustment. But the scale of land readjusted was small. The survey found that the land of two thirds of the host families had been adjusted by only 0.007 ha, and ninety percent of them had voluntarily turned over a portion of their land to migrants. In the massive distant resettlement in 2001–02, readjusting land at a large scale was unavoidable and became very difficult and the compensation for the host households is a sensitive issue in distant resettlement.

Anhui and Hubei provinces have adopted the approach of allocating land from state-owned farms to the newcomers. In Anhui, the province pays the land requisition fee to acquire use of state-owned farms (APRB 2000). All the migrants still engage in agricultural production, rather than becoming farm workers. In Hubei, two state-owned farms, Chaofuhu in Yichang

city and Taihugang in Jinzhou city, were selected as trial resettlement locations. By September 2000, 44 households of 188 migrants from Zhongxian County had been resettled on the Taihugang farm and 81 households of 300 migrants from Wushan and Yunyang counties were resettled in the Chaofuhu farm (HRB 2000).

Land allotment and house building are important initial priorities during displacement. Allocating land to the displaced would tie them to the land, and in turn help to restore their livelihoods and agricultural production, thus achieving social stability in both the distant resettlement communities and the reservoir area. The rationale of the GODR approach is based on the following considerations:

1. In the rural society and rural areas in China, land is the fundamental form of security because there is no social security system.
2. Engaging in agriculture is a safe occupation that the peasants have been employed in for thousands of years.
3. If the peasants enter a city or town to engage in industrial or services work, they must learn new knowledge and skills.
4. Most rural migrants have low levels of education.

There are some differences between agricultural production in the sending and recipient regions. The reservoir area is mountainous. Migrants used to plant corn, wheat, sweet potato, other crops growing on dry land, and fruits such as citrus especially oranges. However, in the eastern coastal provinces or municipalities and in the provinces situated in the middle and downstream catchment of the Yangtze River, local inhabitants grow mainly rice, cotton and rape. The cultivation systems, methods, techniques and farming tools are quite different.

Accordingly a number of strategies to assist the migrants in adapting to their new environment at the resettlement destination have been developed. One successful trial is the development of vegetable cultivation by 182 households resettled in Chenzhou city of Hunan province (HPG 2000). These migrants originally resided in Zhongxian County and used to plant vegetables. The newly formed migrant community, Nongtan new village, in Tangxi township of Chenzhou, is becoming a regional vegetable production base. Jingan County in Jiangxi province supports the migrants in their development of fruit production, which make use of the skills of the migrants who specialised in fruit planting. In Deyang of Sichuan province, a new migrant village – with hot springs and surrounded by some 33.3 ha of

bamboo field – has been designated to become a local summer resort. Development in local tourism may pave a way for migrants to generate sustainable income (ROMC 2000).

Unconditional allocation of housing-plot land and contract land for agricultural use is a fundamental resettlement principle to ensure a smooth resettlement and stability in the host communities and reservoir area. Although most migrants would like to be registered as having urban status, taking advantage of distant resettlement to obtain a direct transformation from rural residence registration to urban status in any distant resettlement region is strictly forbidden (TGPCC 2000a). Some of them tried to obtain urban residence status by building their houses in urban settings or on city outskirts, running businesses in a city or town, engaging in non-agricultural work as floating workers, but they are all regarded as rural residence status holders. After a transition period or several years later, if these migrants who are resettled in towns or suburbs wish to claim non-agricultural residence status or engage in self-employed occupations, they will be subjected to the same rules as the original residents.

8.2.5 Concentrated and Scattered Resettlement Models

Chinese rural communities have a long history characterised by stability, strong kinship linkages and a unique and exclusive culture (Fei 1985). The farther the migrants are displaced, the greater the risk of losing this social capital. If loosely knit migrants were resettled as a big group, they might keep to themselves and not merge quickly into the local socio-economic environment. Moreover, certain mindsets of the relocated persons can be difficult to change. They either think they may be discriminated against, as 'We are migrants and our posterity will forever be migrants', or at the other extreme, they consider themselves to be 'a special group of citizens', as some of them revealed when interviewed in 2001.

The distance of relocation and differences in cultural background have significant impacts. Distant-resettled migrants often have to pay a high social price and go through a process of 'social integration' to fit into the host communities. Compared to the scattered resettlement, it is much easier for migrants of concentrated resettlement (in which migrants from the same origin area build their houses in a cluster) to maintain established relationships. Resettlers can provide support and assistance to each other for mutual benefit. However, this may impede their integration into the local community. Having lost social networks and social capital, individual migrants and their households are encouraged or forced by circumstances to

integrate themselves into host communities. To ensure social stability, the migrants are sparsely resettled in a recipient community and far away from the capital city of a prefecture or province. Sparsely resettling the relocatees benefits both the host community and the migrants, in that the host community can be relieved of the fiscal burden to greatly increase infrastructure for large numbers of new arrivals, and at the same time, the displaced persons are encouraged to integrate themselves into the local community rather than congregate into distinct migrant groups. This resettlement pattern, termed 'inserting flowers sparsely' (*fensan chahua*) or 'scattered resettlement', is widely adopted in massive distant resettlement. Resettling 5–10 households in a location is suggested to be an appropriate spatial scale in most locations. However, migrants prefer to be resettled in larger centralised groups, as shown in Table 8.5.

Table 8. 5 Which resettlement pattern do you like?

Resettlement Pattern (No. of households)	Migrant Households Resettled in Deyang, Sichuan in 2000		Migrant Households to be Displaced in 2001 – 02	
	Responses	Percentage of responses (%)	Responses	Percentage of responses (%)
Larger group (> 10)	35	49.3	94	90.4
Small group (5 – 10)	30	42.2	8	7.7
Exclusive family (<5)	6	8.5	2	1.9
TOTAL	**71**	**100.0**	**104**	**100.0**

Source: Survey 2001.

8.3 Distant Resettlement Issues

8.3.1 Compensation and Funding

According to the resettlement *Regulations*, 'special funding' will be provided for displaced rural residents. It aims to benefit the people displaced and the communities affected by the dam, by setting aside some of the profits from each kilo-watt hour of electricity generated by the dam project, starting 2003. The distant resettlement compensation and funding, some 30,000 *yuan* for each person who moved out of the reservoir area, is a part of the TGP resettlement budget.

Inadequate compensation occurred mainly in the 'responsibility system of resettlement funding' (*yimin jingfei baogan zhi*) for the TGP resettlement. The total static investment of the TGP is estimated to be 90 billion *yuan* or US$10.84 billion (rate as in 1993), which changes dynamically every year. The state distributed the compensation and funds to Hubei Province and Chongqing Municipality, which then allocate them to each county and city affected by the TGP within the reservoir area. The quota of the compensation and funds allocated at the provincial and county level could never be exceeded. The quota, together with the resettlement task, forms 'the responsibility system of resettlement funding'.

Compensation provides the primary financial means for migrants to replace the tools of production, rebuild or purchase houses, and re-establish their livelihoods. The survey revealed that 61.8% of respondents ranked compensation as of 'pre-eminent importance', while 31.4% responses viewed it as of 'great importance'. The other items such as houses, children's education, contract land and infrastructure, which the migrants are most concerned about, are closely related to compensation.

There may exist great compensation differences among migrant households as a result of differences in each household's economic background, original housing areas, structures and building materials of the houses. There are several reasons why rural migrants could receive a low level of compensation. Firstly, the reservoir area has been a poverty-stricken region, with a backward economy and closed society. Secondly, migrant households who built new houses below the 175m flooding baseline after 4 April 1992 cannot receive compensation. Thirdly, some problems arise from the inappropriate assessment of housing structures. The survey found that over fifty per cent of the houses of rural migrant households eligible for compensation are of earth or earth-wood structure. Taking Kaixian County as an example, the compensation standard for housing has been set up into three classes and two types. The compensation set for rural migrants is much lower than that for urban dwellers: 51 *yuan*'s difference for main buildings and 24 *yuan*'s difference for out-buildings (KG 2000). About sixty per cent of migrant households had a living area of less than $20m^2$ per capita, and over 95 per cent of the households had less than $40m^2$ of living space per person prior to displacement. In the reservoir area, some resettlement authorities organise staff to assess housing areas before the migrants' removal, meaning to compensate the migrants fairly and accurately. The newly measured housing areas are compared against the original figures recorded by the CWRC in 1992. If the new measurements are larger than the original records, the compensated housing area will be calculated in terms of the CWRC's records. Otherwise,

the compensation on housing will be calculated based on the new data. Given the average of 3,500–4,000 *yuan* per capita for housing compensation in the Chongqing reservoir section, to construct a new house, e.g., in Deyang city, Sichuan, for a four-member migrant family some 20,000 *yuan*'s shortfall has to be filled by other means, often through loans from relatives or friends. Of the 72 migrant households investigated in Deyang, 68.1% responded that they had borrowed money and 87.5% of them borrowed the money from relatives.

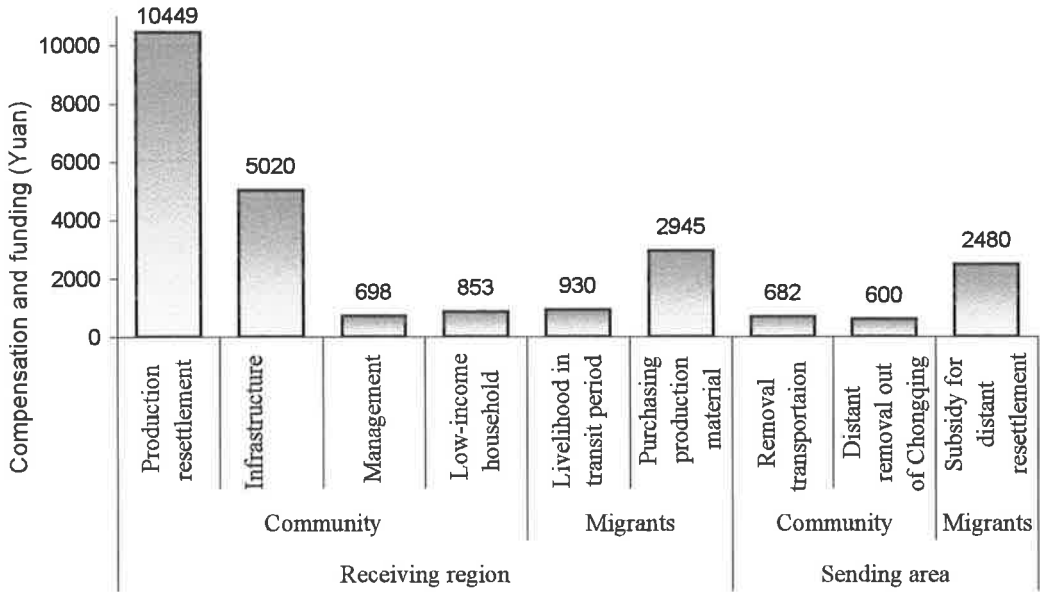


Figure 8. 5 Quota of Compensation and Funds in the GODR Approach (*yuan* per capita).
Source: TGPCC (2000b).

Many migrants complain about the allocation structure of compensation and funding between the recipient communities and the migrants. As shown in Figure 8.5, the compensation and funding which a host community receives for resettling a migrant is 15,469 *yuan*. This includes the funding for production resettlement and for infrastructure provision. They account for 61.4% of the compensation and funding package. The package excludes compensation for the migrants' houses, affiliated facilities and orchards to be flooded because the areas of property and extent of flooding suffered by each household are different. Taking into account the average compensation for these three items, which is about 7,000 *yuan* per capita in the Chongqing reservoir section, the gross compensation and funds for migrants moving out of Chongqing reservoir area is around 32,215 *yuan*, much higher than compensation in many large hydro projects in China. Although the people relocated have been allocated at least 1,000 *yuan* per capita from the infrastructure funding for their house building and purchase of production materials (TGPCC 2000b), the recipient community can

still receive about forty-five per cent of the overall package of the GODR. As a result, the ratio of funding for production resettlement and infrastructure provisions is a highly disputed issue between the migrants and the host people. It has become one of the factors causing instability in the resettlement communities after displacement.

The survey found that among the resettlers displaced to Deyang, Sichuan, 51.4% of the 72 migrant households interviewed consider the compensation that they have received to be insufficient to cover their losses. Similarly, 54.4% of the 103 households to be moved to other provinces in 2001–02 were dissatisfied with their compensation. Migrants may not complain about their poverty if most of the others are in the same plight. There is a perception among them that they receive an unfair proportion of the compensation, which is the reason why many believe they should receive more funding.

Migrants perceive the present compensation policy to be different from the previous one. They compare the current compensation which they can receive, about 14,000 *yuan* per capita in cash, with the amount of 25,000–28,000 *yuan* for each rural migrant displaced via the VSDR scheme. They attribute the disparity to the 'inconsistent resettlement policy' of the government. An investigation in Dachang town of Wushan County, where the second largest town in the reservoir area will be submerged in 2003 and 1,200 migrants will be completely moved to Anhui province, reveals that the migrants regarded the local resettlement authorities as unreliable. When interviewed, they recounted that:

> The government treats us like goods to be traded between the sending and recipient areas. The sending areas sell people (migrants) and the receiving areas sell land (to the migrants). They (local governments) get substantial commissions from this 'trade'. Only if the money (compensation and funding) were held in our hands, then will our minds be put at rest. With the money in our hands, we can do anything that we intend to.

The migrants' misconceptions of the compensation scheme is caused mainly by the various adjustments made to the resettlement schemes, lack of standardised operations in implementing the compensation policy, and unfulfilled wish of the migrants to shake off poverty through the displacement.

8.3.2 Patterns of Social Integration

8.3.2.1 Loss of social capital

People displacement can disrupt the original relationships. The context and degree of the changed relationships vary by the distance and the means of resettlement. The spatial patterns of the GODR can be grouped into two models: comparatively concentrated resettlement at county/township level and scattered resettlement at village/group level. Moving people out of their origin living locations will ultimately change the social environment in which social capital, such as social networks and the related norms and rules, can play their roles. Through the GODR scheme people were resettled in distant communities, ranging from 1,000 to 3,000 km away from the reservoir area. Most of them will experience a long period of social transition to rebuild their relationships in the new environment.

Compared with near resettlement, the migrants displaced by the GODR scheme need to pay high social prices in the course of adapting to their new and unfamiliar environment. Some migrant families were separated from their relatives and friends because they have to move to different provinces, or different resettlement locations within a province. They lost their original social interaction circle and therefore their distress in the process of distant resettlement may greatly increase. They, particularly those resettled in the coastal provinces, will experience cultural shock or broad psychological pressures in their new social and cultural environment. It is difficult for the migrants to rehabilitate their production and further development of capacity quickly as they have lost or will lose all previous social capital.

8.3.2.2 Impacts of resettlement on social integration

The near resettlement associated with the TGP has shown that a concentrated resettlement is prone to result in acute competition for favourable locations and economic resources (Li 2000, p. 275). Strong competition for economic resources such as land, infrastructure, social services and employment opportunities may result in a deteriorating relationship between the resettlers and the host people. Consequently, an economic conflict may turn into a social one. Although migrants displaced via distant resettlement are more likely to run serious risks of isolation due to losing the existing social network in their hometown, they will have the opportunities to escape from their originally closed society, nestled among the mountains and

gorges in the reservoir area. They will see a fresh world where they will receive new ideas and pick up new skills, enrich their lives and make more new friends. This suggests that distant resettlement benefits migrants by creating new social capital and expanding their social network, but they may have to pay the price of gaining new social capital.
The migrants who settled in Sichuan, for example, did not move as far as those who resettled in most other provinces. However, they have experienced a variety of changes to their lifestyles and production means. Some migrants have to go through a substantial switch in the type of their products from orange, vegetable or dry land crop cultivation to mainly paddy rice production, or even from non-agricultural activity to crop farming.

People displacement and resettlement result not only in a change in economic structure and cultural background but also in social relationships. Unlike near resettlement, distant resettlement forces migrants to interrupt their personal ties, which are defined as 'horizontal associations' by Putnam (1993), with people in the original communities. This study argues that migrants moved out by GODR tend to face a complete loss of their social capital and an increase in social costs of building new social capital in the process of resettlement. Before their displacement, most migrants were already paying a social price in the form of anxiety about their resettlement destinations. Through government-organised visits to the resettlement locations, the migrant representatives could gain some knowledge about the physical settings, land resource and infrastructure conditions in their resettlement locations. They will bring back useful information to help their own families and the other migrant households make decisions about the move. Unfortunately, the information given to the representatives is limited in most cases.

The spatial patterns of a combination of comparatively concentrated resettlement and scattered resettlement of the GODR will affect the social integration of migrants into the local society. Scattered resettlement is assumed to enable the migrants to integrate themselves more easily into the host communities after resettlement. Most migrants who have been resettled in Deyang still regard themselves and their children as migrants. These resettlers felt that they were placed in an unfavourable position in community affairs because they have essentially become a small minority group, lacking in co-ordination and support from their own interest groups representing mutual benefits. On the one hand, migrants are forced to interact with the host people in order to build relationships and get help from them. On the other hand, they are often unlikely to access policy formulation and resource redistribution in

grass-root organisations. This leads to a tense relationship between the migrants and the host people.

Resettlers find it very hard to get non-agricultural jobs or to re-establish their own businesses after displacement. The farther the resettlement, the harder the rebuilding of social relationships. Those resettled in the coastal provinces are going through an extremely difficult time because they are not only facing an intensive competition of the market economy but also encountering different languages and culture. During the transition period, the migrants have many problems learning some dialect such as the *Yue* language (spoken in Shanghai and Zhejiang) and *Cantonese* (spoken in Guangdong).

The scattered resettlement is likely to give migrants greater difficulties in adapting to a new social environment than the centralised resettlement, particularly in the beginning soon after resettlement. This study argues that people resettled by 'scattered resettlement' are probably more easily and voluntarily integrated into the host communities than those resettled by the 'centralised resettlement'. Scattered migrants have to make efforts to build their new social capital because it is impossible for them to form an internal interest group on which they can depend in their new resettlement environment. In the context of the country's opening policy and the establishment of the market-economic mechanism, most migrants have become aware of the significance of self-reliance. From the very beginning of their displacement, some of them have devoted time to establishing new relationships with the authorities and host people. Some categories of migrants can easily make use of resettlement as an opportunity to reconstruct and enhance their social capital. Young migrants with relatively good education are more receptive to new ideas, knowledge and skills, which help them re-establish social connections in a new environment, particularly in a fast-paced changing urban environment. The group of migrants who have relatives and/or friends in the new environment tend to re-build their social associations with more ease by taking advantage of their assistance. However, the displaced persons who ran businesses before their displacement find it very difficult to resume businesses in the new environment because their client group has disappeared. It is important to highlight the criteria in selecting eligible migrant families for distant resettlement, especially for those to be displaced to the coastal provinces or the urban regions.

8.3.3 Planning for Livelihood Restoration

The period of restoration, or the transition phase, refers to the duration from the completion of the displacement to restoring their livelihood to the pre-resettlement levels. Each recipient province has worked out its detailed resettlement plan, including the guidelines for resettlement, building plans of housing sites, analysis of land availability, infrastructure and service provisions. Such planning is very important for migrants to rehabilitate their livelihoods after resettlement. In general, the displaced people can work in the land, which is tillable and more fertile than the newly cultivated sloping land in the reservoir area (which usually needs 3–5 years to become productive).

However, two aspects of the planning are usually inadequate or absent. One is a plan to provide agricultural production skills training for the displaced persons. There have been huge differences in the production methods, farm work and farming season between many resettlement locations and the origin areas of the resettlers. Such planning should be based on reasonable exploitation of resources in the resettlement regions, development of second and tertiary industries, combined with the introduction of advanced technology and investment from other areas. As an effective way of increasing the income of the resettlers and providing employment opportunities for the surplus labour, development projects of all kinds in the relocation areas should be selected in accordance with the locations' availability of natural resources, economic situation and the qualifications of the labour force of migrants. Starting non-agricultural production after displacement is to create conditions for the future development in secondary and tertiary industries in some developed regions. The main problem of non-agricultural resettlement is that there exist risks in the market economy, and thus investment may yield low returns. Little technical guidance and training has been provided to the displaced people in many resettlement areas. The other aspect which is absent in planning is that of 'later assistance' after displacement. The main reason for there being a lack of such planning is the uncertainty of the source of the 'fund for later assistance' in the TGP. Without any national policy on the years, standard, and any programmes for 'later assistance' towards the displaced people and the resettlement areas, it is impossible for any resettlement areas to make any plans associated with the 'later assistance'. This 'fund for later assistance' and 'fund for maintenance of the reservoir' will come from the profits of electricity generation and provision of the TGP, starting in 2003. It is also difficult for the

country to fix on a price for the electricity produced by the project because all the stakeholders' benefits will have to be considered.

8.3.4 Governmental Functions

Migrants believe that the government should be chiefly responsible for their distant resettlement. Although China is experiencing economic transformation, the TGP resettlement was actually adopted under the centralised and planned economic mechanism. The government has crucial roles in many aspects of the relocation: overall planning, coordinating the relationships among various institutions, making, implementing, inspecting, monitoring the policies, and ensuring the consistency and continuity of the distant resettlement.

However, governmental functions sometimes seriously clash with market mechanisms. Resettlement is a social, economic and demographic process. It results in the spatial transmission and re-distribution of regional productivity. It affects the distribution of population and the labour force. It impacts on the re-structuring of regional economy and re-construction of societal networks. Institutions and authorities working on the resettlement strongly expect a special law to guide the resettlement work, e.g., Reservoir Relocation Law, in which there should be provisions covering how to deal with the migrants if they refuse to move out or return to the sending areas after displacement, how to cope with the various types of pseudo-migrants, and how to deal with corruption. Migrants expect their rights to be protected. Some of them prefer adopting a market-economic mechanism, through which they could voluntarily select their resettlement locations, actively choose resettlement schemes, and enhance self-development ability and independence. However, the GODR has been implemented principally under the top-down approach of the administrative government, which has little room for market forces. As a consequence, the predominant role of the government reinforces the migrants' dependence on the government.

8.4 Conclusion

The main countermeasures to be adopted for the need of environmental sustainability in the

reservoir area are: (1) to move some rural residents out as a way of increasing the resettlement capacity and shut down pollutant-generating enterprises; and (2) to restrict reclamation on steep slopes in the reservoir area.

The process of distant resettlement relates to at least three parties: governmental institutions and organisations, the resettlers and the host people. The Chinese government has played significant roles in the TGP distant resettlement, in policy adjustment and its implementation and organisation. However, over-emphasising governmental roles can give rise to contradictions with the market-economic rules and roles. Lack of participation of the displaced in their resettlement affairs, particularly resettlement location selections and production rehabilitation will increase their dependence on the government and result in problems relating to house rebuilding, contract land allotment, and reluctance in moving out.

Land readjustment is a critical issue in carrying out the GODR scheme. Migrants expect to be resettled in county or town seat settings. In the 11 destination provinces the land potential is also limited. The cost in the distant resettlement package will increase greatly due to some unavoidable items. The 'special funding' for assistance at the latter stage after resettlement has been stipulated in the resettlement regulations, but its distribution to the reservoir area and the resettlement areas still remains to be arranged. The allocation of 'compensation and funding for production resettlement' remains in heated dispute. What the sending areas lose is not only the monetary capital for resettlement but also the human resource. The people displaced, having lost social capital in the origin areas, are experiencing an uncomfortable process of integrating themselves into the new environment.

The Chinese government has proposed the goal of resettlement to be: 'moving out migrants, keeping a stable society, and helping migrants to become rich gradually'. House rebuilding in distant resettlement is given special emphasis. Yet livelihood and production rehabilitation planning is weak. While some receiving communities have provided migrants with some information on the local market, a systematic and operational plan for agricultural or non-agricultural reconstruction, e.g., production skills training, is still lacking.

Chapter Nine

IMPLEMENTATION OF THE GOVERNMENT-ORGANISED DISTANT RESETTLEMENT: THE CASE IN SICHUAN PROVINCE

This chapter, taking Sichuan as a case study area, continues to examine the process of the GODR scheme. It includes 3 sections. Sections 9.1 starts with analysing the difficult situations for Sichuan to resettle migrants from Kaixian County. In section 9.2, the study further examines the procedures of both the 'trial resettlement' and 'full scale resettlement' in the province. Models for land redistribution and house building are examined. Section 9.3 identifies some critical factors which affect the consequences of resettlement and restoration of livelihoods of migrant households after displacement.

9.1 Difficult Situations in Resettling TGP Migrants

9.1.1 Lagging Economy

Among the designated 11 provinces and municipalities to receive migrants from the Chongqing reservoir section, Sichuan is the province most lagging in terms of per capita gross domestic production (GDP) and income of the people (refer to Table 8.1). The main economic indices such as per capita GDP, secondary and tertiary industrial products, disposable income of urban citizens and the net income of farmers in Sichuan were lower than the national averages and lower than the averages in Chongqing in 2000. There are significant disparities of economic capacities between Sichuan and the coastal provinces. Sichuan is still an agrarian province. In the ranking of national GDP Sichuan was placed 8th for agriculture, 22nd for secondary industry, and 26th for tertiary industry in 2000 (CNSB 2001a). Its revenue in 2000 was 23.4 billion *yuan*, ranked 11th. For example, the differences between Sichuan and some coastal provinces have widened. The disparities of revenue between Sichuan and Guangdong and between Sichuan and Shanghai increased from 51.9 billion *yuan* and 22.2 billion *yuan* respectively in 1999 to 67.3 billion *yuan* and 26.4 billion

yuan in 2000. The disposable income of urban citizens and the net income of farmers in Sichuan were 5,894 *yuan* and 1,892 *yuan* respectively, lower than most other provinces.

However, some key economic indices indicate that Sichuan has maintained its first place in west China, which encompasses 12 provinces, municipalities and autonomous regions (Sichuan, Chongqing, Yunnan, Guizhou, Guangxi, Inner Mongolia, Ningxia, Shaanxi, Gansu, Qinghai, Xingjiang and Tibet). GDP, investment in fixed assets and revenue account for some 20% respectively in the total amounts in west China in 2000. Sichuan is the unique province appointed to receive the TGP migrants in west China.

9.1.2 Geographical Deviation

Sichuan is situated in the upper reaches of the Yangtze River. Its topography is basin-shaped, namely Sichuan Basin, surrounded by plateaus in the west and south, and mountains in the east and north. The geomorphic units of Sichuan can be divided into three sections. In the northwestern section at the bottom of the Sichuan Basin is Chengdu plain, which has been the economic, historical and cultural centre of the province. In the middle part of the Sichuan Basin are hilly agricultural areas, while surrounding the edges of the Sichuan Basin are mountainous and backward areas. Physical conditions and geographical differences greatly affect resettlement location selection.

Sichuan is one of the most populous and poverty-stricken provinces in China. By the end of 2000 the population amounted to 83.29 million, making up 6.6% of the population of China (CNSB 2001a). Yet there are a large number of poverty-stricken people in the countryside, especially in the remote mountainous regions or the areas inhabited by minority nationalities. Sichuan has a total land area of 485,000 km^2 , but per capita arable land is only 0.052 ha (SSB 2001), which is far lower than the national average (0.132 ha). Sichuan has deficient land resources and financial capacity to receive migrants in the GODR scheme.

9.1.3 Heavy Resettlement Task for the Ongoing and Prospective Hydro Projects

Sichuan has the richest hydro energy resource in China. In the '10-Year Development Plan (2000–10)' of Sichuan, hydro electricity has been listed as one of the leading industries. According to a 1998 inspective investigation of the hydropower potential, the total amount of hydropower reserve, on paper, is 1.43 x 10^8 kw.h, making up 21.2% of the entire hydropower resource in China (Zhao and Ma 2001). Eighty per cent of hydropower resource is distributed in the three tributaries of the upper reaches of the Yangtze: Jinsha, Yalong and Dadu, as shown in Figure 9.1.

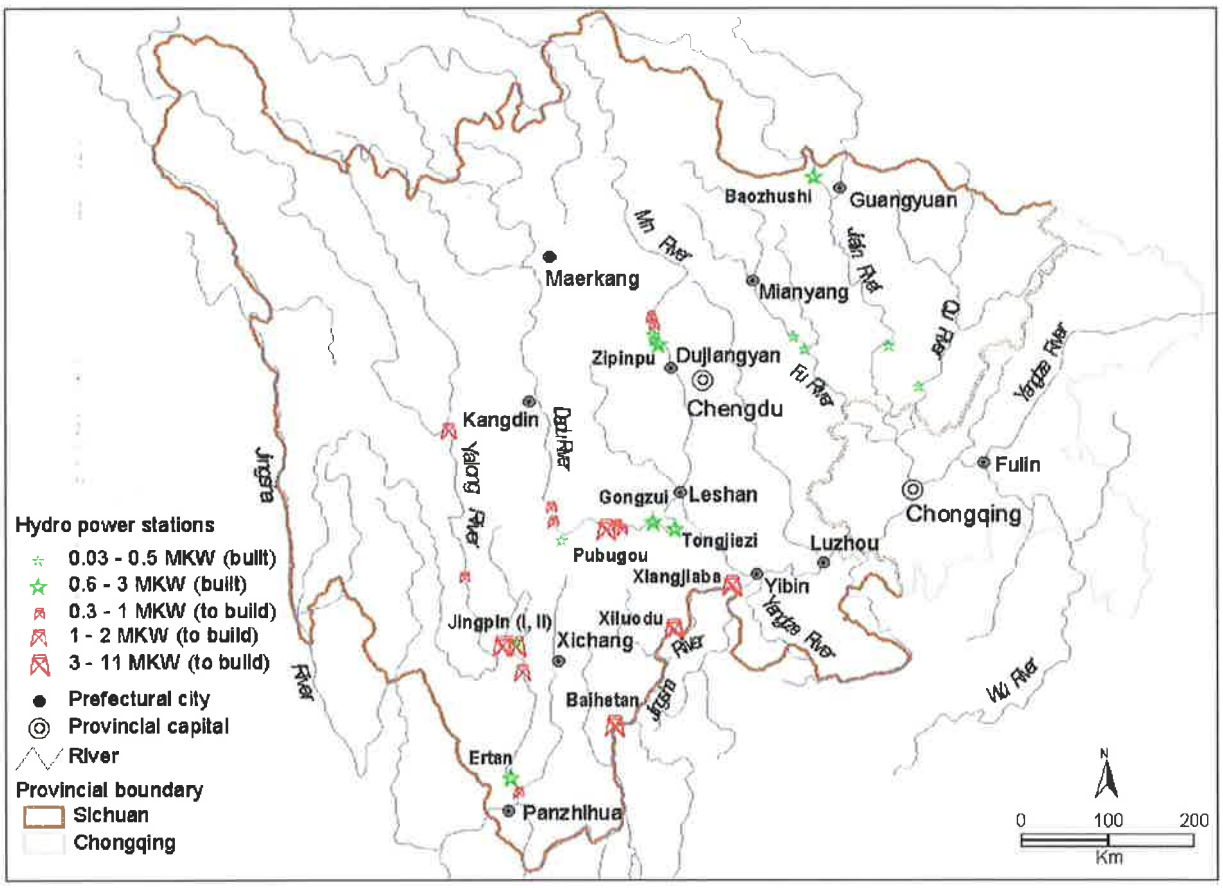


Figure 9. 1 Distribution of the Large Sized Hydro Power Stations in Sichuan.

Source: Redrawn from: CSPIWRC (1989).

Table 9.1 shows the large sized hydro projects which have been planned, commencing in the first decade of the 21st century, of which the Zipinpu hydro project is under way. It is estimated that 300,000 resettlers will be displaced by these upcoming projects. It will be difficult to resettle them in their local reservoir areas because these areas are mountainous,

underdeveloped and inhabited by ethnic groups. Substantial numbers of migrants will have to be moved out and settled in other areas within the province. Sichuan will encounter extensive challenges of population resettlement in the near future.

Two immediate hydro projects provide examples in point. The Pubugou project (see Figure 9.1) will start in 2003 and 85,901 persons will be displaced, among whom 69,726 are peasants. It is planned that 23,758 people will have to be moved out of their origin counties and resettled in other districts in the province, such as Chengdu, Mianyang, Deyang, Leshan and Meishan. The Xiluodu project (see Figure 9.1) will serve mainly for flood prevention, electricity generation and particularly reduction of sedimentation in the last section of the Three Gorges reservoir. There will be at least 52,000 people to be moved out, and of these 45,000 are 'productively resettled population' (SEIC 2002).

Table 9. 1 Large sized hydropower projects to be implemented in Sichuan (2000 – 10)

River: Hydro Project	Installed Capacity: Turbine Generator Sets * Per-unit Generation Capacity (10^4 kw)	Annual Average Power Generated (10^8 kwh)	Storage of Reservoir (10^8 m^3)	Construction Timetable	Scheduled Commencement of Power Generation Year
Min River:					
Zipinpu	4 x 19	33.64	7.58	2000-07	2006
Dadu River:					
Pubugou	6 x 55	145.8	38.8	2001-10	2009
Dushong	4 x 34	68.4	26.8	2006-14	2013
Dagangshan	4 x 37.5	81.2	1.5	2009-15	2014
Yalong River:					
Jingpin (I)	6 x 55	162.9	49.1	2004-15	2012
Langhekou	4 x 50	95.0	53.0	2007-16	2015
Jinsha River:					
Xiluodu	18 x 70	576.6	64.6	2004-15	2013
Xiangjiaba	8 x 75	293.38	9.05	2009-25	-
Jialing River:					
Tingzikou	4 x 20	31	17.8	2003-10	2009
Other rivers:					
Yiele	2 x 12	5.96	2.76	2000-05	2004
Wawushan	2 x 12	6.88	4.63	2002-07	2006

Source: Zhao and Ma (2001, p. 16).

9.1.4 Left-over Problems of the Past Resettlement: A Case in Baozhusi Hydro Project

There have been some 200,000 people displaced by hydro projects in Sichuan over the past decades. Baozhusi Hydro Power project was one of the national key energy projects completed during 1985–90. It is located in the downstream section of Bailong River, a tributary of the Jialin River (see Figure 9.1). The population affected was 30,254 in 1984 at the initiation of the project, of whom 71.6% were farmers. The figure of 'productively resettled population' amounted to 32,838 in 1993. About 70 per cent of the rural residents were resettled in agriculture, particularly in the grain cropping sector. Around 16 per cent of the rural migrants were absorbed by secondary industrial enterprises. Another 14 per cent of the migrants were resettled via other schemes, such as 'living with friends or relatives' and 'self-employed settlement'. According to a recent survey of the consequences of the Baozhushi resettlement (DCSPRO 2001), while living conditions of migrants after displacement have greatly improved through every resettlement scheme, some problems remain to be solved.

Firstly, land, irrigation and transportation facilities are inadequate for the migrants who were resettled uphill. Some migrants have food grain of less than 200 kg per person per year. The annual income of migrants is only around 500 *yuan*. A variety of taxes and fees, which are called 'burdens' (*fudan*) in rural China, are great, ranging between 90–100 *yuan* per capita.

Secondly, non-agricultural resettlement has generally been a failure. There were 3,346 migrants who were resettled in industrial and commercial enterprises, of whom around 74% were resettled in the Central District of Guangyuan. Unfortunately, 3,096 people had been laid off by 2000, becoming jobless. These laid-off people had to return to their origin areas, to seek a basic living.

Thirdly, some migrants who have transferred their agricultural residency to urban citizen status have lived in difficult conditions. Most of them now live in the new town settings, but they have no farm land, no businesses, and no money because savings over the past years have been invested in building new houses. This group of resettlers often assemble together to 'make trouble' for the local resettlement departments and cadres. They have threatened the social stability in the reservoir area. The failure of the resettlement schemes of 'transfer of household residency' or 'self-employment' is due to the local economical level lagging

behind the other regions in the province. The market for running businesses or doing non-agricultural work is small. These migrants lack the necessary skills and education therefore they could not respond to the market economy, establish or continue in their non-agricultural activities. Moreover, some migrants were displaced by the 'self-employed resettlement' scheme, but they still retained their residency as agricultural population. They have lost their farm land and have to depend on the limited 'production resettlement fund' which they obtained 10 years ago. Over half of this group of people live in a situation of extreme lack of money, food grains and income sources. They become another unstable factor affecting the society in the reservoir area.

Inadequate resettlement funds are important factor resulting in people 'remaining in poverty' after resettlement. The average resettlement fund for rural resettlement was originally intended to be 8,050 *yuan* per capita, but it was reduced to only 4,825 *yuan* in reality (DCSPRO 2001). This figure became merely 2,000 *yuan* for each person who was resettled uphill. Most migrants did not receive all the land that was promised to them even after a long period of resettlement. Some funds for rural resettlement were diverted to other uses, such as the relocation of industrial and commercial enterprises and reconstruction of special facilities and infrastructure.

Baozhushi resettlement is an example of many resettlement projects caused by dams and reservoirs in Sichuan. Some crucial 'left-over' problems are in need of resolution. This is another major concern in assigning resettlement tasks relating to receiving the TGP migrants. These counties where a large number of reservoir resettlers have already resettled should not be selected as resettlement locations in the GODR scheme.

9.1.5 Potential Environmental Migration in West Sichuan

The Chinese authority has paid keen attention to environment-related displacement and resettlement in west China (Jiang 2002). The population who were poverty-stricken and needed to be displaced due to the deteriorating environment in west China reached around 10 million in 2000 (WCDOS 2001). The environment-related migration is an important aspect of the environmental rehabilitation in the upper reaches of the Yangtze. The Sichuan provincial authority has put forward that Sichuan will become the reliable 'ecological protective buffer'

of the upper catchment of the Yangtze River and the Three Gorges project through a 10-year comprehensive ecological rehabilitation (*Xinghua News Agency* 9 March 2000).

Environmental migration means that people, who originally lived in the natural reserves, seriously deteriorating environmental areas, or areas with extremely harsh environments which are not suitable for human habitation, are required to be moved out and resettled to other locations. Environment-related displacement is an involuntary and collective movement of people. Therefore, it needs to be carefully planned and organised by the government. Due to deforestation, reclamation, cropping on steep slopes, overgrazing on natural grassland, and cutting of firewood, the environment in west Sichuan has seriously deteriorated. Landslides, mud and stone flows, water and soil erosion and other mountain disasters occur frequently.

The population to be relocated under the consideration of environmental rehabilitation amounts to 1 million. It is planned that 600,000 people will be displaced during 2001–05 (WCDOS 2001). These people mainly inhabit three minor nationalities' autonomous regions of west Sichuan: Ganzi, Aba and Liangshan. Most of these people belong to ethnic groups (e.g., Yi, Tibetan and Qiang nationalities). Issues of environment, ethnic and poverty interact with one another (Xie *et al.* 2002).

Shortage of capital resources is the main problem in this relocation (NOSC 2001). Annually 692 million *yuan* is required to implement this relocation project. Half of the financial resources in requirement for the projected environment-related relocation can be derived from the 'natural forest protection project' in the upper Yangtze, but the other half is lacking. Sichuan has no financial capacity so it had to issue national debt bonds in 1998 to secure money (Xie *et al.* 2002). Presently, some financial resources come from the nation's 'poverty-alleviation funding' and from the fund of 'giving relief by providing labour' (*yi gong dai zhen*). The latter source of funds is essentially a form of governmental functions, which date back to the Ming (A.D. 1368–1644) and Qing Dynasties (A.D. 1644–1911) in China. The government aided the areas suffering from disasters, through offering income to the labourers in traditional industrial sectors, and in return the victims of natural calamity provide labourers to rebuild the disaster areas. This strategy has played an important part in the battle against poverty since its initiation at the end of 1989 in China (Zhu and Jiang 1994, p. 22; Kang 1995, p. 303). However, the amount of funding from this aid is very limited. In this context, it is impossible to arrange for the counties in west Sichuan to receive the TGP migrants. The capacity for Sichuan to receive the TGP migrants becomes very limited.

9.2 Process of the GODR

9.2.1 Planned Resettlement Locations

9.2.1.1 Principles for location selections

The selection of resettlement location is of utmost importance in distant resettlement in a province. Sichuan has carried out the principles of location selections, which include:

(1) using land as the fundamental tool of resettlement;
(2) allocating each eligible migrant with a plot of land (contract farm land, private plot, and land for housing), which should not be less than the average land-holding of the host people;
(3) giving priority to agricultural production and convenient living for migrants;
(4) adopting the resettlement patterns of 'comparatively concentrated resettlement at county and township level, but scattered resettlement at village and villagers' group level';
(5) combining the government-organised resettlement with migrants' voluntary displacement;
(6) distributing the equity of rights and obligations among the migrants and the host people, in addition to implementing the national preferential policies offered to the migrants;
(7) implementing the national resettlement policy and relocating migrants in conformity with legal provisions; and
(8) creating conditions for later development of migrants after resettlement in combination with the opportunities for the 'grand development of west China' (DCSPRO 2000, p. 2–3).

9.2.1.2 Resettlement task and resettlement areas

Figure 9.2 shows the 12 cities and prefectures which were selected as resettlement areas. Deyang is the 'trial resettlement' location in 2000 and has received some 600 migrants. To resettle another 8,400 migrants in 2001–02, 12 cities/prefectures were selected as resettlement locations, comprising 1,416 villagers' groups at 932 villages in 295 townships/towns of 48 counties/cities/districts. In these resettlement counties, cultivated land is only 0.04 ha per capita.

Variations in the quality and quantity of land provided for resettlement have been an issue in some areas. For example, in 2002, only a few migrants from Kaixian wanted to be resettled in Sichuan as all the receiving counties are situated in the central hilly land or the eastern mountainous ridge of the Sichuan basin (see Figure 9.2). The soil fertility, irrigation and economic potential are not similar to either the resettlement locations provided in 2000 and 2001 nor the origin peri-urban areas in Kaixian County.

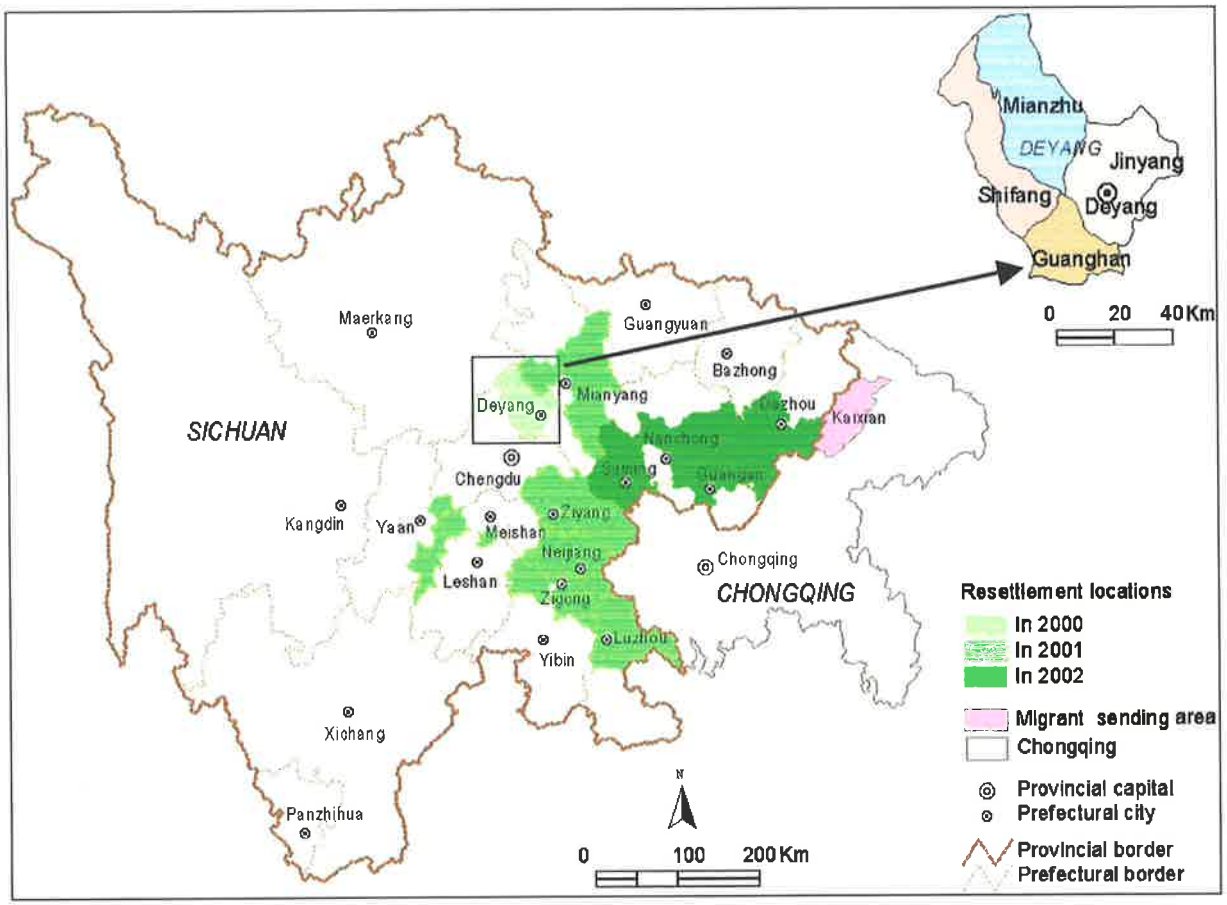


Figure 9. 2 Resettlement Locations in Sichuan Province, China (2000–02).

It is noted that some regions with comparatively developed economies in the province were not part of the recipient areas for TGP migrants for the reasons discussed in section 9.1. For example, Chengdu is about to accept 10,000 migrants produced by the ongoing Zipinpu hydro project. Leshan had resettled the majority of the reservoir resettlers from past large-sized hydro projects such as Gongzui (16,300 people) and Tongjiezi (34,634 people) prior to the 1980s. Many 'left-over problems' of these resettlement projects remain unsolved. Panzhihua received 60,518 migrants from the Ertan project in the 1990s, financed by the World Bank. Yibin will receive the migrants resulting from the upcoming Xiangjiaba and Xiluodu projects on the Jinsha River.

Table 9.2 Economic status of the prefectures receiving migrants in Sichuan (2000)

Prefecture/ City in Sichuan	Cultivated Land	GDP								Net Income of Rural Households	
				Agriculture		Secondary industry		Tertiary industry			
	Per capita (mu)	Per capita (Yuan)	Order	Per capita (Yuan)	Order	Per capita (Yuan)	Order	Per capita (Yuan)	Order	Per capita (Yuan)	Order
Resettlement in 2000											
Deyang	0.81	6,889	3	1,631	1	2,996	3	2,230	3	2,413	3
Resettlement in 2001											
Mianyang	0.92	6,122	4	1,373	3	2,535	4	2,224	4	2,187	4
Meishan	0.86	3,678	9	1,222	6	1,321	11	1,129	13	2,109	6
Leijiang	0.67	3,454	12	810	17	1,414	9	1,225	10	1,957	10
Ziyang	0.96	2,924	15	1,166	10	873	16	886	15	1,860	14
Yaan	0.87	4,949	5	1,190	8	2,364	5	1,382	7	1,909	11
Luzhou	0.74	3,578	11	971	13	1,372	10	1,226	9	2,173	5
Zigong	0.66	4,825	6	1,029	12	2,173	6	1,622	5	2,104	7
Resettlement in 2002											
Suining	0.70	3,169	13	1,095	11	1,051	14	1,035	14	1,894	13
Guangan	0.66	2,901	16	962	14	1,065	13	857	16	1,908	12
Dazhou	0.72	3,040	14	1,179	9	1,090	12	759	18	1,988	9
Nanchong	0.89	2492	18	941	15	645	18	906	15	1,669	15
Average in Sichuan[1]	0.78	4,770		1,125		2,023		1,623		1,904	

Note: [1] The data were based on sampling survey to the prefectures in 2000.
Source: SSB (2001).

As Table 9.2 shows, the cultivated land per capita and the net income of rural households in most prefectures/cities are higher than the average in the province. Deyang is ranked third in terms of its economic level, being the best resettlement area in the province. Comparatively, resettlement conditions in the four resettlement regions in 2002 were generally worse than those in Deyang and some regions in 2001. The differences in the levels of economic development and ability to provide land suggest that resettlement in the process of GODR each year may become increasingly difficult. There exist big discrepancies in the economic development levels among the twelve resettlement prefectures/cities.

9.2.2 Main Procedures of GODR

9.2.2.1 Official visits and negotiation

The first phase is called '*dui jie*', which involves arrangement, contact, negotiation and visits between the officials of the migrant sending and receiving areas. This process usually happens in late October through to mid November. In 2001, for instance, 27 counties were arranged to receive migrants. The Kaixian county government and the Kaixian Resettlement Bureau (KRB) organised 27 leaders working in different departments of this county to support the work of the KRB in moving out the migrants. Each leader was nominated as an official representative in charge of contacting and negotiating with one recipient county. Some delegates, comprised of cadres from the relevant towns/townships, villages and villagers' groups of the sending communities, formed an 'official visit group'. Each official visit group would work in the assigned recipient county for 2–5 months or longer. Its main task was to carry out general investigations of resettlement locations. They could negotiate the conditions of resettlement locations on behalf of the government and migrants of the sending county. In this phase, official visits were also organised to the sending areas in Kaixian to understand the living and production situations of the migrants. After several rounds of location selection, the resettlement locations are basically fixed. An agreement on the number of persons to be displaced, including where they are from and which location they are to be resettled in, would be signed by both parties.

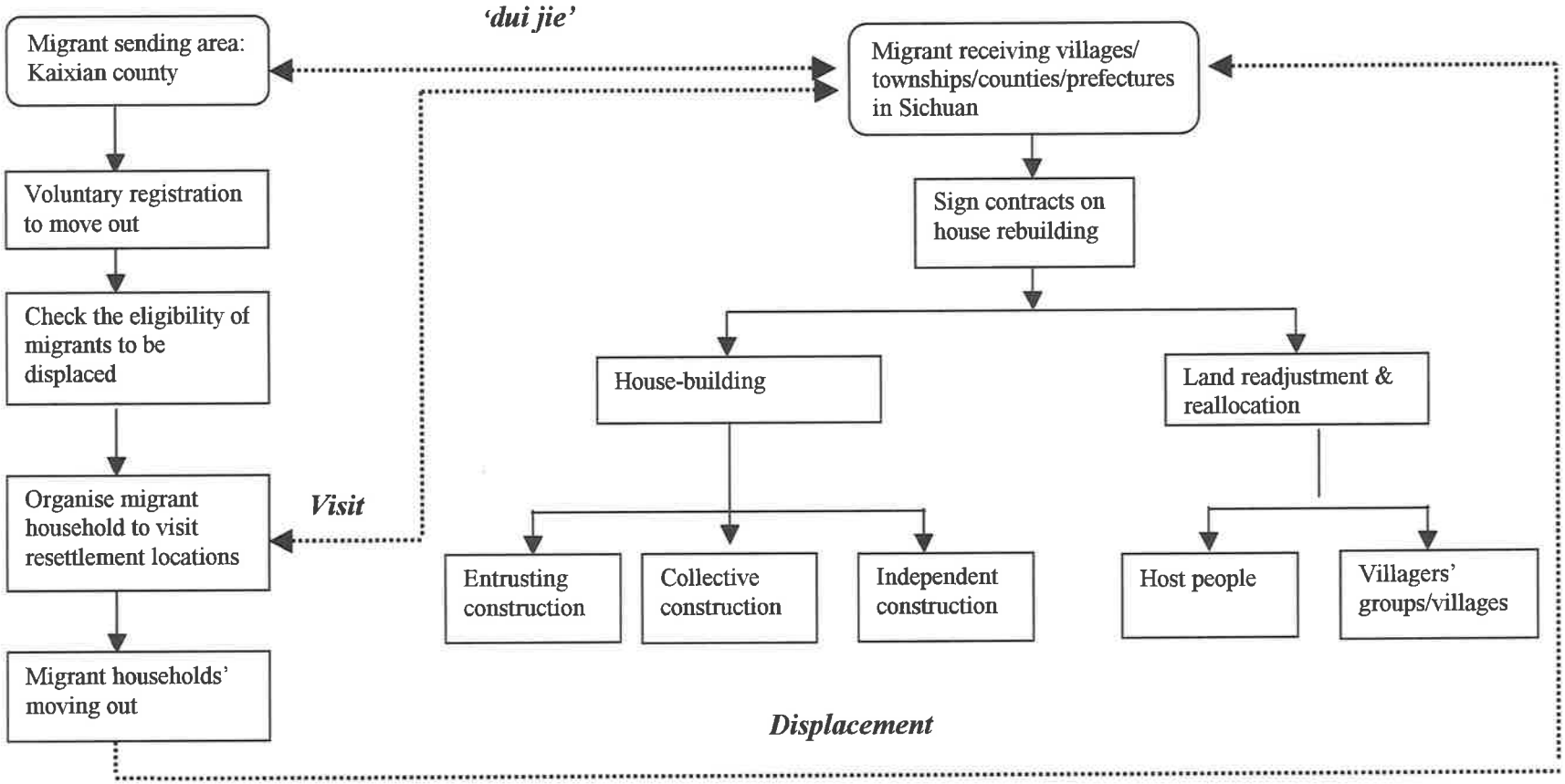


Figure 9.3 Procedures of GODR in the Sending and Receiving Regions.

9.2.2.2 Visit of migrant representatives

This phase occurred between mid-November and March. An agreement regarding migrant households moving into the resettlement community and starting to build new houses or purchase existing houses from the host people would be reached. Figure 9.3 illustrates the main procedures of the GODR.

Simultaneously, registration and eligibility ratification of the people to be displaced are important procedures in the sending county. Voluntary registration to the village and township governments by migrant households was encouraged in the sending county, although ultimately migrants must be moved out of their hometown. Ratifying the eligible households who must or can be displaced by the GODR is important. Other than the national criteria for judging the eligibility of status as migrants who must move out of the reservoir, eligible persons and their households must meet the following requirements and in order of precedence, based on the CWRC's 1992 records of the 'inventory of physical losses caused by the TGP'. These requirements include:

1. Rural residents whose houses and farmland will be all flooded;
2. Persons whose houses will be flooded;
3. Persons whose farmland will be flooded;
4. Natural population growth in the above three categories; and
5. Systematic increase in the number of people from 1992 to 2000.

9.2.2.3 House building

This phase is very urgent, usually beginning in March and being completed in August. This period is in summer, with accompanying hot and rainy weather, which often means the postponement of house building. Many problems and conflicts can arise. Hence, the receiving governments at all levels have placed great emphasis on and paid much attention to the whole process of house building. Housing quality is an important issue, which relates to the security of life and assets of resettlers and their long-term benefit. Organising, inspecting and pledging the quality of house building are important roles for the recipient governments.

9.2.2.4 Moving out

The last phase is to displace the migrants to their resettlement locations. Migrant households are required to move out of their origin areas before 31 August to ensure that their children are in time to attend school at the start of the new academic year in their new communities. This period is a slack season in farming, a period of shifting from farming in the summer season to farming in the winter season. Contract land for each eligible migrant will be allocated to the migrant households within a month after they move into their resettlement sites. Security issues relating to the long distance of transportation are very important in this phase. It is not easy for the government to successfully organise the massive population to move out of their homeland and resettle in their new environment because these people include the aged, children, women, and other vulnerable groups. There is a risk in long distance transportation of people and their goods which can weigh around 5 tonnes for a three member household. To guarantee the security of the life and assets of migrants, Sichuan seeks help from the army, using army trucks and buses to transport them to their destinations.

9.2.3 Trial Resettlement

The SPRO has made great efforts in planning, coordinating, negotiating and organising the trial resettlement between the migrants' sending county (Kaixian) and the recipient city (Deyang) and between the resettlers and host people. The recipient communities, as shown in Figure 9.2, offered their best land and infrastructure to the migrants. When migrant delegates visited these locations, some readjustments to the proposed locations were permitted. The provincial and local governments gave the representatives priority and opportunity in selecting resettlement locations. There are two reasons for this. Firstly, the governments at all levels have placed an emphasis on the significance of a successful trial resettlement, a starting point to completing the 'political task'. Secondly, the number of migrants is not excessive so that it is feasible to provide migrants some options in selecting locations.

The economic rehabilitation of resettlers after displacement can fall into two distinctive phases. The first phase is dominated by land-based productive activities. In some communities technical support and financial assistance for the resettlers to develop vegetables and cash crops have been provided. Each is allocated a plot of land, on which they can work to achieve basic maintenance. Most migrants can engage in agricultural pursuits,

such as cropping, vegetable and fruit cultivation, animal husbandry, aquaculture, or other agricultural sidelines. However, given the limited land resource in the resettlement region, measures for land-based rehabilitation only provide an initial production basis to feed themselves for most resettlers. The land-based rehabilitation will be quite insufficient to restore the income and livelihood of the migrant families. Rehabilitation in the ongoing first-phase can be divided into three categories. The first type involves various rural-based sideline activities, such as raising pigs or ducks. Although for most resettlers these activities were not new adventures, specialising in them required a great deal of integrated effort, including financial and technical support, marketing expertise and individual initiatives. The second type of non-farm-based economic rehabilitation includes various service-oriented activities, ranging from setting up small shops in the town or village and providing food and transport services (e.g., car washing). The third type of activities is undertaken by two kinds of migrant workers. One group of migrant workers provides services, using special skills working as artisans. The other group work as unskilled labourers in the local labour market or in the coastal regions of east China.

The restoration of income will mostly rely on the second phase. This phase will focus on non-agricultural income-generating activities. These activities have just emerged with individual initiatives where the resettlement institutions and local governments provide the necessary technical guidance and financial support.

Table 9. 3 Main problems in the process of distant resettlement

Main Problems	Multiple Responses	% of Multiple Responses
Inadequate compensation	91	63.7
Hard to leave hometown	31	21.7
Uncertain future	18	12.6
Other	3	2.1
Total	143	100.0

Source: Survey in Deyang in 2001.

As shown in Table 9.3, around 64% of the multiple responses revealed that migrants received 'inadequate compensation' for their displacement. Most migrant households have little capital to invest in production after spending their money in building houses. They encounter obstacles to rehabilitate their livelihoods and production. They suffer great economic pressure. This is because, firstly, the standard of compensation for the inundated houses of

the rural dwellers displaced are low. Their original houses were mostly earth structured and were only entitled to low compensations. Most of them now build new houses which are brick or brick/concrete structures. The compensation was not enough for them to build their new houses. Secondly, migrant families are relatively poorer in comparison with the host people in Deyang. Thirdly, most migrants lack cash income-generating sources after resettlement. Although each migrant is allotted 0.067 ha of land, the income from land cultivation is little. Finally, migrants generally lack non-agricultural production skills. Although the people displaced could start to restore their incomes using their simple manual labour and skills which they had used in the sending areas, the production skills training and opportunities for employment in Deyang are still inadequate. Therefore, it is difficult for the resettlers to increase their cash income in the non-agricultural sector, especially during the transit period after displacement.

9.2.4 Full-scale Resettlement

9.2.4.1 Comparatively concentrated resettlement locations

In the massive resettlement in 2001–02 a large resettlement site accommodated over 100 migrants. In comparison, the largest resettlement site in the 'trial resettlement' received only 70 migrants. Table 9.4 shows the figures for the resettlement communities at all levels. The figures in Table 9.5 illustrate that the degree of concentration of the spatial pattern of the resettlement communities in 2001–02 is higher than that in 2000.

Table 9. 4 Resettlement areas in year 2000–02

Resettlement areas	Number of resettlement areas			
	in 2000	in 2001	in 2022	Total
Prefectures	1	7	4	11
Counties	4	27	16	47
Towns/townships	15	88	43	146
Villages	38	102	147	287

Source: Compiled from the statistics of the Policy and Regulation Division of SPRO, 2000, 2001, 2002.

Table 9. 5 Average number of migrants/household size resettled in each community in Sichuan for year 2000 –02

	2000		2001		2002	
	No. of persons	No. of households	No. of persons	No. of households	No. of persons	No. of households
Prefecture	631.0	153.0	827.9	212.4	704.5	202.0
County	157.8	38.3	214.6	55.1	176.1	50.5
Town/township	42.1	10.2	65.9	16.9	65.5	18.8
Village	16.6	4.0	56.8	14.6	19.2	5.5

Note: One prefecture is made up of several counties or cities, and one county/city is made up of numerous towns/townships.

Source: Compiled from the statistics of the Policy and Regulation Division of SPRO, 2000, 2001, and 2002.

9.2.4.2 Resettling people in urban or peri-urban settings

Some migrants have been resettled in the built-up urban areas or the peri-urban districts of the selected counties and towns. Fang (1984) points out that the development of small cities and towns includes two levels: the high-level small cities in which residents are classified as 'urban', and the low-level rural towns in which residents are not classified as 'urban'. The low-level rural towns are suitable for the rural people's incomplete transition to non-agricultural occupations and favour their mobility in local areas. 'Small cities and towns' have played a key role in rural development by providing free markets for peasants (Ebanks and Cheng 1990, p. 41–42). The small cities and towns not only absorb rural populations but also block them from migrating to large and medium-sized cities. Thus small cities and towns prevent the excessive expansion of urbanisation of the large and medium-sized cities. In this sense, resettling TGP migrants in rural towns and county-class cities is compatible with the Chinese policy on urbanisation. However, in most small county-level cities and towns there is an absence of trunk infrastructural networks, such as water supply, sanitation, waste and sewage disposal, roads and transit systems (Khan 1994). In addition, capacity to provide migrants with non-agricultural employment in the urban areas is considerably deficient.

After 4 or 5 rounds of readjustments, over 90% of resettlement locations are in township urban settings. A few resettlement locations are in the well-built areas of county cities, or within their planning zones of urban expansion. These resettlers were also allocated farmland in the countryside. This resettlement pattern has resulted in a spatial separation between the living locations and farmland of the migrants. Due to the physical distance, the viability of agricultural production is hampered. If these resettlers encounter difficulties in their non-

agricultural activities in urban areas, it will be inconvenient for them to return to work on their land.

9.2.5 Land Issues

Land insecurity has been documented as the main hurdle for the present agricultural development in China (Rawski and Mead 1998). Frequent adjustment of the land has become the key barrier to the certainty for farmers to use land and invest in it. When population changes or land is reduced, e.g., population growth, immigration of people for marriage, land recruitment for highway construction or urban expansion, villages have to readjust the structure of land allocation. Land readjustment has often further subdivided the farmland and caused small and fragmented farm holdings.

Readjusting land use rights is restricted to ensure the land use security of the peasants in the long term. The government put forward the second-term reform on the tenure of land use rights before the first official 15-years tenure was terminated in 1995. In practice, the duration of the first term of contract land tenure was valid for over 20 years from 1978 to 1998. The second-term of land tenure empowering the land use rights of peasants is 30 years, based on signing a 'household-based land contract' for each peasant family, in which the rights and obligations between the collective and the peasant households are executed. In regard to some marginal lands, termed the 'four types of barren land' which are located on barren hills, slopes, ditches and beaches (*si huang di*), lease rights could be 50 years or longer (Chen 1996). Major readjustment is prohibited. Minor readjustment may occur, but it is confined to a few individual farmer families. After the Land Administration Law was passed by the NPC on 29 August 1998, the second-term of land tenure was enacted over the country. The Central Committee of the Communist Party of China (CCCPC), at its Third Plenary Session in October 1998, issued the Resolution of the CCCPC on Several Major Issues Concerning Agriculture and Rural Work. This 'resolution' reinforced the land tenure mechanism and decided that the second-term of the contract land tenure must be staunchly and unwaveringly carried out in the countryside in order to confirm and protect the long-term stability of land contract relations, assuring farmers the rights of utilising the land for a long-term lease.

A study states that China's land tenure system, in which all productive land property in rural areas are collectively owned, is well suited to the approach of resettling migrants in agricultural sectors (OED 1998a). Yet the institutional mechanism of land tenure in rural China affects the benefits of both the host people and migrants to a great extent because compensation for land provision or losses of the two categories of people is underestimated and inadequate.

The urban and peri-urban areas have much greater 'attraction' than any rural areas in the selection of resettlement locations. The nearer the geographical location to the urban sites, the smaller the extent of large-scale land use, but the more intensive the agriculture. The ideal resettlement that rural migrants desire is to build their houses in urban settings and have contract land on the outskirts. This resettlement pattern may bring some non-agriculture-based jobs or income opportunities to migrants, but the land resource is in short supply in most urban and peri-urban districts. When answering the question 'What do you worry about most after the distant resettlement?' 32.7% of the interviewed 101 migrant households who would be moved out in 2001–02 responded 'decreasing income', while 21.8% responded 'less land' and another 12.9% responded 'few employment opportunities'. Income, land, and employment are the three main factors in the considerations of relocation of most migrants.

The countryside in *Sichuan* mostly fulfilled the second-term land tenure in August 1999 (Yei *et al.* 2000). According to a report of the Agriculture Department of Sichuan (governmental document No.51 [2000]), only 1,956 villages, or 3.5% of the overall villages, did not implement the second term of land tenure. Most villages had signed household land contracts to the villagers by 2000. The status of retained land in the villages designated to receive resettlers greatly impacts on the capacity to resettle these migrants. In the 47 resettlement counties in *Sichuan*, less than 10 % of villages have retained land, half have retained some five per cent and about 15% have retained some ten per cent of the land within their villages.

Conflicts between protecting the 30-years' land use rights of the host people and readjusting land to resettle migrants occurred. Some implications from the current land tenure system can be summarised as below.

1. Receiving the TGP migrants will increase the difficulty in readjusting land in the resettlement communities as the national land law bestows the rights of farmers on land not to be readjusted for a period of 30 years.

2. The conflicts relating to the limited natural resources, especially farmland, between the migrants and the host people may become serious in some resettlement locations or in the future.
3. The amount of retained land in a village is strictly controlled by the land law. There is no retained land in most resettlement communities.
4. In most resettlement locations, it is difficult to resettle migrants in a centralised resettlement pattern or form a 'migrant community' in their resettlement environment.
5. The incompatibility between the high expectations of the migrants and the land provisions becomes one of the main problems in distant resettlement.
6. Village authorities have a leading role in determining the rules on land change. The villagers' committees will assume the task to readjust and reallocate land among the host people and migrants resettled in their communities.

9.2.6 Land Readjustment

9.2.6.1 Equivalent land in trial resettlement

A principle guiding resettlement location selections in Sichuan is the 'house-centred positioning'. Contract land is next to the sites of the migrants' houses. This principle and its implementation reflect the conventional approach in which priority is always given to proper housing sites and construction in the process of resettlement.

Since the implementation of the trial resettlement in Deyang, Sichuan has adopted the following spatial pattern of resettlement: comparatively centralised resettlement at county and town level, but spatially resettling migrants to villages and villagers' groups in a scattered manner. Among the 72 migrant households interviewed, who are distributed in all the receiving towns or townships in Deyang, most have obtained 0.8–1.0 *mu* per capita of farmland, as shown in Figure 9.4. The land is suitable for rice, wheat, rape and vegetable cultivation. This group of migrants used to reside in the peri-urban towns (Zhengdong, Fengle and Hanfeng) of the Kaixian county seat and had only around 0.4 *mu* per capita of land. Correspondingly, the proportion of migrant households with 0.5–0.8 *mu* per capita of farmland dropped some 20% after resettlement. A minor group of migrant households (5.6%) owned land over 1.5 *mu* per capita before resettlement, but none has such a large parcel of land after resettlement.

To gain experience for successful distant resettlement, location selections, land readjustment and allotment in the 'resettlement trial' were fully organised and carried out under the leadership of the provincial and local governments. Most migrants believe the government could realise its commitments and allocate them land for housing building and agricultural production. The government, representing the nation's rights and interests, has the absolute power to control and manage land. While it is often partially concluded by officials responsible for the displacement that the migrants depend heavily upon the government and display a lack of self-reliance in their resettlement, the study argues that the incomplete land propriety rights of peasants in rural China is the institutional cause and result of migrants' dependence upon the government.

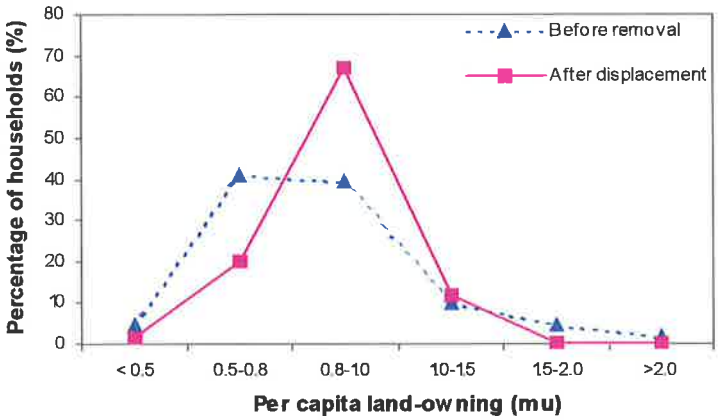


Figure 9. 4 Comparison of Contract Farmland Before and After Distant Resettlement

(per capita *mu*)

Source: The author's survey in Deyang in 2000-01.

Comparing the percentages of each class of land-holding of the host people with those of the resettlers (see Figure 9.5), the percentage of the host people with 0.8–1.0 *mu* per capita of land is lower at 32.3 points than that of the resettlers. The percentage of the host people with per capita 1.0–1.5 *mu* of land is higher at 33.3 points than that of the migrants. This comparison illustrates that most migrants have been allocated land equivalent to the average land holding of the host people (0.8–1.0 *mu* per capita). This comparison also shows that the goal to provide migrants with the same area of land as the average land owning of the host people has been achieved.

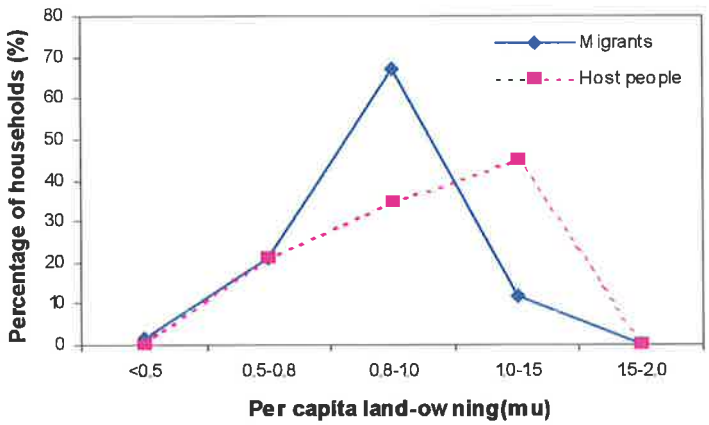


Figure 9. 5 Comparison of Land Holding Between Host People and Resettlers in Deyang.
Source: The author's survey in Deyang in 2000-01.

9.2.6.2 Land readjustment models

Model 1: Major readjustment

This is the main model in the readjustment of land from the host people and redistribution of land among all the host villagers and migrants. To resettle migrants in a large group or centralised pattern, which usually gathers over 10 migrant households together and resettles them in the same site, much land is required. No single villagers' group has adequate retained land, hence readjusting land from one host villagers' group is impossible. Land readjustment will have to affect some adjacent villagers' groups in the same village or even several neighbouring villages. All the land in the affected groups is required to be returned to the village collective(s) temporarily. In this way, a centralised plot of land close to the migrants' house locations will be allocated to the migrants. The remaining land is re-distributed to the host households.

A case occurred in Yongming Town of Santai County. More than 240 migrants were resettled in this town in 2001. All the houses of migrants were built in the town seat. The local government was unable to acquire a large amount of farmland (13.3 ha) from one villagers' group surrounding the town seat. To solve the problem of land deficiency, the first step was to completely readjust land from one villagers' group surrounding the town seat and allocate it to all migrants. Consequently, most host people in this group became landless. The second step was to readjust land from an adjacent villagers' group to compensate for land inadequacy of the host people in the first group. Ultimately six groups in two villages experienced land

readjustment. The operation of land redistributions in this model is costly and labour and time-consuming.

Model 2: Exchange land from state-owned farms

Resettling migrants on the state-owned farms can avoid land readjustment and conflict between migrants and the host people over land resources. In Hongya County, there are two farms where hundreds of migrants were resettled. One is located in the Zhongbao town seat. This farm owned about 1.27 ha of fishpond and some 6 ha of cultivated land, growing rice and wheat with natural irrigation. Over 100 migrants were resettled there. The other is situated in the Zhige town seat. It has more than 4 ha of orchard, where orange trees grow and all the trees are in the fruit-bearing season. In addition, it also has some 2 ha of rice paddies and 1.33 ha of dry land. This farm received some 120 migrants. All the original 30 or so farm workers on the two farms have been transferred under the 'social insurance and security programme'. It is worth noting that the 'social insurance and security system' in China today has been set up only for the people who hold urban residency status, rather than for peasants who hold agricultural residency status in the rural areas. The insurance premium for the farm workers comes from the 'productive resettlement funds' for offering land to receive migrants.

Model 3: Minor readjustment

In this model, land readjustment is usually confined to a host villagers' group. This model is suitable for resettling a small number of migrants. It was successfully implemented in the trial resettlement in Deyang, where one villagers' group received only 2 migrant households.

Receiving migrants is assumed to promote transferring land from some farmers (particularly those who take land as hobby farming) to migrants. In doing so the idle land can be effectively used. In the current rural society in Deyang, a considerable number of farmers do not engage fully in agriculture but work as 'floating labourers'. These people still keep their land use right because the 'household responsibility system' requires each peasant family to fulfill the national and collective tax, products, or 'burdens' on them based on the amount of contract land. It is also difficult for their entire families to renounce land and completely transit their families to urban areas. Only 12.5% of the host people investigated in Deyang responded that they partly transferred the land to other villagers. As a result, farmland is not fully utilised, especially in the peri-urban districts. Many peasants did not give priority to cultivation and at times even let their land lie idle. The authorities of the receiving villagers' committee persuades this group of peasants to give up their land to resettle migrants. In this

context readjusted land size is small. This model was widely applied in the full-scale resettlement.

9.2.6.3 Issues on land redistribution

It is very difficult to find adequate land in the urban or peri-urban areas because the land holding of the host residents in the peri-urban areas in Sichuan is small. Among the 5,795 migrants resettled in *Sichuan* in 2001, those resettled in the urban or peri-urban settings have been allocated 0.02–0.027 ha of land per person.

There is a contradiction between the governments' efforts and migrants' hopes. The government tried to allocate land to the migrants but a number of migrants prefer to have most of the compensation in cash, rather than land. Three reasons are responsible for this. Firstly, most migrants perceived the quality of the land in the resettlement locations as inferior to their land before displacement. There are no criteria to measure the adequacy and fertility of land quantitatively and qualitatively. Secondly, migrants hope to get all the 'production resettlement funds' which are allocated to resettlement villages. Each village independently determines the usage of this funding: to invest in a new development project, or improve existing production facilities, or disburse it to all host people. However, many migrants think they should at least get the same share as that allocated to the host residents as they are members of this village after resettlement. Thirdly, land is not the main income-generating source for some migrant families. They intend to earn their living mainly from running small businesses, doing casual work as 'floating labourers' and cultivating commercial cropping, such as vegetables and fruits.

Social capital losses of migrants, especially the group of migrants who used to reside in the peri-urban districts, could not be compensated by land. Compensation for their losses in land is against their will. They encounter difficulties in livelihood restoration and production reconstruction after displacement.

Under the 'household responsibility system' and the agriculture-based resettlement policy, egalitarianism is the dominant principle guiding land readjustment and allocation. Little consideration has been given to inter-family differences of migrant households, such as the labour capability, education and individual preferences. The mechanism of egalitarianism

could not enhance the extent of centralisation and its large-scale utilisation of land in the process of distant resettlement.

9.3 Critical Factors Influencing Resettlement

9.3.1 Few Income Sources

The practice of distant resettlement in Sichuan finds that the first year (especially the first 6–7 months after displacement) is an unstable period for migrants. These unstable factors can interact with one another and affect the consequences of resettlement.

As shown in Table 9.6, migrants who have been resettled in Deyang are most worried about 'reduced income', followed by 'less employment opportunity'. Another main concern is their children's education. They (as parents) hope to earn enough money to pay for their children's school education and provide them with good living and studying environments. They have experienced the process of displacement and gradually become familiar with their resettlement communities. However, they still think that methods of agricultural production are different to some extent although the differences between Sichuan and the reservoir area are not as significant as those between the reservoir area and the other 10 resettlement provinces.

Table 9. 6 What do you worry about after displacement?

Items	Multiple responses	
	Count	Percentage (%)
Reduced income	59	32.4
Less employment opportunity	29	15.9
Children's education	28	15.4
Different methods of agricultural production	24	13.2
Unfamiliarity with new environment	12	6.6
Worsening health of the aged people	9	4.9
Different dialect	6	3.3
Difficulties in restoring previous occupation	6	3.3
Worse environment	5	2.7
Different lifestyle	3	1.6
Difficulties in getting along with the host people	1	0.5
Less land	0	0
Total	**182**	**99.8**

Source: Author's survey in Deyang in 2001.

Table 9. 7 Intended economic activities after resettlement

Items	Multiple Response			
	In Deyang		In the reservoir area	
	Count	Percentage (%)	Count	Percentage (%)
Casual work	40	25.2	20	8.3
Crop farming	27	17	18	7.4
Business	21	13.2	27	11.2
Livestock farming	20	12.6	18	7.4
Commercial farming	19	11.9	25	10.3
Learning new skills and technology	13	8.2	24	9.9
Household sideline production	12	7.5	20	8.3
Tourism	3	1.9	15	6.2
Transportation	3	1.9	21	8.7
Other	1	0.6	24	9.9
Forestry	0	0	13	5.4
Processing industry	0	0	17	7
Total	**159**	**100**	**242**	**100**

Source: Author's survey in Deyang and in the Chongqing reservoir area, 2001.

As shown in Table 9.7, there exist some differences in the production activities that the two categories of migrants engage in to earn their living. For the group of migrants resettled in Deyang, their main income source is 'casual work', becoming 'floating labourers' via exporting their labour. Running businesses or developing secondary and tertiary industries such as processing industry, transportation and tourism are impossible or very difficult as they have lost all their social capital and have not much money to invest in non-agricultural activities. Therefore, agriculture becomes their major production activity (crop, livestock and commercial farming) and consequently the main income source.

In comparison, some 20 per cent of the multiple responses from the interviewed 105 migrant households to move out of the reservoir area via GODR in 2001–02 considered 'business' and 'commercial farming' as important income sources. Nearly one tenth of responses perceive that 'learning new skills and technology' is necessary for them to restore production. Engaging in transportation, casual work and household sideline production is also a prospective activity.

The investigation of the two categories of migrants reveals that the possible income sources of migrants comprise various production activities. Their responses reflect the uncertainty of income sources in their new resettlement environment. While crop farming is of importance in livelihood restoration, especially at the beginning stage after displacement, most migrants think that among the broad agricultural sectors only 'commercial farming' (e.g., vegetable

and fruit) and 'household sideline production' can generate a favourable income. The main income sources of migrants are from non-agricultural activities.

9.3.2 Claim for Compensation and Funds

Compensation is an important means for migrants to build houses, to restart agricultural production activities, or to rehabilitate non-agricultural activities. Delay or partial payment in disbursing compensation to those displaced will devaluate the real value of the compensation and possibly force them to go into debt in order to build houses, compounding the difficulties in their attempts to restore and reconstruct their livelihoods after displacement. According to the distribution principles and ratio of compensation and funds for the displaced migrants through the GODR, some items (e.g., subsidy for 'low-income households' and 'subsidy for purchasing production materials') of compensation must be paid out to the migrants monthly after their arrival at the resettlement locations. These items should be disbursed by the host governments to the migrants within the first year after displacement. House building is an important affair for the migrants. Rebuilding a large and quality house has been a glorious wish for most migrant families. Therefore, the selection of a favourable location to build houses is very important. Very often building new houses placed heavy pressures on not only the migrants but also the local government.

A case in point occurred in Jiajia town in Ziyang city in 2001. There are 95 migrants from 19 families who have built their houses in the town seat. When they negotiated the resettlement conditions with the local authorities, the migrants proposed to renounce their right of land allotment. The town has already invested quite a lot to help the migrants build houses in the township site, as the resettlement fund cannot meet the last few payments for a variety of tax, charge and fees which should be paid by the migrants. After building houses on the town seat and moving into this town, the migrants started to claim for 'production resettlement funds'.

9.3.3 Lack of Rehabilitation Plans and Measures for 'Later Assistance'

In the receiving regions there are local '5th Year Plans (2000–05)' for social and economic development. In some small cities and towns where migrants have resettled, there are 'plans for development of small cities and towns'. Migrants were mostly sparsely distributed, not

forming a centralised community in most resettlement sites. This is an important reason for the local government not to work out specific plans for migrants' rehabilitation after they moved into the community. The rehabilitation of production and development of migrants after resettlement will comply with the local development plans.

Farming is initially a major production method for the migrants during the transition period after displacement. The first step for the people displaced is to restore their livelihoods before moving on to further development. It is suggested that migrants invest their own limited funds in setting up family handicrafts, manufactures, or commerce and services in local rural areas or rural towns in order to raise capital for future development.

To achieve the objectives of the developmental resettlement, 'later assistance' should be put into practice as soon as the resettlement is completed. The proper transition period should be determined, based on a reasonable estimate of the time to restore the living standards of migrant households. Support to livelihood and production restoration can take the form of short-term jobs, subsistence support, arrangements of training and job opportunities. The period of 'later assistance' and the resource of 'assistance funds' are two important aspects. For medium and large sized hydro projects in China, the period of assistance is usually 10 years. The fixed 'assistant funds', at a rate of 0.07 *yuan*/kw.h, come from the revenue of electricity generated by the project. The period of assistance and the rate of 'assistance funds' for the TGP resettlement should not be shorter or lower than the standards set forth in the relevant regulations. It is imperative for resettlement institutions to work out an assistance policy for the TGP resettlement, including the years, standard and projects of assistance and resource of assistance funds.

9.4 Conclusion

Sichuan is a unique province which has accommodated some 9,000 rural migrants from Kaixian County in 2000–02. The province has overcome a variety of difficulties, including lagging economic level, heavy pressure of resettling a number of prospective reservoir resettlers in the coming 10 years, 'left-over problems' of resettlers caused by past hydro projects, and the daunting task of environment-related migration in the west mountainous

regions. These disadvantageous aspects are important determinants for the relevant resettlement institutions to select suitable resettlement locations.

Providing migrants with equivalent land is a preliminary measure of resettling migrants, but land alone may not ensure the success of resettlement. Other factors, including the level of economic development, land quality, market accessibility and agricultural production measures, will influence the migrants' decision about their distant displacement. Land readjustment and redistribution in most of the resettlement communities are unavoidable. Resettling migrants in agricultural sectors discourages their movement into non-farm employment. For those displaced who do not intend to engage in agricultural production, substituting their original non-agricultural income sources for land is not a favorable approach.

Most resettlement villages in Sichuan have no retained land after the completion of the second term of the 30-year land tenure reform. In most locations, readjusting land by adopting three models or a combination of them is imperatively required. Land readjustment and redistribution in rural resettlement, as a trade-off for social equality and equity between the migrants and the host people, is difficult in practice, particularly in the peri-urban or urban areas. Three principal models for land readjustment have been applied, including 'major readjustment', 'minor readjustment' and 'exchanging land from state-owned farms'. Some host people would like to give their land to the migrants mainly from two considerations. One is that land is not the main income resource of their families. The other is the economic incentive of the available compensation for receiving the TGP migrants. Some migrants tend to ask for more compensation in lieu of land due to the low profits generated from agricultural production and the immediate benefits of cash compensation. The land-induced contradiction between the host people and migrants may likely occur in the future.

Sichuan has adopted the 'fill-in resettlement' pattern, combining 'concentrated resettlement' at county and township level with 'scattered resettlement' at village and villagers' group level. The degree of concentration of resettlement pattern in the 'trial resettlement' in Deyang in 2000 is lower than that in the full-scale resettlement over the province in 2001–02. A large number of migrants have been resettled in peri-urban areas in massive resettlement, rather than mainly in the rural areas in 2000.

Several main factors have been identified as hindering the stability in the resettlement areas and livelihood rehabilitation of migrant households. Most of the migrants are most worried about the scarcity of income-generated sources after displacement. Agricultural activities (crop and commercial farming) are the initial measures to restore livelihood and production during the transition period after resettlement. However, non-agricultural activities are regarded as the main income sources for most migrant households. Inadequate compensation and funds is another factor which has limited the capacity of migrants to invest in livelihood and production restoration. While allocating a plot of land to every eligible migrant, emphasising providing migrants with non-agricultural employment and skills training for migrants in the destination areas needs to be addressed.

Chapter Ten

PREDICAMENT OF RURAL WOMEN DISPLACED BY THE THREE GORGES PROJECT

Based on empirical investigations, this chapter examines the status, roles and some development issues of rural women displaced by the TGP. It reveals that some important gender-related aspects are not improved during involuntary displacement. Woman resettlers are more likely to become impoverished than men, remaining in the agricultural sector partly because women are the main labour force. Marriage is a means for some women to remain in or move to the reservoir area to improve their socio-economic status, but bias against granting of 'migrant' status to married women, and their generally low levels of education and limited skills are critical issues. It is imperative that the authorities integrate a gender perspective into the policies and design of resettlement schemes.

10.1 Introduction

10.1.1 Involuntary Displacement and Gender Inequality

While there has been considerable research on development-induced displacement and resettlement (DIDR) (Scudder and Colson 1982; Downing 1996; Mathur and Marsden 1998; Cernea and McDowell 2000), the gender dimension is often omitted (Adams 2000). The people displaced are conventionally referred to as a genderless entity, rather than as women and men with different interests and aspirations (Mehta and Srinivasan 1999). Colson (1999) observes that resettlement and rehabilitation plans tend to be flawed in their understanding of the effects of resettlement on the roles of women and men. Literature on how involuntary displacement affects the status, roles and development issues of female resettlers remains very limited (Parasuraman 1993; Sweetman 1998). This chapter, based on examination of

woman resettlers displaced by the TGP in China, attempts to make some contributions to this field.

Equality and development are the great goals in women's pursuit for more rights, in the family and in society, and in the economic, political, social, and cultural fields (United Nations 1995). In China, regulations and laws (e.g., laws on land, labour and marriage) have acknowledged women's status and roles in the family, society, economy and the other spheres as being the same as men's. It is notable that women's decision-making capabilities and influences in the domestic field have been enhanced (West *et al.* 1999; UNDP 2001). Women's social status in China showed significant improvements in most aspects during the 1990s (ACWF and CNSB 2001). Women's concerns have been integrated into the legislative framework and national socio-economic development plans, such as the '*Women's Interest Protection Law*' (1992), the '*10th Five-Year Plan (2001–05)*' (NPCC 2001) and the '*Outline of Women's Development in China 2001–10*'. Nevertheless, there are vast differences in the status of women from urban and rural areas, and between those voluntarily and involuntarily displaced. Despite the government's effort to empower women, gender inequality has not improved (Park 1992; Hughes and Maurer-Fazio 2002). Women can access only limited resources and opportunities. Major problems encountered by rural women are identified as heavy physical labour, low levels of education, and poor access to technological information (Kramatate and Spender 2000). The majority of woman migrants are still trapped in the agricultural sector, receiving the lowest respect and payments (Huang 2001).

10.1.2 Limited Study of Woman Migrants

The economic transition from a planned to market-oriented economy has brought about profound changes in internal population migration in China since the 1980s. The transition to a market-oriented economy has weakened the function of the 'household registration system' (*hukou*). Regional disparities in economic development among the three regions (coastal, central and western) have generated a 'tidal wave' of rural labourers migrating to urban areas, especially to the coastal regions (Roberts 1997). Massive numbers of women have voluntarily

joined the out-migration (Fan and Huang 1998; Zhang 1999a). Most of them are independent, self-motivated and economically oriented movers (Fan 1999). The wide disparities between urban and rural regions and severe population pressure on farmland are major factors influencing rural women's decision to migrate. Aspirations for improvements in their material, cultural and social lives, and an expectation of greater freedom, together with new knowledge and experiences have also played a key role in young women's determination to move out of their hometowns (Zhang 1999b).

In China, research on women's issues did not emerge until the mid 1980s because of its particular social-political background (Min 1999). Since then, considerable studies have focused on dealing with temporary and voluntary migration (Goldstein, A. *et al.* 1991; Goldstein, S. and Goldstein, A. 1991b; Yang 1994, 1996; Goldstein, A. and Goldstein, S. 1996; Yang and Guo 1996; Roberts 1997). Yet these studies mostly lump men and women together, or take gender as just one of many independent variables to examine migration differentials (Zhang 1990; Shen and Dong 1992; Yang and Guo 1999). Limited research has been carried out on involuntary migration, especially DIDR (Li *et al.* 2001). Research on female migration, though limited, has concentrated on the role of gender in the migration progress (Pedraza 1991; Chant and Radcliffe 1992; Wei and Ma 1996), and on the patterns (He and Pooler 2002), dynamics and social problems of temporary migration (Liu 1990; Fan and Huang 1998), with little attention paid to woman resettlers who are involuntarily uprooted.

10.1.3 Methodology

The structural approach explains female migration in the contexts of historical transformations of national and regional economies, sociocultural constraints, and the gendered segmentation of the labour market (Bennholdt-Thompson 1984; Caplan 1985). The *hukou* system, the local labour market, the status of women, contemporary economic and spatial restructuring, and resettlement policy and schemes constitute a set of structural drivers that impose constraints or produce opportunities for the displacement of women and their

families. In the contexts of broad rural-to-urban migration, issues of socio-economic transformations, specific resettlement policy and regulations, displacement and resettlement associated with the TGP have become more complex and diversified in nature.

This chapter is based on empirical investigations of the situation of woman resettlers, especially rural women displaced by the NR and GODR schemes. Hence, information about the situations of female migrants can reasonably represent the overall picture of woman resettlers. In-depth structured interviews, surveys and sample community investigations have been principally conducted among those who have been moved out under the NR and GODR scheme and those who will be moved out via the GODR scheme. The women and their husbands from 141 migrant households were interviewed in depth.

10.1.4 Scope

This chapter focuses on the current situation of woman resettlers associated with the TGP: their roles at household level, socio-economic status, and developmental issues. Three variables which shape their situations are analysed: institutional factors (e.g., *hukou*, resettlement policy and implementation), status of women (e.g., education) and economic factors (e.g., productive activities). The analysis will address women's perceptions of the migration process, the socio-economic status of women at household level, and some critical women's issues which restrict the resettlement process.

10.2 Women's Perception in the Resettlement Process

10.2.1 Holding Out for a Better Bargain

Many of the woman migrants surmise that those not displaced until the very last moment will receive more advantages, benefits or compensation. Hence, they deliberately delay the moving process. In Kaixian County, displacement will mostly be implemented in the latter

stage of the resettlement schedule (2004–09). Most woman migrants, especially those residing in the peri-urban districts of the county seat, would not like to be displaced earlier because they believe that they are currently enjoying stable incomes and favourable living conditions, as discussed in section 7.3. The survey in Dalin village reveals that 65.8 per cent of 1,679 resettlers (half of whom are female) from 526 households insist on not moving out till 2008.

10.2.2 High Expectations

The Chinese government has committed itself to be accountable for the displacement and resettlement associated with the TGP, mainly through policy building, planning, organization and implementation of resettlement schemes. However, the administrative functions of the government often clash with market forces. Lack of migrants' participation, for example, in the selection of resettlement locations has increased their dependence on the government and resulted in many problems relating to house building, land allotment and the migrants' reluctance to move. Nonetheless, under the socialist market economy, the ultimate improvement of their livelihood and production eventually depends on the efforts and abilities of the displaced resettlers themselves. The expectations of the woman migrants' included the opportunity to receive more compensation and so improve their lives by seizing this unprecedented opportunity of relocation; to change their *hukou* status from rural to urban residence as an improvement of their social and economic status; and to rely upon the government to restore their livelihood and reconstruct production after displacement.

As Table 10.1 shows, a quarter of the interviewed 32 female migrants resettled in Deyang and nearly half of the 33 female migrants to be moved out through GODR in 2001–02 considered resettlement to be the responsibility of the government. While more than half of those in both categories perceived resettlement as the responsibility of both parties, few considered it as their sole responsibility. Note that a quarter to half of the interviewed women regarded it as the full responsibility of the government. Some of them perceived themselves as special persons and thus took the government's assistance for granted. In their desire to lay claims to

more favourable resettlement terms, they cited the better quality land and higher compensation received by other migrants via the GODR or other resettlement schemes as examples of what they felt to be their rightful entitlement.

Table 10. 1 Who should be responsible for distant resettlement?

Responsibility	Female migrants already resettled via GODR		Female migrants to be resettled via GODR	
	Responses	% of the responses	Reponses	% of the responses
Government	8	25.0	11	47.8
Migrants	4	12.5	0	0
Both the government and migrants	20	62.5	12	52.2
Total	**32**	**100.0**	**33**	**100.0**

Source: Author's field surveys in the Three Gorges reservoir area and Deyang city in Sichuan province, conducted in 2001.

10.3 Socio-Economic Status of Women at the Household Level

10.3.1 Women's Role

The authority of Chinese women versus that of men has been enhanced by institutional changes and policy measures (Zhang 1999a). Yet thousands of years of traditional views, in which the women in a family manage household domestic chores and the men control external affairs, have not altered greatly. Men and women have been assigned to play different roles by the society and families. The Chinese rural society and families have placed men in the economic role (bread earners) and women in the familial role (caregivers). Migration decisions are usually made in the context of the household and by the household head.

In the reservoir area, many surplus male labourers leave home to engage in non-agricultural jobs as 'floating labour'. In Kaixian County, for instance, forty-five per cent of the rural labour force is surplus in both peri-urban towns (Hanfeng, Fengle and Zhendong) and purely

agricultural areas (e.g., Qukou) (KPIR 2000). A quarter to one third of them work outside the reservoir area. Most of them are male and young. Agriculture is not the main income source of the farming households, due partially to the reduction in the comparative productivity of agricultural production. The 'comparative productivity' ratio, a proportion of the output of a productive sector (percentage in income) divided by its employment percentage, can reflect the income difference between the productive sectors.

Table 10. 2 Comparative productivity between agriculture and other sectors

Proportions	Towns			
	Zhendong	Hanfeng	Fengle	Qukou
Employment (%):				
Agriculture	52.9	55.2	56.5	55.2
Industry	1.3	1.4	1.4	0.9
Construction	6.7	10.2	19.9	2.4
Transportation	1.5	2.1	3.9	0.6
Service	2.2	8.7	4.8	1.9
Other	35.4	22.4	13.4	38.9
Income (%):				
Agriculture	30.2	38.2	18.1	85.6
Industry	27.9	5.9	7	2.1
Construction	30.9	16.7	64.1	2.3
Transportation	2.9	7.2	4.4	2.7
Service	6.2	25	3.7	4.9
Other	1.8	6.9	2.8	2.3
Comparative Productivity				
Agriculture	0.6	0.7	0.3	1.6
Industry	21.5	4.2	5	2.3
Construction	4.6	1.6	3.2	0.9
Transportation	1.9	3.4	1.1	4.5
Service	2.8	2.9	0.8	2.6
Other	0.1	0.3	0.2	0.1
Agriculture/Non-agriculture	0.4	0.5	0.2	4.8

Note: Comparative Productivity = Income (%)/ Employment (%). The data are based on aggregated town level statistics.

Source: Kaixian Primary Industry Bureau: Statistical Yearbook of Rural Economy in Kaixian 2000.

As illustrated in Table 10.2, the comparative productivities of agriculture to non-agriculture in the peri-urban districts are less than 1, indicating that agricultural productivities in these areas are lower than non-agricultural productivities. By comparison, Qukou, an agrarian area 14km south of Kaixian County seat, has a much higher ratio of 4.8. In addition, the comparative productivity ratio of agriculture (1.6) on its own is much higher than the corresponding figures of the peri-urban towns. Income dominantly comes from agriculture. Still, about one third of the labour force leaves the town to seek non-agricultural opportunities, leaving a vulnerable group comprising women, children and the aged. Women play a central role in the family, caring for children and the aged. Few women, particularly those living in the purely agrarian areas, participate in social, cultural and economic activities. Their exchange and trading activities are confined to local transactions which are narrow in scope.

10.3.2 The Main Labour Force in the Agricultural Sectors

While men have more opportunities of pursuing non-agricultural activities, women play an increasingly key role in agricultural production (Bossen 1994). Young girls in rural areas are usually under pressure to leave school early to help with farming (Min and Eades 1995).

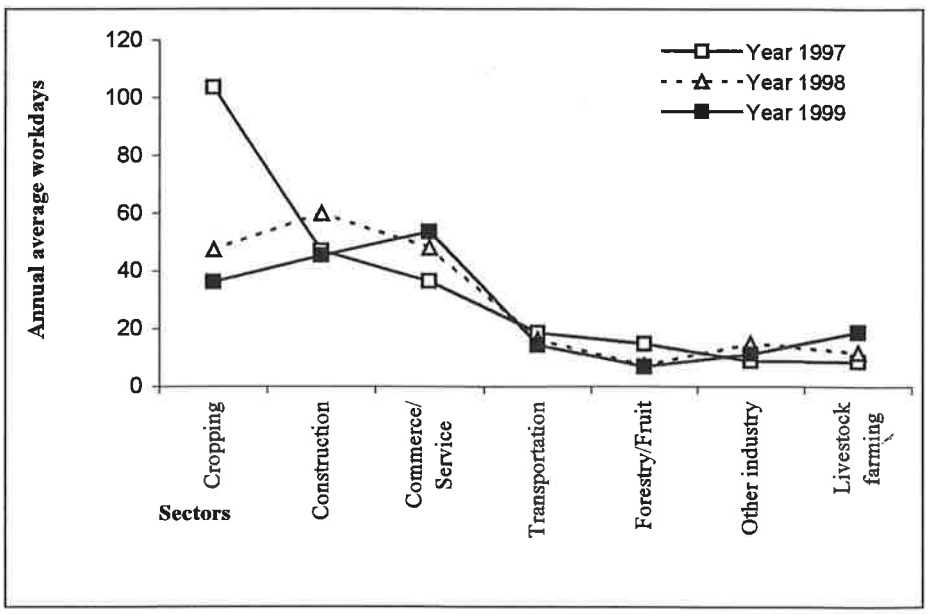


Figure 10.1 Annual Workdays of a Male Labourer in 1997–99

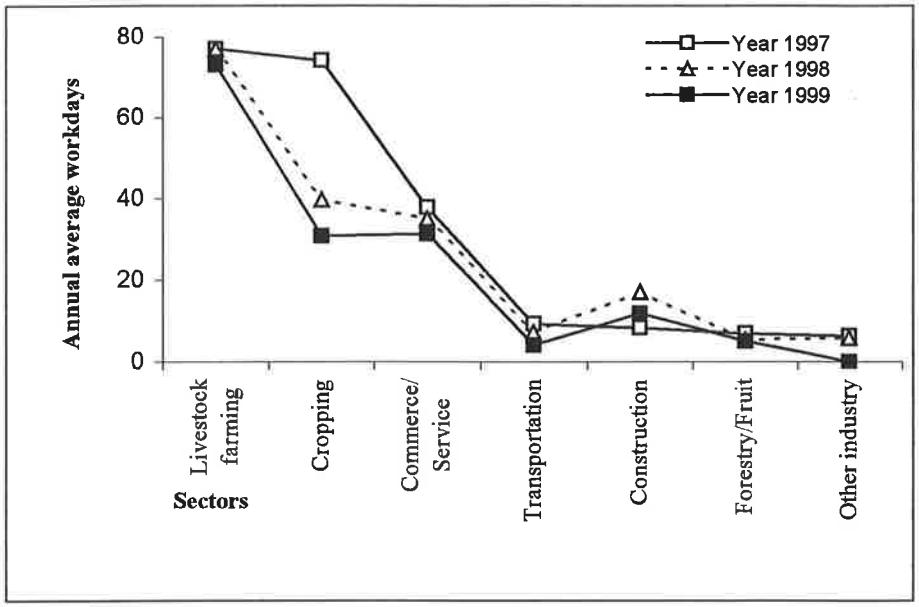


Figure 10.2 Annual Workdays of a Female Labourer in 1997–99

Source: Compiled from the investigation conducted by the Institute of Mountain Hazards and Development, Chinese Academy of Science, between 1997 and 1999.

The investigation into the host people and migrant households that have been displaced via the NR scheme was carried out annually between 1997 and 1999. Sixty-eight host households and eleven migrant households (which were fully resettled in August 1999) were investigated. The data reveals gender differences in local employment (Figures 10.1 and 10.2).

In cropping and the forest/fruit production sectors, the average workdays of a male labourer are slightly more than those of a female. Yet in livestock farming, the workdays of the female labour force far exceed those of the male. The employment percentage for the female labourers engaging in agriculture showed a marked increase between 1997 and 1999, while the percentages for the male labour force declined. Male labourers were generally employed for more days in a year than the female. However, female labourers worked significantly more days in agricultural sectors.

The total workdays for male labourers in secondary and tertiary positions were about two or three times those of the females. Although the workdays of men in non-agricultural work fluctuated over the three years, they were still disproportionately higher than those of women. In addition, there was a shift from agriculture-related activities to non-agricultural activities

for the male labourers, while women were forced to quit or failed to enter non-agricultural activities as a result of the low level of local economic development and the lack of capacity to absorb rural labourers, especially woman migrants. In 1997, there was a slight increase in the number of female labourers employed by the commerce and service sectors, but they were replaced by male labourers in 1998 and 1999. In 1997 and 1998, there were some female labourers employed by general industry, but in 1999, no woman was hired. The re-building of the urban areas and infrastructure (mainly transportation) due to the inundation of the reservoir has stimulated demand for workers over the past decade, especially between 1997 and 1999. These sectors, which require physical strength and endurance, preferred male labour. The strong preference for hiring male labourers causes female labourers to be at a disadvantage in obtaining non-agricultural employment.

The findings from in-depth interviews of twenty-three rural migrant households to be displaced via the GODR further verified the two aspects. Firstly, the main income source of migrant households was not from agricultural production, which only accounts for around thirty-five per cent of the total revenue, but from non-agricultural activities (secondary industry, service and casual work), making up some sixty per cent of the total. Secondly, women in migrant households were the main labour force in the agricultural sectors of both crop and livestock farming.

In the rural reservoir area, as in many other rural areas in China, the gendered division of labour within the farming households is such that the women are the farm labourers and the men work in non-agricultural sectors. This model is perceived to be able to increase the revenue of the household, especially in the peri-urban settings near county cities and township sites. However, it can also restrict women's access to material resources and economic opportunities. The difference in occupation has a substantial impact on income levels, because the returns from agriculture (especially grain production) rank at the bottom compared to other income opportunities in China's new economic context (Oi 1999). As a result, the income of rural women is generally much lower than that of the men. The gravity of decreasing agricultural incomes of peasant households has been a major issue nationwide

since the early 1990s (Zhang 2001).

The further feminisation of agriculture in the reservoir area shows that most women are unable to achieve occupational mobility and shift from agriculture to secondary or tertiary industry through displacement. Land or agriculture-based resettlement has aggravated the difficulty of such transformations for woman resettlers. Unemployment and underemployment are serious problems faced by the migrants. The surplus female rural labour force aggravates the problem, as does the surplus male labour force. In the process of resettlement, women have less adaptability, mobility and diversity in their choices than men in transferring from traditional agricultural sectors to non-agricultural ones. This is particularly the case with industries such as construction and transportation, which recruit specifically male labour. Furthermore, recently initiated industrial restructuring, merging and closing down of small and non-profitable enterprises within the reservoir area will lead to at least over 200,000 employees being laid off (Fang and Chen 2002). More than 4000 people who have already been settled into these enterprises will have to move back into the agricultural sectors. It is much harder in an intensively competitive labour market for the laid-off resettlers, especially women, to seek suitable new non-agricultural jobs, compared to other laid-off workers who are urban residents, due to their lack of skills and relevant social networks, and low education.

The educational differences between the two genders provide further explanation as to why woman migrants experience more difficulties in the transition from agricultural to non-agricultural sectors in adapting to their new environments after displacement. In the lagging reservoir areas, accessibility to education differs greatly for women and men. Even though there has been an increase in the number of years of schooling for women between 1997 and 1999 (Table 10.3), the years of education obviously lag behind those of the male. Comparing the schooling years of both the men and women in the investigation with the national levels, the numbers are less than the national 6.62 years for women and 8.1 years for men in 1999 (CNSB 2000). To improve the situation of the female migrants, it is imperative to solve both issues of transmitting surplus female labour and enhancing their

self-development capability in re-establishing livelihoods and production after displacement.

Table 10. 3 Gender gap in formal education

Year	Male		Female	
	Population	Average years	Population	Average years
1997	100	6.54	97	5.51
1998	95	6.68	93	5.61
1999	95	6.83	92	6.07

Source: Compiled from the investigation conducted by the Institute of Mountain Disasters and Development, Chinese Academy of Sciences, between 1997 and 1999.

10.3.3 Likelihood of Economic Impoverishment

Agriculture-based resettlement policy and its implementation might increase the likelihood of rural woman migrants becoming more impoverished than males. If the land in a village could not accommodate the resettlers, they will be moved out of the village or the town but can still remain in their original county. The big issues in land provision are inadequate quantities and low quality of the land. In some resettlement locations, basic production conditions, especially irrigation, have not been provided for. Of the seventy migrant households investigated, who have been resettled uphill, some seventy per cent of the women respondents confirmed that the quality of their allocated land was worse than their original land. They further confirmed that the yield from 2 *mu* of land uphill was less than that from merely 1 *mu* of their land in the narrow riverine plains before displacement. Most migrants who had been displaced uphill before 1998 received only 0.4–0.6 *mu* of land per capita, rather than 0.8 *mu* which the local government promised. In addition, the cultivated land is mainly distributed on steep slopes of gradient of twenty-five degrees or greater, which is infertile with thin topsoil and earmarked to be returned to forest or grassland according to the national reforestation policy. It is scarcely possible for a female migrant to maintain a sustainable livelihood for her family relying upon such a tiny plot of infertile sloping land. Land provision affects woman migrants more than men because they (the women) are the main labourers working on their land.

10.4 Main Women's Issues Affecting the Process of Three Gorges Project Resettlement

10.4.1 The Right to Information

As their lives are very closely linked to their domestic affairs and the land, woman resettlers have strong desires to obtain information on displacement and resettlement policy. They obtained such information mainly through village meetings, official propaganda, and government-organised visits to distant destinations. They expressed dissatisfaction with the limited means of receiving information, predominantly the one-way nature of communication and lack of transparency in governmental policies. They are very confused and find it hard to fathom the advantages and disadvantages of the various resettlement schemes. They are eager to broaden their information channels, through adopting alternative forms that they can easily accept and understand.

10.4.2 The Right to Participation

Female migrants have few opportunities to participate in the decision-making process of displacement and resettlement in their communities. Before a household formally moves, resettlement agencies and relevant authorities in a sending county will organise a visit to the receiving areas, attended by one member from each household. Each representative will be required to sign a contract regarding rebuilding or purchasing houses with the township government in the receiving communities. More often than not, the participating member is male, as women have traditionally been playing a secondary role in decision-making, especially of important affairs, and are less willing to take risks when dealing with unexpected events.

10.4.3 Changing Status of 'Agricultural Population'

Woman migrants as well as men hope to change their *hukou* status from 'agricultural population' to 'non-agricultural population', by moving out of the countryside and into urban or suburban settings. Some eighty per cent of the seventy woman migrants who have been displaced by the NR scheme still held on to their hopes of being settled in a city or town, or transferring to secondary and tertiary industries (Table 10.4).

Table 10. 4 Preference for resettlement of migrants resettled by near resettlement

Preference for resettlement	Responses	% of the responses
In a city/town	38	54.3
In secondary/tertiary industries	19	27.1
In the primary sectors	4	5.7
No big difference	3	4.3
Do not know	6	8.6
Total	**70**	**100.0**

Source: Author's field surveys in the Three Gorges reservoir area, conducted in 2001.

The status of *hukou* not only defines the general well-being but also the social and economic status of people. People registered as non-agricultural can enjoy much more state welfare (such as grain rations, non-agricultural employment, housing, medical service and pensions) than those with agricultural status. The status of *hukou* was inherited from a person's mother until a new policy announced in 1998 (allowing children to inherit *hukou* status from either their mother or their father). It is extremely difficult for an 'agricultural' person to obtain 'non-agricultural' status because such transitions are strictly controlled by the local government. The unique institution of *hukou* in China has prevented rural residents from accessing benefits and opportunities in urban areas although they can voluntarily out-migrate as 'temporary labour' or 'floating population' (Fan and Huang 1998).

Woman resettlers have higher expectations and more demands than male migrants, and they are more inclined to think of their status' transformation through the displacement process as a means of compensation for their sacrifice for the national interest. The Resettlement Expert

Group (REG 1988) of the TGP projected that about forty per cent of rural persons might be resettled in secondary and tertiary sectors, eventually transmitting their status from rural to urban residency. Due to the deepening reforms of the state-owned enterprises since the late 1990s, substantial numbers of workers have been laid off. Non-agriculture-based resettlement has proved a failure. The government reiterated the principal of using land or agriculture-based resettlement as the basis of resettling rural dwellers in the resettlement policy and regulations. Rural resettlers cannot change their *hukou* status, even though some of them are resettled in county city or township sites, while others are no longer engaged in agricultural production. Alternatively, rural resettlers hope to have favourable resettlement locations, such as a county city, township site or the peri-urban area, which might provide them with more opportunities to make a living. Rural-to-rural or horizontal mobility of migrants, regardless of whether this is via near resettlement, government-organised or voluntary distant, is an outstanding feature of the TGP rural resettlement.

10.4.4 'Marrying into' the Reservoir Area

In China, where women continue to be subjected to various constraints limiting their social, economic and physical mobility, marriage, as a social institution (Wolf 1972), is adopted as a strategy by some women seeking to improve their social and economic status through migration (Fan and Huang 1998). 'Marrying into' the reservoir area can bring the husband's family at least three direct benefits. First, the married woman is eligible to be considered as 'productively resettled population' (PRP). Such persons can receive compensation both in cash and in kind. Second, the husband's family gains a member of their labour force. Third, their children will be granted the status of PRP if their births do not violate the national family planning policy, or the couple has paid penalties for the children born in excess of the allowed number. Obtaining more compensation and funds is not an uncommon motivation that hastens the voluntary displacement of the migrants. The men residing in the reservoir area present strong attractions for women who lack other means of retaining or moving their residence to the reservoir area. The pattern of marriage in the reservoir area has changed since the implementation of the TGP. Few rural women would like to marry men residing

beyond the reservoir area, while women living outside the reservoir area try to move into the reservoir area through marriage. As a result, the population in the reservoir area has steadily increased over the past decade (CSB 1999, 2002). Early marriages and births are common. It is difficult for the authorities responsible for resettlement and family planning to control the increasing number of resettlers by curbing the natural population growth. This is an important factor for the increasing number of resettlers, varying between 1.1 million (REG 1988) and 1.9 million (Dai 1998).

10.4.5 Biased Practices in Granting 'Migrant' Status to Women

Investigations found that married women are often subjected to restricted entitlement of 'migrant' status. To understand the discrimination in granting migrant status to married women, it is necessary to take a further look at the practical work carried out on the ground by grassroots leaders. Each county affected by the reservoir flooding is assigned the task of resettlement and granted a fixed amount of funds and resources which will not be revised upwards throughout the years required to carry out the entire resettlement exercise. This stringent agreement between the grassroots and higher levels of administration give rise to what is termed the 'dual contract' (*shuang baogan*) of the TGP.

The funds and resources made available to the grassroots leaders have been calculated from the estimated size of the migrant population and theoretically, should suffice. Unfortunately, in reality, there frequently exist deficits, especially in land resources. Since there is little possibility of increasing resources, the obvious alternative is to reduce the migrant population. Because sexual discrimination occurs, those denied migrant status are mostly women. The status of women is further eroded by deeply rooted traditional and feudal views that women are essentially accessories to men and that once married, they are the sole responsibility of their husbands' families.

As the day to day running of the resettlement process lies in the hands of the grassroots leaders, it is consequently up to them to decide on the fate of these women. The local cadres

at the village level adopt a mix of 'village rules and customary practices' (*cungui minyue*) and 'autonomous management by the villagers' (*cunmin zizhi*) to decide on the married women's eligibility. In some places, three sons from each family are allowed to transfer their wives' residence registrations to the reservoir area, thus entitling the women the status of migrants. However, where there are three married daughters in the family, whose husbands' residence registrations are outside the reservoir area, only one of the husbands is allowed to transfer his residence registration to the reservoir area as a 'secondary migrant'. The other two married daughters must, instead, transfer their residence registrations to those of their husbands and unconditionally accept the revocation of their migrant status. In fact, there exists in Kaixian County an official document (No. 83 of [1999]) which stipulates that married women in the following two situations will not be entitled to the status of a migrant: (1) those who left their villages after marriage but have returned; and (2) those who have retained their *hukou* in their original villages even though they are married to persons outside the reservoir area. Although this measure is highly discriminatory, it is presented as an acceptable method when there is no other satisfactory way of controlling the increasing migrant population. The director of the Agricultural Resettlement Section of KRB touched on this issue when interviewed on 19 February 2001.

Such a solution to this gender issue will have at least two consequences. Firstly, it will erode the migrants' views of law and order. They learn that the rules of their villages, though arbitrary, are more powerful than the national law and regulations. Secondly, it will reinforce and consolidate existing feudal views. It certainly appears that the national fundamental policy of 'equality between men and women' exists only in theory.

10.4.6 Low Quality of the Female Labour Force

People are the key factor in the development process (Jones 1992). Education enables a society to accumulate the technical, managerial and entrepreneurial skills required for overcoming physical, environmental and natural resource constraints to development, enhancing productivity, raising living standards and alleviating poverty (Farooq and Ofosu

1992). More important, education can change women's views of their roles at home and in the society, increase their self-esteem, inspire them to fight for gender equality and search for opportunities to improve their status within and outside the home. Women are 'dual producers', producing tangible and intangible wealth and human resources. The quality of female migrants dictates the overall quality of migrant households to a great extent. However, their low educational level, limited knowledge and few acquired skills are the most serious barriers to their development. Of the 141 female migrants interviewed, about thirty per cent have senior high school education or higher, but the most of those are from the urban areas. Over two thirds have only primary and junior high school education. In the reservoir area, the percentage of school-age girls discontinuing studies is high: the reasons are poverty and the need to work.

Owing to the nature of primary production in the reservoir area, such as grain cultivation and pig-centred livestock farming, female migrants have acquired very limited agricultural production skills. Their responsibilities in a family are basically crop cultivation, pig-feeding, childcare and housework. It is difficult for them to adapt to new agricultural production measures. This problem has manifested in some resettlement locations where the typical agrarian products are paddy rice, oilseed and cotton. The required practical knowledge and skills differ from those in the mountainous reservoir area, where fruits, especially orange plantations, wheat, corn and other dryland grains are the main products.

10.5 Conclusion

The situations of woman resettlers produced by the TGP have to be understood in the institutional, political-economic, and sociocultural contexts in China. The structural factors have restricted woman migrants' opportunities for development and to improve their socio-economic status in the process of displacement and resettlement. The disadvantaged position of woman resettlers has not been improved in the process of displacement, although there are some improvements at household level, e.g., better housing conditions. In rural

resettlement, the rationale of a 'developmental resettlement' policy is to provide the entitled migrants with appropriate compensation, farmland, productive conditions and social services to help them re-establish their livelihoods and production in the resettlement communities. The 'two adjustments' in the resettlement policy are to ensure the sustainability of development in the reservoir area through industrial restructuring and moving out some of the rural migrants. While these changes may have brought about opportunities for woman migrants, much of the benefits eventually went to the men.

Land or agricultural based rural resettlement is a critical factor that reinforces the 'feminisation' of agriculture. While surplus male labourers can seek non-agricultural jobs within the reservoir area or leave home as 'floating labour', women are left behind at home, working on the farmland and caring for the family. Social prejudice, the low quality of the labour force and limited skills are principal causes. Women are rarely employed by secondary or tertiary sectors; agriculture is essentially their only choice for existence and development. However, the land allocated to them is inadequate in quantity and quality. Due to decreasing agricultural income, woman resettlers are more likely than men to become economically impoverished in the transit period after relocation.

Woman resettlers hope to improve their social and economic status by transforming their agricultural household registrations to non-agricultural ones. However, the permanent transfer of *hukou* status is still strictly controlled by the relevant authorities. Marriage is used by some women to receive the status of migrants. 'Marrying into' the reservoir area can bring the husband's family additional labour force and more resettlement compensation and funds. It is difficult for the resettlement and family planning authorities to control the increasing migrant population. Local policy prohibits married women from staying in the reservoir area and does not entitle them to the benefits of migrants, contrary to the national marriage law. Women have limited opportunities to participate in the decision-making process of displacement. These findings suggest that the gender perspective needs to be integrated in the resettlement policy and schemes.

Chapter Eleven

CONCLUSION

This chapter concludes the thesis by bringing results from previous chapters together and discussing the principal findings of this study. Section 11.1 provides a general picture of dam and reservoir construction in the world, especially in developing countries (including China) and contemporary migration in China. It addresses some major findings of the consequences and causes of involuntary resettlement produced by hydro projects. In section 11.2, critical issues which impact on the sustainability of rural resettlement are revealed by examining resettlement strategies and their implementations, based on the results of the study. In section 11.3, issues concerning the 'government-organised distant resettlement' (GODR) are considered by summarising the nature and problems of the new resettlement approach. Impacts of relocation on the situations of the vulnerable group, women resettlers, are summed up in section 11.4. Section 11.5 sums up the major methodologies used in the thesis, employing GIS techniques to analyse population carrying capacity of land and assessment frameworks for the impacts of displacement on environment and socio-economy. Building on all of these findings, contributions of a 'developmental resettlement' associated with the TGP to the general theory and practice of involuntary migration and settlement are presented in section 11.6. The last section suggests directions for further research.

11.1 Involuntary Resettlement: Impoverishment and Development

Resettlement of people displaced by infrastructure projects such as hydro projects is an important development issue, with concerns about the economic, social and environmental consequences for the displaced population being paramount. Development-induced displacement resulting from dam and reservoir construction has become common during the past half century in developing countries, especially China, India, Thailand and Indonesia. At present about 2 million people are displaced by large dams each year. Most dams and reservoirs are situated in rural areas. These areas are usually characterised by poverty with scarce land resources and extremely limited human carrying capacity of the land. They are often fragile upland environments with potentially serious water and soil erosion, lagging in

socio-economic development and having low literacy rates among the recipient population. As a result, a variety of issues have been arisen: degradation of river ecosystems, irreversible inundation of fertile land, political and societal instability and severe impoverishment of the persons relocated.

Research into forced migration and displacement has increased rapidly during the last decade. Researchers from different disciplines have attempted to probe into various displacement events and have generated some theoretical models and methodologies. However, recent studies on developmental resettlement have identified areas still requiring investigation, among them demographic theory of involuntary migration and resettlement affected by development projects. The involuntary resettlement issue has been regarded as a huge problem for China with the ongoing Three Gorges Project (TGP), involving 17 years of displacement and resettlement of over 1.3 million people by 2009. This project has special political, demographic and socio-economic characteristics that differentiate its resettlement policy and approaches from any other. Research into the consequences of the development-induced displacement and resettlement (DIDR) is a major research field of involuntary migration and resettlement. Yet studies on strategies for overcoming these potential risks or stresses after resettlement are lacking, particularly in the huge TGP resettlement.

Chapter 2 provided a number of examples and cases to illustrate the consequences and causes of involuntary displacement and resettlement caused by the constructions of dams and reservoirs. After reviewing reservoir resettlements from both a global (especially developing country) and Chinese perspective, it is found that the development of hydro projects not only brings about benefits to a nation but also generates socio-economic, environmental and cultural problems for the affected people and areas. Human displacement and resettlement involving dam and reservoir construction is characterised by compulsory, non-selective and mass removal. Most displaced people experience a transition period in which they suffer from both a decline in household income and an increase in socio-cultural stress, as the 'stress model' revealed. The 'impoverishment risk and reconstruction' (IRR) model is a useful tool to analyse the principal potential risks and to seek counter-measures to cope with them. Permanent land losses and inadequate land provision, the lack of legal and regulatory instruments, inadequate preparation for implementing displacement and resettlement, deficient compensation, incomplete resettlement planning, insufficient participation, under-estimating relocation and ignorance of social integration are typical problems in resettlement. Consequently, the reservoir resettlers have encountered a variety of difficulties in restoring

their livelihoods, reconstructing production and adapting themselves to their new environment after resettlement.

The 'development-oriented resettlement' perspective has drawn the attention of the international institutions, e.g., World Bank, and numerous scholars. The principal objective of 'development-oriented resettlement' is to provide the displaced persons with the necessary conditions for production, such as farmland, infrastructure and social services in rural resettlement, rather than simple and one-off monetary compensation. However, practices of developmental resettlement remain limited in the world. The TGP resettlement is being carried out in the contexts of the social and economic transformations and contemporary migration in China. The unsolved 'left-over problems' of resettlers produced by past dam projects, negative impacts of numerous 'floating labourers' caused by rural-to-urban migration in urban areas, the special policy on urbanisation and problems of the low employment capacity in urban areas have strongly affected the resettlement policy and approaches to relocating the people produced by the TGP. Resettlement and sustainable development are the two major themes of 'people-centred' relocation.

11.2 Rural Resettlement: Sustainability and Restrictions

11.2.1 Incompatibility Between Local Land-based Resettlement and Limited Population Carrying Capacity of Land

Land is an essential resource for agricultural production, which is a basic means upon which most farmers' livelihoods depend. 'Near resettlement' (NR), through moving migrants uphill to other local communities, has been the dominant approach in resettling rural residents. People displaced via near resettlement can retain their existing social networks and continue to use the current production systems, paying lower costs (both social and economic) compared with the distant resettlement approach. The main measures of securing land to resettle rural residents in the reservoir area include: reclaiming uncultivated land on slopes, improving the quality of land with low yields and taking some land from the host people in the resettlement communities. The incompatibility between the limited land provision and a substantial demand for land for resettling rural persons has greatly constrained the implementation of the NR scheme. The main restrictions of land reclamation and improvement of low yielding land lie in the scarcity of uncultivated land, the requirement of

reforestation, deficient capital input to land, lack of facilities for water conservation, and serious water and soil erosion arising mainly from runoff on steeply sloping land.

The sustainability of the environment in the reservoir area is closely related to the security of the dam and the sustainable development in the reservoir area, socially and economically. The NR scheme was examined, mainly from the perspective of the population carrying capacity of the land in the local resettlement communities. Farming on slopes, especially steeper slopes at gradients of 25 degrees and greater, is common in the reservoir area, as analysed in sections 6.4 and 7.1. A national policy on reforestation (returning cultivated land on steep slopes to forest or grassland) has been carried out since 1998. As a result, local land availability will be reduced. Moreover, as revealed from the case study in Yunan village in Chapter 6, the potential of land provision, landuse types and spatial distributions of land in the designated resettlement community should be taken into account in the analysis of the carrying capacity of the land when planning suitable resettlement schemes. The available land cannot support the great number of people to be displaced in some local communities. This study suggests that the rural dwellers who presently reside in the inundation areas above the 135m water level (the water level of the reservoir in 2003), but with inadequate carrying capacity of land in their proposed resettlement communities, should be moved out via distant resettlement.

In order to solve the problem of land shortage, a constructive counter-measure – 'land protection engineering works' on some suitable tributaries – has been proposed, as in the case of Kaixian. Such engineering works aim to prevent land from being submerged and thus minimising the number of persons to be uprooted. However, the assessments of technical and economic feasibilities are of the utmost importance. The uncertainty of the engineering project has affected the process of resettlement schemes, particularly the GODR.

11.2.2 Unfair Compensation for Land and Asset Losses

Among rural migrants, one of the most pressing issues was compensation, as discussed in sections 7.3 and 8.3.1. The main concerns of most resettlers were the standard and allocation ratio of compensation for the submerged land in different rural settings and other assets of migrant households. The resettlement institutions have provided compensation both in cash and in kind. The main problems include: how to evaluate land loss, the amount of compensation, and to whom compensation should be disbursed. This study identifies two

types of rural settings: purely rural agrarian areas and mixed peri-urban agricultural districts. There are huge differences in agricultural production, income sources, landuse types and perceptions of the people towards their relocation in the two settings. Given these huge differences, compensation standard should be different, but in reality the residents residing in different settings are being compensated using the same standard measures. Based on analysing the particularities of landuse and the interplay between production measures and location in the peri-urban districts, as in the case study in Kaixian County in Chapter 7, this study found that the value of land in the peri-urban areas is usually underestimated in both monetary terms and land-for-land arrangements.

Compensation for land loss should take into consideration the intensive investment (capital and labour) in the land, geographical location of the land, income potentials and the existing organisation of production and social networks derived from the land in different locations. Relocatees living in different settings have different socio-economic and demographic characteristics. Such understanding is important for setting compensation standards for land and other asset losses and for seeking suitable resettlement options (land-based or non-land-based) for the affected groups. The land-for-land compensation is an essential option open to rural relocatees as land is undoubtedly a fundamental sustainable resource. For those who already have experience engaging in non-farming work, or have good education and versatile skills, this study suggests that alternative resettlement options be made for them, allowing them to resettle themselves by 'self-employment' or 'voluntary self distant resettlement' (VSDR) schemes.

A large proportion of the compensation and funds were allocated to the resettlement communities for the provision of land and infrastructure, instead of distributing them to individual migrants. As a result, people prefer to stay in their areas of origin or delay their displacement. In addition, the migrants spent a large portion of their money on house building in the resettlement areas, especially in distant communities, so that they had little money left to invest in either agricultural or non-agricultural production activities. The displaced people were extremely concerned about their income sources, children's education and employment opportunities after displacement. Compensating migrants' losses with technology and skills training to equip them with production skills and knowledge should be considered as another means of compensation, encouraging them to adapt to the market economy.

11.2.3 Participation

The extent and degree of participation of the affected groups in the resettlement process (rural migrants, women resettlers and host people), as examined in sections 4.4 and 10.4.2, are generally small and low. The rights of participation and options open to the displaced people remain limited in the course of resettlement although the government has stated the importance of participation, particularly the necessity of informing the migrants about the resettlement policy and resettlement schemes. On the part of the government, 'motivating people to move out through education' is an important approach. The authorities and officials working on resettlement encountered much pressure in completing the resettlement tasks – moving people out of their original locations and resettling them in the designated distant provinces. Tactics combining 'hard' measures (force) with 'soft' measures (education) had to be adopted. On the part of the migrants, most of them consider the resettlement policy of the central government as favourable to them, but under some circumstances the implementation at the local government level has been contentious to some extent.

Active participation can be beneficial to both the government and migrants, enhancing communication between both parties, monitoring the progress of various resettlement schemes, relieving political and social tensions or conflicts between migrants, host people and the government, and helping migrants to integrate themselves into their new communities. In practice, however, the resettlement authorities and officials assumed that it was capital-, labour- and time-consuming if they offer the displaced persons 'excessive' rights to participate in the process of resettlement, hence resulting in more trouble and hindering the normal operations of resettlement. This research found that in fact there are few possibilities for the migrants to participate in policy making and resettlement affairs at county and higher levels. However, they have comparatively more opportunities of participation at lower levels, especially at the village level. Lack of communication between the authorities and the affected people may give rise to serious conflicts, as in the cases described in section 4.3.3.

The migrants had no say in high level decision-making, especially regarding whether they would like to be displaced via the GODR scheme and where they would like to be resettled. The GODR was primarily operated by the government and resettlement agencies. The governments at all levels attempted to bring tense situations under control and maintain social stability in the reservoir area and any locations receiving migrants. Hence the authorities

adopted the principle of 'reducing major issues to minor ones and minor ones to nothing' (*dashi hua xiao, xiaoshi hua liao*). The authorities tried to reduce possible conflicts by keeping a distance between themselves and the migrants. There is a perception among the migrants that they might gain solutions to their problems if they took extreme actions (especially collective actions). The majority of both the displaced and to be displaced people thought they would complain only if their reasonable requirements could not be met or if their benefits were lost in the process of displacement, rather than deploy legal instruments.

Many migrants knew little about conditions in the recipient locations where they would be going and were very confused about the compensation standard and allocation ratio in the distant resettlement package. Some of them were highly dissatisfied with the performance of the officials in resettlement operations. They found it difficult to bring their problems to the attention of the government at the county and higher levels. The main channels of information open to the migrants are 'government-organised visits' and 'official propaganda'. A creative aspect of the GODR was the visits to the resettlement locations arranged by the governments in both sending and recipient areas, attended by a representative from each migrant household. The visiting delegates were usually comprised of men for the reason that the women were perceived as having low ability in decision-making. Information (particularly production conditions in host communities) provided to these delegates was inadequate as the visit was short. Moreover, their communication with the host people was often too limited for them to obtain enough information. A number of people to be displaced (54.3%) did not know when their families would be moved out or where they would be going (41.3%). Township and village cadres found it difficult to motivate the people to move out via the GODR. The lack of active participation in decision-making, the lack of planning for production rehabilitation during the transition period after resettlement and inadequate monetary compensation are major factors resulting in dissatisfaction of some migrants in their resettlement.

The host people expressed their general support for the distant resettlement approach, taking into consideration the fact that their communities and the host residents could receive much funding for providing land and infrastructure to the relocatees. However, they were worried about potential impacts in the long term. One of the greatest problems was the redistribution of land resources, which affected the benefits of both the hosts and the migrants, and may give rise to conflict between the two groups of people.

11.2.4 Resettlement Rehabilitation and Social Integration

A sustainable livelihood strategy requires social, economic and environmental assessments of relocation of the displaced people and the resettlement areas. Impact assessments should consider economic, social, cultural, demographic and environmental factors. The feasibility of resettlement approaches depends not only on the willingness of the relocatees but also on comprehensive consideration of the local conditions, including the population carrying capacity of land or environment, levels of socio-economic development and environmental sustainability. Chapters 7 and 8 demonstrated that natural resources (especially land) and compensation types have particular significance in resettling the people and in helping them reduce various stresses caused by displacement. As this study argued in section 10.4.6, emphasis needs to be placed on plans to enhance the self-development capacity of the migrants, including female migrants. However, such plans were commonly absent in the resettlement communities. One important reason is that authorities have not worked out any concrete policies and measures of 'later assistance' for the affected people and the affected regions, resulting in the lack of funding and projects to make any plans. Another important reason is that all the displaced persons are distributed in a scattered pattern such that the numbers of resettlers in most locations are not large enough to draw the attention of the local governments to the necessity of making plans. An inadequacy in the implementation of resettlement schemes, especially the GODR, is the lack of emphasis on the development of human resources by enhancing general education and skills training with respect to the resettlement policy and the distribution of financial resources. Employment, education and health should be the main concerns of the development of human resources, as stated by Li (1994). The greatest support for the displaced people would be to equip them with new values, knowledge and skills (agricultural or non-agricultural) which would in turn enable them to adapt to their new environments and enhance their motivation to re-establish production. The best way of compensating future generations of the displaced people would be to provide them with not only farmland but also good education, allowing them to develop productive abilities suitable for a future socio-economic context.

In sections 8.3.3 and 9.3, this study examined the strategies of livelihood and production restoration after distant resettlement, including seeking suitable landuse forms to initiate land-based production and create conditions for future agriculture-based and/or non-agriculture-based production. To achieve the goals of restoring living standards and developing a sustainable economy, key strategies have been implemented in the GODR scheme: (1)

allocating every eligible migrant a plot of farmland equal to the average land-holding of the host people; (2) providing basic infrastructure and social service access; (3) providing preferential policies to encourage migrants to restore and re-establish household livelihoods; (4) providing practical techniques and skills trainings in some areas; and (5) advocating 'help and assistance', through which the host people assist the resettlers in learning new agricultural and/or non-agricultural production techniques which are applicable to the local market-oriented economy.

Social development has been seen as an integral part in carrying out project-induced resettlement. Few studies have focused on the issues of social integration of the relocatees who were moved some distance away. The spatial patterns of resettlement have important impacts on the social integration of migrants, as analysed in section 8.3.2. The context and degree of social integration vary according to distance and scale of the resettlement in a community. All the 70,000 rural resettlers from five sending counties in the Chongqing reservoir area were distributed to eleven designated provinces, located on the east coast areas or in the middle and upper reaches of the Yangtze River. Resettlement of the people was comparatively centralised at the county/township level but relatively scattered at the village/villager's group level. The people displaced via the GODR scheme need to pay higher social costs than those settled by the near resettlement scheme in their adaptation to their new society. The old social networks have been completely destroyed and distress in the process of distant resettlement has been greatly increased. However, the migrants can gain some opportunities in re-establishing new social ties in the resettlement communities, receiving new ideas and viewpoints and establishing new relationships between people. Creating new social capital and building new social networks come at an opportunity cost and require some time.

The pattern of 'comparatively concentrated and scattered resettlement' has dual impacts on the social integration of migrants. On the negative side, some migrants felt that they were placed in a disadvantageous social position because they regarded themselves as a minority in the host community. They were unlikely to have access to policy formulation and resource redistribution in their communities, resulting in a tense or uneasy relationship between the migrants and the host people. They had to adapt to changes not only in production measures but also in the different local languages and culture. On the positive side, they were forced to communicate with the host people to build relationships and get their help. They had to re-build their new social capital with individuals. Some groups of migrants (e.g., the young with

good education, or those who have relatives and/or friends in the resettlement community) may find it relatively easy to integrate themselves into the local society with the establishment of the open policy and the progress of the market economy. However, it was very difficult for those who ran businesses before the displacement to initiate new businesses because this was problematic and would require a long time to re-build a service network and customer base in the new environment. The process of social and economic integration of the migrants needs to be further monitored.

11.3 Government-organised Distant Resettlement: Nature and Problems

The previous NR arrangement for rural residents has been changed to moving some of them out of the reservoir area and resettling them in distant provinces which have comparatively more developed economies or are the main beneficiaries of the project. Chapter 8 examined the rationale, pattern, nature and major problems of the GODR and its implementation in the designated eleven provinces/municipalities, taking the Chongqing reservoir section as a key area for this scheme. Chapter 9 used Sichuan province as a case study area. It further examined the operations of GODR in relation to the willingness of migrants, selection of resettlement relocation, land readjustment models, spatial pattern of resettlement, social stability, production rehabilitation and governmental roles.

An important finding is that the resettlement operations in the GODR scheme largely involve basic principles relating to governmental responsibilities, the migrants' rights and participation, protection of the interests of the host communities, and a clear definition of the objectives of resettlement. The process of distant resettlement involves at least three stakeholders: governmental institutions and organisations, the migrants and the host people. The governments at all levels have played significant roles in the policy building, planning, organisation and implementation of the GODR scheme. Some 70,000 rural residents were successfully moved out of five counties in the Chongqing reservoir area and were resettled in different communities in the eleven provinces in 2000–02. Most communities offered good resettlement locations, providing fertile land, feasible irrigation, convenient transportation and good economic potential to lay a foundation for livelihood rehabilitation of the migrant households after their displacement. The basic goals of resettlement, which are described as

'moving out' migrants from the origin areas and 'keeping them stable' in the recipient communities, were achieved in both exercises of the 'resettlement trial' (in 2000) and the 'full scale displacement' (in 2001–02). Some important factors contributing to the general success of the GODR were identified as: (1) the political commitment of the Chinese government to the resettlement regulations, policies, and resource allocation; (2) the close adherence to established procedures in resettlement operations; and (3) the appropriate criteria for resettlement location selection and house building.

Land readjustment is a critical issue in the GODR approach. All the receiving communities were required to allocate to each migrant a plot of land which should not be less than the average land holding of the host people in the community. There was no public land retained in most villages after the land tenure for 30-years in the second phase was implemented in rural China. The models for securing land to settle the migrants mainly included: 'major readjustment' and 'minor readjustment' in most villages, exchanging land from some state-owned farms, and allocating limited land retained in some villages.

Strict criteria (five major aspects) for resettlement location selections were emphasised. The migrants mostly wished to be resettled in the urban or peri-urban areas. The main reasons for this were identified as: low income derived from farmland, and excessive expectations in changing the migrants' social and economic status through distant relocation and diverse income sources (non-agricultural and agricultural) to sustain living and production by their families. All the relocatees still retain their household registration status as 'agricultural population', rather than a direct change of their rural residency status into 'urban residency' status, even though some migrant households have been resettled in county city or township settings. In spite of their wishes, displacement in GODR was characterised by rural-to-rural horizontal mobility. Resettling migrants in urban or peri-urban settings can promote their future rural-to-urban mobility. This resettlement pattern in some locations showed consistency with China's specific urbanisation policy, which is to keep people out of large cities but encourage the development of small cities and towns. Rural-to-rural resettlement can avoid some urban nightmares such as unemployment and inadequacies of infrastructure and social services.

Some unavoidable issues inherent in distant resettlement, such as subsidies for 'distant resettlement' and 'distant removal out of the Chongqing reservoir area', 'subsidy for low-income households' and 'funds for management', cause the cost of distant resettlement to be

high. The allocation ratio of funds, which were handed over to the recipient communities for the provision of production and infrastructure, remains a disputed issue. The hesitation to move out and dissatisfaction with the authorities and officials working on the distant resettlement largely resulted from what most migrants perceived to be the 'unfair ratio'. 'Special funding for assistance' at the later stage after resettlement was stipulated in the TGP resettlement *Regulations*, but the proportions of its distribution between the reservoir area and any distant resettlement regions have not been specified. This was a restrictive factor in working out the plans for the migrants' livelihood and production rehabilitation in the resettlement communities, compounded by the lack of the defined duration, projects and capital resources for national assistance.

House building was addressed by all the governments at all levels in the resettlement areas. Local government and resettlement institutions were mainly responsible for providing measures for building, monitoring and inspecting the quality of houses in the pressing process of house building. However, government administrative measures cannot always resolve effectively all the conflicts or contradictions between the high expectations of the migrants and the reality under market mechanisms, as was the case in some resettlement locations in Sichuan.

Migrants displaced via the GODR scheme stand to lose all of their social capital in the reservoir area and the social costs of building new social capital in their new environments are high. The comparatively 'centralised' or 'scattered' resettlement pattern was applied in most resettlement places, as revealed in Chapters 8 and 9. Adopting this pattern allows the recipient communities to cope better with issues of land redistribution, exploiting or improving the existing infrastructure and social services (e.g., water and electricity supply, access to roads, schools and health services), and helping the displaced persons to integrate themselves into the local society. However, most migrants would like to be relocated in a large cluster and build houses in the same location to maintain their existing relationships. The greater the distance from home that the migrants are resettled, the harder the rebuilding of social relationships. Some factors influencing social stability after resettlement have surfaced.

'Moving people out' and 'resettling them stably' were the key objectives during the physical resettlement and the transition period of displacement. Although resettlement communities may provide migrants with some information on the local market and skills training,

systematic and operational planning for agricultural and/or non-agricultural production reconstruction after removal was generally lacking. In addition, the personal motivation of the relocatees is often inadequate.

11.4 Woman Migrants: Predicament and Development

Chapter 10 addressed the research in development issues from the gender perspective. This study argues that the situation of women resettlers produced by the TGP has to be understood in the institutional, political-economic and sociocultural contexts in China. Structural factors have restricted women migrants' opportunities for development and improving their socio-economic status in the process of displacement and resettlement. The disadvantaged position of women resettlers has not been improved in the process of displacement.

Women make up a large part of the agricultural labour force in the reservoir area. While males, as 'floating workers', can seek non-agricultural jobs (especially work relating to the construction of the TGP) either inside or outside the reservoir area, the women are left at home. Societal prejudice and the low level of female education and skills were the main factors that restrained the self-development of female resettlers. They found it difficult to establish non-agricultural businesses and to gain employment in non-agricultural enterprises. For women, crop farming (vegetable, fruit and grain cultivation) and animal husbandry are important production activities for them.

For the purpose of controlling the growing population, some counties (e.g., Kaixian) have adopted a local demographic policy forbidding married women to remain in the reservoir area. This group of women was not granted the status of eligible migrants and they had to sacrifice their individual benefits for the good of the TGP. Rural resettlement associated with the TGP is rural-to-rural or a horizontal movement in nature. Women resettlers hope to improve their social and economic status by transforming their agricultural household registrations to non-agricultural ones. However, the permanent transfer of *hukou* status is still strictly controlled by the relevant authorities. Marriage is used by some women to acquire the status of migrants. 'Marrying into' the reservoir area can bring the husband's family additional labour force and more resettlement compensation and funds. It is difficult for the resettlement and family planning authorities to control the increasing migrant population. The

study argues that the rights of decision-making, entitlement in sharing economic resources, and rehabilitation of livelihood and production are the key factors influencing the development of female migrants in the process of displacement. It is imperative that the government and institutions take into account a gender perspective in resettlement policy-making, planning and implementation in order to achieve equal development for both male and female migrants.

11.5 Research Methodologies: Applications of GIS and Resettlement Impact Assessments

The land carrying capacity and land availability were not precisely analysed due mainly to the limitations of conventional research methodology and the lack of complete and reliable data (particularly landuse and population). Chapter 6, taking Yunan village in Kaixian County as a case study area, adopted the techniques and methods of geographical information systems (GIS) and quantitatively analysed the different characteristics of landuse in both the inundation area and the supposed resettlement area in this village. It analysed the human carrying capacity of the land in the proposed resettlement area. Two dominant variables were taken into consideration: land loss resulting from land inundation and land provision after a potential reduction of land due to implementing the national reforestation policy. The GIS-based multi-criteria analysis revealed that available land in the community could not meet the demand required to resettle the migrants locally.

Efficacious and timely analyses of the changes of landuse and carrying capacity in the local resettlement communities are important for the government and resettlement institutions to re-orientate resettlement policy and devise suitable resettlement schemes. GIS provides the methodology and techniques to facilitate such analyses objectively. Using GIS, complex problems relating to landuse changes and carrying capacity of land in any dimensional communities can be effectively analysed. The methodology and techniques utilised in this case study (from a micro dimension at a village community level) can be extrapolated to macro dimensions (at township, county and the reservoir area level). Using the techniques of GIS to build landuse databases, analyse the human carrying capability of land, predict the trends of landuse changes and effectively manage the land resource in the resettlement areas

was suggested as an effective methodology as it provides resettlement policy making, implementation and management with scientific specifications and technical support.

The economic, environmental and social impacts of a hydro project and associated resettlement impact upon one another. However, consequences of involuntary resettlement or impacts on the society, economy and environment on the local, regional or even national scales have received less attention. Accordingly, there is limited literature concerning assessment methods in regard to the impacts of resettlement from the social, economic and environmental perspectives, especially for a single huge dam project like the TGP. One of the aims of this study is to discuss the principles and frameworks for resettlement impact assessments, based on the practice of the TGP resettlement (near resettlement and distant resettlement). Causes and consequences of human resettlement are very complicated, tangibly and intangibly, quantitatively and qualitatively. The methodologies, hence, for impact assessments of a dam project and its resettlement should be considered as a combination of quantitative and qualitative analyses. Chapter 5 sketched out the frameworks for the socio-economic and environmental impact assessments of the TGP resettlement.

This study places an emphasis on the social impact assessment (SIA). Social equity and equality, the rights to information and participation of the affected people, options of resettlement schemes open to migrants, the gender perspective and livelihood rehabilitation are important concerns in the SIA. Some consequences of resettlement, particularly distant resettlement, have not yet emerged. Therefore, economic, social and ecological data to be collected and used in the impact assessments remain limited because the TGP resettlement is still under way and the GODR has just been completed so that some impacts have not yet manifested themselves. However, seeking out suitable methodologies and methods for impact assessments to resettlement are of significance.

11.6 Development Resettlement of the TGP: Implications for the Theory of Involuntary Migration and Resettlement

The TGP is deemed to be a monumental project, where 'contributions and sacrifices are being made in the present; the benefits will, however, endure the many generations to come', thus evoking a passionate ideology in the people and government of China, as reflected in the

above slogan making its round in the reservoir area. The construction of the TGP and the associated displacement and resettlement occurred during a period of transition in socio-economic structures and in the contexts of a fragile environment and inadequate population carrying capacity of land in the reservoir area, subjected to the dual pressure of people relocation (especially rural residents) and socio-economic and environmental development in the reservoir area. The principal objectives of resettlement are to ensure that the migrants can be moved out, be socially stable in the course of resettlement and become wealthy through displacement, accompanied by environmental protection, appropriate resource development, industrial restructuring and enhancement of productivity in the reservoir area.

There have been two important adjustments to the previous 'development-oriented resettlement' policy since 1999. One is to move a large number of rural dwellers (125,000 in total) out of the reservoir area, of which 100,000 persons lived in the Chongqing reservoir section. The other one is to close down the small or medium sized industrial factories and mining enterprises which are unprofitable and generating severe pollution in the reservoir area. These industry enterprises were planned to be relocated and reconstructed to their 'three original scales' (sizes, standards and functions). Sustainability, especially environmental sustainability in the reservoir area, and equity of benefit distributions of the project between the beneficial regions and the reservoir area were the principal concerns in policy adjustments. Distant resettlement has proved to be able to relieve the pressures of inadequate land and abundant population to be resettled via the near resettlement scheme. The deteriorating environment, particularly water and soil erosion resulting from farming on steep slopes, can be controlled to a great extent. To enhance the competitive capability of industrial enterprises and prevent the reservoir from being further polluted, these industrial enterprises will be re-organised through bankruptcy, shut down and restructure, rather than relocating. The two adjustments to a resettlement policy and practical resettlement programmes reflect the principles of people-centred social development and environmental sustainability.

Institution building is essential for the success of resettlement schemes. As examined in section 4.3.4, comprehensive and operational institutions for implementing resettlement approaches have been built. China has established an effective management system for the TGP resettlement, in which the resettlement is 'under the leadership of the central government, the responsibility of the affected provincial government and using counties as fundamental units'. The governments and resettlement authorities at county and township level play important parts in the day-to-day management and various resettlement affairs. The

Chinese government has committed to fully resettle all the people to be displaced. The administrative functions of governmental institutions lie mainly in resettlement policy-making, planning, implementation, inspection, monitoring and management through administrative measures, legislation and regulations.

To resettle migrants satisfactorily, the TGP resettlement has adopted the principles of 'three combinations' among the diverse resettlement approaches: a combination of resettling migrants in agricultural sectors with secondary and tertiary industrial resettlement, a combination of 'near resettlement' with 'distant resettlement' and a combination of the government-organised resettlement with scattered self-resettlement of migrants. Agriculture or land-based resettlement is the most important principle in both the near and distant resettlement schemes (organised and voluntary scattered) for the rural resettlers. The TGP resettlement has carried out a compensation policy: 'compensation and subsidy in the early stage of displacement and assistance in production rehabilitation in the later stage after resettlement'. Other than compensation for the losses of land and other assets in partly monetary terms, providing for each eligible migrant, namely 'productively resettled population', with basic production materials (e.g., land) and conditions is an important strategy to help the migrants restore livelihood and re-establish agricultural production after displacement. Essential and favourable policies for the people displaced and the reservoir area have been enforced. Some key factors, such as the influence of economic reform and institutional reform on resettlement schemes, the nature of the market economy, the contexts of contemporary rural-to-urban migration, declining agricultural development and reduced income from agriculture-based activities, the socio-cultural constraints of individual migrants and the affected host people, should be taken fully into account in the resettlement planning and schemes. To achieve sustainable development, continuing financial support through 'later assistance', technical assistance and access to social services should be extended to those displaced.

Specific strategies of assistance for various groups of people displaced (categorised by age groups, gender, or resettlement schemes) need to be emphasised. To turn involuntary resettlement into a sustainable development project, special emphasis should be placed on the provision of general education and professional training programmes to make the resettlement scheme into a real developmental opportunity for the resettlers and for the communities into which they migrate. For young migrants, priority should be given to the promotion of educational and technical know-how, helping them to adapt to the new

environment of market economy and creating more employment opportunities for them. The 'household registration system' should be adjusted to fit the particular conditions associated with the project in order to enable more rural migrants, especially the youth and those with sound education or experience in working in non-agricultural activities, to resettle in urban areas. Social welfare and benefits should be provided to all people, especially the aged migrants. Woman migrants have provided a massive input of labour in the fields and in the homes. The equal provision of economic resources, equal entitlement to migrant status as for the males and equal rights in education and employment can assist them in adapting to their new environment and enhance their capacity for building new lives after resettlement. Settling woman migrants properly and adequately will lead resettlement schemes towards sustainability. Preferential policies, which have been made to the reservoir area, should be extended to all the communities receiving migrants in distant provinces. Practical measures, projects, financial resources and distributions of funding for 'later assistance' should be worked out as soon as possible in order to prevent the relocatees from becoming impoverished, thus repeating history.

Establishing a legal framework for reservoir resettlement is very important. As discussed in Chapter 4, China has particularly established the legal system for the TGP resettlement since the early 1990s. The TGP resettlement *Regulations* are the core of the legal framework and have played fundamental roles in directing resettlement of the people, relocation of secondary and mining industries, construction of urban areas and replacement of infrastructure. The *Regulations* can be amended according to changing conditions, given the long duration (17 years) and complexity of the TGP resettlement and the growing economic reform and transition to a market economic system. The key contents of the *Regulations* include: a 'developmental resettlement' policy, preferential policies, principles and management mechanism of the TGP resettlement; standards and methods of compensation (in cash, land and preferential policy) for migrants' losses of land and other assets; the main tasks and responsibilities of the government and resettlement institutions in charge of implementing resettlement schemes; legal and administrative issues in the process of human resettlement such as appeal procedure, mediating mechanisms and legal procedures to deal with conflicts and disputes in the process of resettlement.

The regulations, policy, measures, order and rules pertaining to the TGP resettlement are characterised by the nature of administrative regulations of the central and sometimes local governments and their departments. Adoption of the administrative form of the TGP

resettlement legal framework is determined by the characteristics of political economy in contemporary China. All interest groups, including the government and its departments, project and resettlement authorities, migrants and other affected people, and non-government organisations must comply with the *Regulations* in resettlement practices. Despite a growing demand for economic interests and legal protection, most of the migrants, especially rural migrants, are not aware of their political rights, nor have they employed legal instruments to protect their benefits. Moreover, administrative regulations made by the central or local governments cannot replace an independent legal framework to fulfill its function because they still leave some areas open to disputes and unresolved problems. Based on the current regulations and practice, it is necessary to draw up national law, such as the Reservoir Resettlement Law, which focuses on resettlement matters relating to the construction of hydro projects. The ongoing TGP resettlement demands higher requirements for a legal framework.

Sustainable development is the only way to achieve the resettlement objectives of economic restoration, social stability and environmental sustainability in the reservoir area and in any host communities. In theory, the 'two adjustments' to the 'developmental resettlement' policy marked a breakthrough in the TGP resettlement policy and its implementation. The rehabilitation of the environment in the reservoir area started to be carried out with more practical measures than ever before. It adopts mainly an integrated approach, incorporating the reservoir area with the other regions of the Yangtze river from the dam, especially the upper stream catchment, into a whole ecosystem. Measurements for the protection of water quality, preventing of geological disasters and industrial restructuring in the reservoir area were given emphasis. Strong administrative intervention, effective legal measures and appropriate financial aid can safeguard the implementation of various resettlement schemes. These approaches pave the way for sustainable livelihoods of the migrants and for sustainable development of the reservoir area, taking into account the interaction and interdependency of humans and the environment and of physical, economic, cultural, social and political factors. Taking agriculture or land as a foundation in designing resettlement schemes for rural residents, the combinations of multiple methods (near and distant resettlement, land-based and non-land-based resettlement, organised and self resettlement) for resettling rural migrants aim to seek more resources for migrants to re-build their lives and production after displacement in a sustainable way. The relationships between development and resettlement of the TGP can be summarised as 'development during the process of resettlement' and 'resettling people during the process of development'.

11.7 Further Research Directions

This thesis examined mainly the resettlement process related to the TGP in just a few counties (Kaixian, Yunyang, Wanzhou and Fengdu) in the reservoir area and one province (Sichuan) receiving migrants from the reservoir region. Although I was able to gain many insights into the process from this study, much still remains to be done. The directions of further research, based on the results of this study and progress of resettlement schemes associated with the TGP, will be centred around the impacts on migrant households of involuntary distant resettlement and the rehabilitation strategies of migrant families. Further research should be based on empirical investigation to produce a practical understanding of the patterns, processes and consequences of the displacement of migrant families via the 'distant resettlement' schemes from 2000 to 2002. It is expected that further research will throw more light on the whole process of forced displacement and resettlement and the socio-economic transformation in China. Such research will not only contribute to the understanding of this process in China but also to a more generic understanding of involuntary population displacement and resettlement, particularly development-induced displacement and resettlement. In addition, such research will seek to make a contribution toward policy and program development which will improve the rehabilitation of those migrant families relocated in remote destination provinces beyond the reservoir area.

Forced migration is related to a variety of issues of societal, economic, environmental and political dimensions of development in a region or a country. Critical issues relating to the impacts of displacement and resettlement are: fair resettlement, sustainability of livelihoods, weighing of costs and benefits, overcoming regional disparity, restoring social stability, identity and equality, social mobility and eco-environmental sustainability. In particular, further research needs to examine the outcomes of the agriculture or land-based rural resettlement approach. The main focus should be on resettlement of rural dwellers, with specific reference to the consequences of distant resettlement.

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APPENDIX A SURVEY QUESTIONNAIRES ON THE TGP RESETTLEMENT (ENGLISH VERSION)

A 1:

Survey on Officials and Experts in Charge of the TGP Resettlement in the Reservoir Area

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

1. How do you assess the advantages and disadvantages of different resettlement schemes?
   A. near-resettlement
   B. self-distant resettlement
   C. living with relatives and friends
   D. distant-resettlement out of Chongqing reservoir area
   E. settling within the non-flooded areas of Chongqing reservoir area

2. What is the proportion of migrants resettled by the various resettlement scheme in your city/county/commune/town? (please provide data or document)

3. What positive and negative effects do the resettlement has on the local socio-economic development? (Please provide data or document)
   A. the quantity and quality of land
   B. land-use structure
   C. industrial structure
   D. agricultural structure
   E. returning cultivated land to forest or grass land-use
   F. rate of increase of the GNP
   G. income per capita

4. What are the effects of resettlement on the local environment in your region? Which are the most serious aspects?
   A. water and soil erosion
   B. increase of number of species extinct or endangered
   C. more serious urban pollution
   D. lower water quality
   E. proportion of forest cover

5. What are the main problems encountered or will be encountered in the process of the near-resettlement further uphill?

6. What are the main problems in resettling rural migrants in the secondary or tertiary

industries? Please provide examples.

6. Are there any policies on the exceptionally poverty-stricken or vulnerable groups among the TGP migrants? What measures will be adopted to sole the problems?

7. What are the main issues or difficulties posed separately by the migrants and the receiving areas during the process of distant-resettlement?

8. In your opinion, what are the exceptional particularly psychological characteristics of the TGP migrants? How are they assessed and dealt with?

9. In the process of distant-resettlement, what are the criteria in identifying poverty-stricken migrant households?

10. Do you think the distant-resettlement scheme is more advantageous than the near resettlement further uphill? Why?

11. Do the migrants prefer distant resettlement or near resettlement further uphill? Why?

12. How are the issues of household registration, housing land and contract land for the attached people and children born beyond the family planning policy solved in the different resettlement schemes such as the near resettlement, distant resettlement and the other resettlement schemes? Do they enjoy the same prestigious policies as regular migrants? Please provide examples.

13. Do the migrants prefer to be settled in the secondary/tertiary industries in a city/town or in the primary sectors? Why?

15. Could you please provide the ' Migrant Resettlement Plan' and local '10^{th} 5-year Plan'?

A 2:

Survey on Officials and Experts in Charge of the Distant Resettlement in the Receiving Areas

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

1. How is the institutional organisation responsible for the distant resettlement of the TGP set up?

2. What are the main difficulties encountered or will be encountered in settling TGP migrants in your region?

3. Are there any policies on the exceptionally poverty-stricken or vulnerable groups among the TGP migrants? What measures will be adopted to solve the problems?

4. What positive and negative effects do receiving the TGP migrants on the local social, economical and environmental aspects?

5. How to readjust the residential and contract land from the original residents or re-distribute land retained by the community, such as farmland and fishpond, to the migrants? What are the barriers encountered?

6. Please discuss the advantages and disadvantages of the resettlement approach of 'comparatively centralised distribution of migrants to a county and township but comparatively scattered resettling migrants in a village'.

7. Please briefly sum up the demands of migrants on residential land and construction or purchase of houses, and how are these managed?

8. How do you plan to make use of the production and infrastructure funds brought about by the TGP resettlement? What projects have the funds been invested in or plan to be invested in?

9. What prestigious policies or measures does the local government have in receiving and resettling migrants?

10. Are there any plans or measures to assist migrants in swiftly restoring their production

and gradually becoming wealthy? What are these plans or measures?

11. What particular mentalities do you think that the TGP migrants have? How do you view and deal with them?

12. How do you deal with the 'unfair' or 'unbalanced' perceptions among the original residents? Please give examples.

13. How does the recipient government solve the issues of household registration, housing land and contract land divisions for the people related to (and migrating with) the migrants and children born beyond the family planning policy? Do they share the same prestigious policies terms as the regular migrants?

A 3:

Survey on Migrant Households Settled by

the Near Resettlement Scheme

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

Note: *Answered by the migrants having been resettled

1.(1)Do you think the near resettlement further uphill or the distant resettlement scheme is better?

A. near resettlement
B. same
C. distant resettlement

(2)Why?

A. difficult to forsake the hometown
B. unfamiliar with the place and people in the distant resettlement location
C. too heavy a loss in distant resettlement
D. difficult to adapt to the culture, lifestyle and customs of the unfamiliar locations
E. the economy of the receiving area is more developed than that in the reservoir area
F. more available land in the receiving areas
G. much compensation for the distant resettlement
H. others (specify:_____)

2.(1)If given a choice, do you prefer to be settled in the secondary or tertiary industries in the city/town or enter in the primary sectors?

A. to be settled in the secondary or tertiary industries in the city/town
B. to be settled in the primary sectors
C. no big difference
D. others (specify:_____)

(2)Why?

A. urban regions are better than rural areas
B. higher income in the secondary or tertiary industries
C. low income in the agricultural sectors
D. Cities/Towns in the reservoir area are not much better than the rural areas
E. The secondary and tertiary industries are facing lay-offs and job losses.
F. less employment opportunities and difficulties in running businesses
G. difficult to compare

3. If given a choice, which resettlement scheme would you choose?
   A. near resettlement further uphill
   B. living with relatives and friends
   C. self-distant resettlement
   D. the government-organised distant resettlement out of the reservoir area
   E. resettling in the non-flooded counties within Chongqing reservoir section

4.*(1)When did your family move to here? (dd/mm/yy)
*(2)What is the living area per capita of your family before moving? of what building structure?
*(3)What is the living area per capita of your family after moving? of what building structure?
(4)Are you satisfied with the present housing and living conditions?
   A. very satisfied
   B. rather satisfied
   C. not quite satisfied
   D. very dissatisfied

5.(1)Annual per capita income of your family is about _____ *yuan*?
(2)Do you know what is the highest and lowest annual per capita income of the local host families?
*(3)What is the income level of the migrant households compared with that of local hosts?
   A. much higher
   B. a little higher
   C. basically the same
   D. slightly lower
   E. much lower
*(4)How do you compare the living standards of your family before and after moving?
   A. very much improved
   B. some improvements
   C. basically the same
   D. worse a little
   E. much worse
*(5)How long did your family take to resume production and restore the same standard of living before moving? (____ years or ___ months)

6. * (1)How much housing and contracted land per capita did your family have before moving? (___ *mu* housing land; ___ *mu* contracted land)
*(2)What landuse types did your family have before moving? How much of each?
   A. farmland (paddy: ___ *mu*, dry land: ___ *mu*)
   B. orchid
   C. grassland
   D. forest land
   E. fish pond
*(3)Could your family enjoy the use of the public land of the community such as grass land and forest land before moving?
   A. yes
   B. no
   C. no public land

*(4)Could your family enjoy the use of the public land of the community such as grass land and forest land after moving?

A. yes
B. no
C. no public land

(5)How much housing and contracted land does your family have now? (housing land: ___ *mu*; contracted land: ___ *mu*)

(6)What landuse types does your family have now? How much of each?

A. farmland (paddy: ___ *mu*, dry land: ___*mu*)
B. orchid
C. grassland
D. forest land
E. fish pond

7.*(1)What are the main agricultural products of your family before moving?

A. rice
B. wheat
C. corn
D. orange
E. other fruits
F. vegetable
G. garden or horticulture
H. fishery
I. forestry
J. animal husbandry
K. others (specify:_____)

*(2)What are currently the main agricultural products?

A. rice
B. wheat
C. corn
D. orange
E. other fruits
F. vegetable
G. garden or horticulture
H. fishery
I. forestry
J. animal husbandry
K. others (specify:_____)

8.*(1) What were the main income sources of your family before moving?

A. selling crops
B. orange and other fruits
C. fishery
D. animal husbandry
E. handicraft industry
F. small business

G. working outside the region
H. transportation
I. tourism
J. high returns agriculture
K. others (specify:_____)

(2)What are the current main income sources of your family ?

A. selling crops
B. orange and other fruits
C. fishery
D. animal husbandry
E. handicraft industry
F. small business
G. working outside the region
H. transportation
I. tourism
J. high returns agriculture
K. others (specify:_____)

*(3)How does your current family income compare with before moving?

A. much higher than before moving
B. higher
C. basically the same
D. lower
E. much lower

9. What changes in the environment of the current living community compared with that before moving?

A. change for the better
B. no change
C. change for the worse
D. exacerbated water and soil erosion
E. less severe water and soil erosion
F. more trees and grass uphill
G. decreased trees and grass land
H. increase in numbers and species of animals and plants
H. decrease in numbers and species of animals and plants
I. others (specify:_____)

10. Are you satisfied with the work of the government officials responsible for resettlement?

A. very satisfied
B. rather satisfied
C. not very satisfied
D. very dissatisfied
E. difficult to say

11.What do you worry about most now?

A. high living pressure
B. fewer employment opportunities

C. poor environment
D. lower income
E. children's education
F. big difference in agricultural production
G. unfamiliar with the place and people
H. different lifestyles
I. language barriers
J. difficulties in getting along with the hosts
K. deteriorating health conditions of the aged people

L. difficulties in resuming former work(specialty□_____)

M. others (specify:_____)

12.What do you mainly rely on to resume production and your life after moving?

A. support and help of the local government and people
B. self-reliance
C. national poverty-alleviation policies
D. resettlement compensation
E. assistance policy during the later stage of the TGP

13.How do you intend to become rich in the shortest time?

A. work outside the resettlement area
B. engage in food production
C. engage in cash crop
D. engage in sideline production
E. engage in livestock farming
F. do business
G. engage in tourism
H. engage in transportation
I. engage in forestry
J. learn new production skills and technology
K. engage in processing industry
L. others (specify:_____)
M. never thought

14. As a migrant of the TGP, how do you see yourself?

A. contributor
B. sacrifice
C. beneficiary
D. special citizen

15.Does the vulnerable group in your family – the women, aged and children – enjoy special treatment during the process of resettlement?

A. yes (specify:_____)
B. no
C. do not know

16.Please compare the changes in your current living township/town between before and after receiving the migrants (check the appropriate boxes).

Item \ Changes	Improved or increased	No change	Deteriorated or decreased
Resettlement capital investment			
Land per capita			
Environment			
Employment conditions			
Social relationship			
Development of enterprise			
Roads and traffic			
Schools			
Medical infrastructure			
Housing conditions			
Drinking water			
Telecommunications and postal service			
Income			
Status of women			
Security of the aging population			
Medical insurance			

A 4:

Survey on Migrant Households to be Displaced in 2000–02

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

1.(1)Would you like the government-organized distant resettlement?

A. yes
B. no
C. no choice

(2)Why?

A. It is better than the near distant resettlement further uphill
B. We will move out only when forced to do so by the raising water
C. It is not as good as the near resettlement further uphill
D. It is difficult to forsake the hometown

2. Do you know the time, resettlement location and distance your family will be moved?

A. yes (time: dd/mm/yy ; resettlement location: province(city) county(city) commune (town) village(group); distance: _____Km)
B. no

3. Do you think who should be responsible for distant resettlement?

A. government
B. migrants
C. both the governments and migrants

4. Which of the following resettlement funds or compensations do you think are related to your family?

A. production resettlement fund
B. basic infrastructure fund
C. management subsidy
D. subsidy for poverty-stricken migrant households
E. living allowance for the transition period during the process of resettlement
F. subsidy for purchasing production material
G. compensation for the original house and associated infrastructure
H. compensation for scattered trees or fruit trees
I. compensation for loss during removal and delay in work process
J. removal transportation fee
K. long distance bus transportation fee for moving out of the Chongqing reservoir area

5. Are you satisfied with the distant resettlement compensation or fund which your family will receive?
   A. very satisfied
   B. rather satisfied
   C. not so satisfied
   D. very unsatisfied

6. If given a choice, which resettlement scheme would you choose?
   A. near resettlement further uphill
   B. living with relatives and friends
   C. self- arranged distant resettlement
   D. government-organised distant resettlement out of the reservoir area
   E. resettling in the non-flooded counties within the Chongqing reservoir section

7. What resettlement form do you like most?
   A. centralised group
   B. small centralised group
   C. single household
   D. sparsely resettled in a village

8. Do you believe that the government can organise the distant resettlement scheme satisfactorily?
   A. yes
   B. no
   C. half believing, half doubting

9. What important affairs do you have to settle before moving?
   A. pay respects to ancestors
   B. visit and give treats to neighbourers
   C. others(specify:_____

10. Which assistance do you hope to receive before moving out?
   A. to visit the receiving location once
   B. to visit the receiving location twice or more
   C. to choose the receiving location
   D. skills training
   E. to get more information so as to compare the conditions of different receiving locations
   F. true representation of the resettlement conditions of the receiving locations

11. From that you know, how do the receiving location that you are moving to compare with the location you are in now?
   A. much better
   B. somewhat better
   C. the same

D. a little worse
E. much worse

12. Are you satisfied with the work of the government officials responsible for resettlement of the sending and receiving areas?
    A. yes
    B. no
    C. difficult to say

13. What do you think is the biggest problem in the process of the distant resettlement?
    A. too little compensation
    B. heavy loss in removal
    C. difficult to forsake the hometown
    D. uncertain future
    E. others(specify:_____)

14. What will you worry most about after moving?
    A. less land than before moving
    B. less employment opportunity
    C. poor environment
    D. lower income
    E. children's education
    F. big differences in agricultural production
    G. unfamiliar with the place and people
    H. different lifestyles
    I. language barriers
    J. difficulties in getting along with the host
    K. deteriorating health conditions of the aged people
    L. difficulties in resuming former work(specialty□_____)

15. How will you handle the situation if your requirements were not met and if your interests were damaged in the process of distant resettlement?
    A. endure
    B. complain
    C. report to the local government
    D. sue
    E. extreme behaviour
    F. return to the reservoir area

16. What do you mainly rely on to resume production and your life after moving?
    A. support and help of the local government and people
    B. self-reliance
    C. national poverty-alleviation policies
    D. preferential policy on distant resettlement
    E. assistance policy during the later stage of the TGP

17. How do you intend to become rich in the shortest time?
    A. work outside the settlement area
    B. engage in food production
    C. engage in cash crop
    D. engage in sideline production
    E. engage in animal husbandry
    F. do business
    G. engage in tourism
    H. engage in transportation
    I. engage in forestry
    J. learn new production skills and technology
    K. engage in processing industry
    L. others(specify:_____)

18. Do you think the following aspects in the process of distant resettlement are important?

	Very important	Rather important	Not very important	Not important
Compensation				
Land				
Employment opportunity				
Living environment				
Housing				
Transportation security				
Local language, culture, customs				
Food				
Medical insurance				
Social security				
Welfare of the aged people				
Women's status				
Children's education				
Social relationship				
Basic infrastructure (e.g., water, power supply, roads, telecommunication etc.)				

A 5:

Survey on Migrants Settled by the Government-Organised Distant Resettlement Trial in Deyang City, Sichuan Province, in 2000

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

1. (1)Do you have any information regarding the living, production, and basic infrastructure (such as traffic, schools, medical facilities) of the host area before moving there?
   A. yes
   B. no
   C. some but not comprehensive
   (2)What are the main sources of your information?
   A. relatives or friends
   B. newspaper, radiobroadcast, TV
   C. been to here before
   D. official propaganda
   E. government-organised visit
   F. hearsay
   G. others(specify:_____)

2. How did you build your new house?
   A. joint construction
   B. own construction
   C. commission construction
   D. purchase old house

3. (1) What is the living area per capita of your family after moving? of what building structure?
   (2)What is the living area per capita of your family before moving? of what building structure?
   (3)Are you satisfied with the present housing and living conditions?
   A. very satisfied
   B. rather satisfied
   C. not quite satisfied
   D. very dissatisfied
   (4) How much did you spend on the building/purchasing the house? Did you loan/borrow money? When is the repayment due?

4. How far away is your home from the county seat or downtown, town seat, school, hospital

and the main thoroughfares? (_____ Km;_____Km;_____Km;_____Km;_____Km)

5. Is your residential address here right from the beginning?
   A. yes B. moved before (original address:_____)

6. What support and assistance did the government provide when your were building your housing?
   A. reduce or free housing construction
   B. monitor the quality of housing construction
   C. allocate residential land
   D. readjust the address of the residential site
   E. provide good quality and cheap construction material
   F. provide information on old housing purchases
   G. recommend housing construction contractors
   H. no assistance

7. (1) How much housing and contracted land per capita did your family have before moving?
   (___ *mu* housing land; ___ *mu* contracted land)
   (2)What landuse types did your family have before moving? How much of each?
   farmland (paddy: ___ *mu*, dry land: ___ *mu*)
   A. orchid
   B. grassland
   C. forest land
   D. fish pond
   (3)Could your family enjoy the use of the public land of the community such as grass land and forest land before moving?
   A. yes B. no C. no public land
   (4)How much housing and contracted land does your family have now? (housing land: ___ *mu*; contracted land: ___ *mu*)
   (5)What landuse types does your family have now? How much of each?
   farmland (paddy: ___ *mu*, dry land: ___*mu*)
   A. orchid
   B. grassland
   C. forest land
   D. fish pond
   (6)Could your family enjoy the use of the public land of the community such as grass land and forest land after moving?
   A. yes
   B. no
   C. no public land

8. (1)What are the main agricultural products of your family before moving?
   A. rice
   B. wheat
   C. corn
   D. orange

E. other fruits
F. vegetable
G. garden or horticulture
H. fishery
I. forestry
J. animal husbandry
K. others(specify:_____)

(2)What kinds of agricultural productions have you or do you intend to engage in?

A. rice
B. wheat
C. corn
D. orange
E. other fruits
F. vegetable
G. garden or horticulture
H. fishery
I. forestry
J. animal husbandry
K. others(specify:_____)

9. (1)What were the main income sources of your family before moving?

A. selling crops
B. orange and other fruits
C. fishery
D. animal husbandry
E. handicraft industry
F. small business
G. working outside the region
H. transportation
I. tourism
J. high returns agriculture
K. others(specify:_____)

(2)What are the current main income sources of your family ?

A. selling crops
B. orange and other fruits
C. fishery
D. animal husbandry
E. handicraft industry
F. small business
G. working outside the region
H. transportation
I. tourism
J. high returns agriculture
K. others(specify:_____)

(3)How do you compare the current expected income of your family with that before moving?

A. much better than before moving
B. better
C. basically the same
D. worse
E. much worse
F. difficult to predict

(4)How do you compare the current income of your family with that of local hosts' family?

A. much better
B. better
C. the same
D. lower
E. much lower
F. unable to make comparison

10. (1)Have you or other family members returned or intend to return to the reservoir area?

A. yes B. no C. never thought of it

(2)If yes, how many times did you come back?

A. once
B. twice
C. more than twice

(3)Why did you return to the reservoir area?

A. miss relatives and friends
B. make know the current conditions to others
C. seek help
D. borrow money
E. borrow life's necessities
F. work for the construction in the reservoir area
G. others(specify:_____)

11. Do you think who should be responsible for distant resettlement?

A. government
B. migrants
C. both the governments and migrants

12.(1)Of the following distant resettlement funds and compensations, which are the ones received by your family?

A. production resettlement fund
B. basic infrastructure fund
C. management subsidy
D. subsidy for poverty-stricken migrant households
E. living allowance for the transition period during the process of resettlement
F. subsidy for purchasing production material
G. compensation for the original house and associated infrastructure
H. compensation for scattered trees or fruit trees

I. compensation for loss during removal and delay in work process
J. removal transportation fee
K. long distance bus transportation fee for moving out of the Chongqing reservoir area

(2)How do you assess the distant resettlement compensation and fund that you have obtained and will be obtaining?

A. a lot
B. rather much
C. comparable to the loss
D. less than the loss E. considerably deficient

(3)Which aspects have or will your compensation and fund be used in?

A. to construct or purchase housing
B. deposit
C. purchase life's necessities
D. to purchase farming tools, fertiliser and pesticide
E. to setup business
F. health and medical care
G. to lend to others
H. to setup enterprises
I. to purchase non-agricultural household registration
J. others(specify:_____)

13. If given the choice again, which resettlement scheme would you choose?

A. near resettlement further uphill
B. to live with relatives and friends
C. self-arranged distant resettlement
D. government-organised distant resettlement out of the reservoir area
E. resettling in the non-flooded counties within the Chongqing reservoir section
F. resettling in other provinces and municipality

14. What resettlement form do you like most?

A. centralised group
B. small centralised group
C. single household
D. sparsely resettled in a village

15. How do you assess the work of the government-organised distant resettlement scheme?

A. very successful
B. rather successful
C. not very successful
D. not successful
E. not clear

16. What important affairs did you settle before moving?

A. visit relatives and friends
B. pay respects to ancestors

C. visit and give treats to neighbourers
D. others(specify:_____)

17. How do you compare the resettlement location with the original location?
A. much better
B. a little better
C. same
D. a little worse
E. much worse

18. Are you satisfied with the work of the government officials responsible for resettlement of the sending and receiving areas?
A. yes B. no C. difficult to say

19. What do you think is the biggest problem in the process of the distant resettlement?
A. too little compensation
B. difficult to forsake the hometown
C. uncertain future
D. others(specify:_____)

20. What do you worry most about now?
A. less employment opportunity
B. poor environment
C. lower income
D. children's education
E. big differences in agricultural production
F. unfamiliar with place and people
G. different lifestyles
H. language barriers
I. difficulties in getting along with the hosts
J. heavy living pressure
K. deteriorating conditions of the aged
L. difficulties in resuming former work(specialty□_____)
M. others(specify:_____)

21. How will you handle the situation if your requirements were not met and if your interests were damaged in the process of distant resettlement?
A. endure
B. complain
C. report to the local government
D. sue
E. extreme behaviour
F. return to the reservoir area

22. What do you mainly rely on to resume production and your life after moving?

A. support and help of the local government and people
B. self-reliance
C. national poverty-alleviation policies
D. preferential policy on distant resettlement
E. assistance policy during the later stage of the TGP

23. How do you intend to become rich in the shortest time?
A. work outside the settlement area
B. engage in food production
C. engage in cash crop
D. engage in sideline production
E. engage in animal husbandry
F. do business
G. engage in tourism
H. engage in transportation
I. engage in forestry
J. learn new production skills and technology
K. engage in processing industry
L. others(specify:_____)

24. What assistance did the government in the receiving areas provide you to help restore production?
A. production skills training
B. one-to-one' help
C. education of law and order
D. market information
E. others (specify:_____)

25. Do you think the following aspects in the process of distant resettlement are important?

	Very important	Rather important	Not very important	Not important
Compensation				
Land				
Employment opportunity				
Living environment				
Housing				
Transportation security				
Local language, culture, customs				
Food				
Medical insurance				
Social security				
Welfare of the aged people				
Women's status				
Children's education				
Social relationship				
Basic infrastructure (e.g., water, power supply, roads, telecommunication etc.)				

A 6:

Survey on the Local Residents in the Receiving Communities

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

1. Do you like the TGP migrants settling in your community?
   A. Yes, very much
   B. Yes, rather
   C. No, not very much
   D. No, not at all

2. Are you willing to share resources (land, water, power supply and other infrastructure) with the migrants?
   A. Yes, very much
   B. Yes, rather
   C. No.

3. (1)How much residential land does your family have per capita? (____ *mu*)
   (2) How much contracted land does your family have per capita? (____ *mu*)
   (3) The types of contracted land of your family:
      A. farmland_____*mu*
      B. orchid_____*mu*
      C. grassland_____*mu*
      D. forest land_____*mu*
      E. fish pond_____*mu*
   (4)How do you make use of your family's contracted land?
      A. all for own use
      B. some for own use, some sub-contracted to others
      C. all sub-contracted to others
      D. left fallow
   (5)Was your contracted land readjusted when the migrants came to your village?
      A. yes (reduced by _____*mu*)
      B. no
   (6)Are you willing to allocate some of your contracted land to the migrants?
      A. yes
      B. no
      C. The authorities have to make the adjustments, there is no other choice.

4. What is the living area per capita of your family? of what building structure?(_____m^2

per capita_____structure)

5. (1)Per capita annual income of your family (____ *yuan*).
   (2)What are the main sources of income for your family?
   A. sale of crops
   B. fruit cultivation
   C. fishery
   D. animal husbandry
   E. cottage industry-handicraft
   F. small business
   G. employment
   H. transportation
   I. tourism
   J. high-return agriculture
   K. others(specify:_____)

6. With the migrants moving here, what are you most worried about?
   A. land adjustment
   B. conflicts over residential land
   C. difficulties in getting along with the migrants
   D. deterioration of social order
   E. less employment opportunities
   F. others(specify:_____)

7. The migrants enjoy some preferential policies and favourable treatment under the distant resettlement scheme. Do you envy them?
   A. yes
   B. no
   C. do not know

8. If you were a migrant, which resettlement scheme would you prefer?
   A. near resettlement further uphill
   B. living with relatives and friends
   C. self-arranged distant resettlement
   D. resettled in non-flooded counties within the Chongqing reservoir area
   E. moving to here
   F. moving to the other provinces

9. How will you resolve conflicts arising between you and the migrants?
   A. endure
   B. complain
   C. report to the authorities
   D. sue
   E. never give in to the migrants
   F. extreme behaviour

10. Do you think the local government yields to or is partial to the migrants regarding resettlement policies and implementation?
    A. yes
    B. no
    C. impartial
    D. do not know

11. What is your general impression of the migrants in your community?
    A. very good
    B. rather well
    C. so-so
    D. not very well
    E. very bad
    F. do not understand

12. Please compare the changes in your town/commune before and after receiving the migrants? (check the appropriate boxes)

	Increased/improved	No change	Deteriorated or decreased
Resettlement capital investment			
Land per capita			
Environment			
Employment conditions			
Social relationship			
Development of enterprise			
Roads and traffic			
Schools			
Medical facilities			
Housing conditions			
Drinking water			
Telecommunications and postal service			
Income			
Women's status			
Security of the ageing population			
Medical insurance			

A 7:

Survey on Town or Township Receiving Migrants

Date		Questionnaire No.	
Location		Interviewer	

Name		Age		Sex		Education		Position/Title	

1. Basic Natures

1.1 Total area of the commune or town:_____km^2.

1.2 (1)Population:_____.

(2)Age distribution: 0—14 years:_____;15—34 years:_____;

35—64 years:_____; >65 years:_____.

(3)Gender ratio: Male : Female_____.

(4)proportion of nationality: Population or percentage of minor nationality_____.

1.3 Number of migrant households and persons who have been resettled from 1994 to 2000: _____.

1.4 What are the reasons for receiving migrants into your town or township?

A. surplus land
B. The quantity or quality is more or better than that of sending areas
C. good climate and suitable for living
D. better water supply
E. arranged by the government
F. good cultural and recreational facilities
G. many employment opportunities (e.g., township industry)
H. others (specify:_____)

1.5 (1) Where are the migrants from?

Sending areas:_____province (municipality)_____county (district) township (town)_____village

Population:_____.

(2) Under which of the following categories is the sending area?

A. the same township (town)
B. different commune (town) in the same county
C. other county in the Chongqing reservoir section

1.6 (1) Since receiving and resettling the migrants, are there anyone who have left here for another place?

A. yes (Number:_____ Male:_____; Female:_____)
B. no

(2) If yes, what are their reasons for leaving?

A. no or insufficient farmland
B. worse land quality than before
C. poor water supply
D. poor climate, unsuitable for living
E. lack of cultural and recreational facilities
F. poor income
G. few employment opportunity
H. little agricultural activity
I. others(specify:_____)

(3) Where are they mainly headed for?

Destination: _____

Is the destination the countryside or city?_____

1.7 (1) After the migrants were settled here, are there anyone who have left here for other places?

A. yes (Number:_____ Male:_____; Female:_____)
B. no

(2) If yes, what are their reasons for leaving?

A. no or insufficient farmland
B. worse land quality than before
C. poor climate, unsuitable for living
D. low income
E. little agricultural activity
F. few employment opportunity
G. have used up the resettlement compensation
H. no relatives or friends
I. unfair treatment
J. others(specify:_____)

(3) Where are they going?

Destination:_____

Is the destination the countryside or city?_____.

1.8 What is the net change in population of this community since receiving the migrants?

A. more immigrants
B. more emigrants
C. The two are comparable
D. do not know

2. Economy

2.1 What are the main economic activities in the township (town)?

A. agriculture
B. non-agriculture(go to 2.3)

C. both

2.2 What are the main agricultural products?

A. grain(main types:_____)
B. cash crop(main types:_____)
C. animal husbandry (main:_____)
D. fishery
E. forestry

2.3 What are the main non-agricultural activities?

A. mining(specify:_____)
B. cottage industry-handicraft
C. manufacturing(specify:_____)
D. construction
E. commerce and trade
F. tourism
G. service industry
H. transportation
I. others(specify:_____)

2.4 What percentage of children aged below 16 is entering school?

A. 0
B. about1/4
C. about1/2
D. about3/4
E. about100%

2.5 (1) What percentage of male aged over 15 is engaged in employment outside the town/township?

A. 0
B. about1/4
C. about1/2
D. about3/4
E. about100%

(2) Is what kind of work (specify:_____;_____;_____)

(3) estimated income(specify:_____*yuan*/a;_____*yuan*/a;_____*yuan*/a)

2.6 (1) What percentage of female aged over 15 is engaged in employment outside the town/township?

A. 0
B. about1/4
C. about1/2
D. about3/4
E. about100%

(2) Is what kind of work (specify:_____;_____;_____)

(3) estimated income (specify:_____*yuan*/a;_____*yuan*/a;_____*yuan*/a)

2.7 Does the commune or town have any on-going or future projects constructed?

A. yes (specify:_____)
B. no

2.8 (1) What projects have been embarked on since receiving migrants?

A. constructing new and/or widening roads
B. setting up irrigation systems
C. opening up land
D. improving low yielding land
E. constructing new hospital or clinics
F. constructing new school
G. constructing new and/or restoring water supply systems
H. tree or grass planting
I. constructing new and/or restoring electricity generation system
J. others(specify:_____)

(2) Are these projects related to the TGP resettlement?(Describe in detail)

2.9 (1) Are there any state-owned enterprises or farms in this township?

A. yes
B. no

(2) brief account (provide document)

A. name:_____
B. address:_____
C. leading products:_____
D. no. of employees: _____
E. no. of migrants employed:_____
F. no. of migrants still working in the enterprise:_____
G. annual production:_____ *yuan*
H. annual profits:_____ *yuan*

2.10 (1) Are there any township or village-owned enterprises in the township?

A. yes
B. no

(2) brief account(provide document)

A. name:_____
B. address:_____
C. leading products:_____
D. no. of employees: _____
E. no. of migrants employed:_____
F. no. of migrants still working in the enterprise:_____
G. annual production:_____ *yuan*
H. annual profits:_____ *yuan*

2.11(1) Are there any newly established enterprises in the town/township since receiving migrants?

A. yes
B. no

(2) brief account

A. name:_____
B. address:_____
C. leading products:_____
D. no. of employees: _____
E. no. of migrants employed:_____
F. no. of migrants still working in the enterprise:_____
G. annual production:_____ *yuan*
H. annual profits:_____ *yuan*

2.12(1) Industrial structure of the commune or town: _primary industry : secondary industry: tertiary industry

(2) internal structure of the agriculture:__plantation : animal husbandry : forestry : fishery : cottage industry-handicraft___(provide data)

(3) grain production : cash crop production __(provide data)

2.13(1) How is the economic development like compared to before receiving the migrants?

A. improved
B. similar
C. deteriorated
D. do not know

(2)Why?

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3. Agricultural Industry

3.1 How much land does the commune or town have?

3.2 How much land has/will be allocated to each migrant?

3.3 How much land does each original resident have?

3.4 (1) How much arable land does the commune or town have?

(2) What is the land-use structure?

cultivated land: forestry land: grass land: fishpond = _____

3.5 (1) How much land has the commune or town opened up since receiving the migrants?

(2) How much new land will be opened up?

3.6 Of the land that may be opened up, how much land can be opened up?

3.7 (1) How much low-yield land has been improved since receiving migrants?

(2) How much low-yield land will be improved?

3.8 (1) How much land does a typical household in the township own?
(2) What is largest land area owned by a household?
(3) What is smallest land area owned by a household?

3.9 What is the proportion of the irrigated farmland?

A. 0
B. about 1/4
C. about 1/2
D. about 3/4
E. about 100%

3.10 Are there any serious incidents of floods, droughts, mudslides or other natural disasters during the past 5 years?

A. yes(specify:_____; dd/mm/yy _____)
B. no

3.11 What are the changes that have occurred in the following aspects since receiving the migrants?

	Increase (+)	Hardly any change(0)	Decrease (-)
Types of crops			
Types of livestock			
Arable land area			
Forest/grassland area			
Fertiliser used			
Irrigation area			
Scattering of the contracted land of a household			
Intensive agriculture			
Others(specify:____)			

3.12 What related agricultural issues or negative effects have resulted from the resettlement?

A. decreased crop production
B. drought
C. flooding
D. resettlement tasks that are too taxing
E. inadequate land
F. tree felling
G. decreased crop price
H. increase in arable land area
I. more agricultural diseases and pests
J. more severe outpouring of the labour force
K. exacerbated water and soil erosion

L. others(specify:_____)

3.13 What are the general effects of resettlement on the agricultural development of the community?

A. more advantages than disadvantages
B. more disadvantages than advantages
C. no effects

APPENDIX B SURVEY QUESTIONNAIRES ON THE TGP RESETTLEMENT (CHINESE VERSION)

B 1:

库区负责三峡工程移民安置的官员和专家

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

1. 如何评价不同形式的迁安方式的利弊？
   A.就地后靠　　B.自主外迁　　C.投亲靠友
   D.出市外迁　　E.重庆库区内外迁

2. 你所在市/县/区/乡（镇)范围内，不同形式的迁安移民人口数量各占多少? (提供资料)

3. 移民安置对你所在区域的社会经济发展产生了哪些正.负方面的影响？（提供资料 ）
   A.土地的数量和质量　　B.土地利用结构　　C.产业结构
   D.农业内部结构　　E.退耕还林　　F.GNP 增长速度
   G.人均收入

4. 移民安置对你所在区域的环境造成了哪些方面的影响？最严重的是哪方面？如何治理?（提供资料）
   A.水土流失　　B.生物种减少或濒临灭绝
   C.城市污染加重　　D.水质下降　　E.森林覆盖率

5. ‘就地后靠’安置过程中遇到的或将遇到的困难主要有哪些?

6. 二.三产业中安置农村移民出现的主要问题有哪些？举例。

7. 对于移民安置中的特困群体.脆弱群体（老人.妇女.儿童）问题有无政策？准备采取什么措施来解决 ？

8. 外迁工作中遇到的来自于接收地和外迁移民的问题或困难分别主要有哪些?
9. 你认为三峡移民有哪些特殊心态？如何看待处理?

10. 确定外迁移民中困难户的标准是什么？

11. 你认为处迁安置优于就地后靠吗？为什么?

12. 当地移民愿意外迁还是‘就地后靠’？为什么？

13. 对于三峡移民的随迁人口和超生子女的户口.宅基地和承包地问题，在‘就地后靠’安置.外迁安置及其它安置方式中分别如何解决的？他们是否享有与其他移民同等的优惠政策待遇？举例。

14. 本地移民愿意进城镇/二.三产业安置，还是大农业安置？为什么？

15. 能提供‘移民安置规划’，本地‘十•五计划’报告吗？

B 2:

接收地负责三峡工程移民安置的官员和专家

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

1. 接收地负责安置三峡库区外迁移民的机构是如何设置的？

2. 本地在安置外迁移民过程中遇到的或将可能遇到的困难主要有哪些？

3. 对于三峡移民中的特困群体、脆弱群体（老人、妇女、儿童）问题有无政策？准备采取什么措施来解决？

4. 接收移民对本地社会、经济发展、环境有哪些正、负方面的影响？

5. 如何调整原居民的宅基地、承包地或划拔集体保留的土地（如：农场、渔塘等）给移民？遇到哪些障碍？

6. 谈谈“相对集中安置到县乡，分散插花到村组”的利弊。

7. 请小结一下移民在宅基地选取地和建（购）房中的要求，及如何对待的?

8. 打算如何使用移民迁安带入的生产安置费、基础设施费？已用于或将用于发展哪些项目？

9. 本地政府部门对接收安置移民有哪些地方性优惠政策、措施?

10. 有无使移民尽快恢复生产并逐渐富起来的规划和措施？是什么？

11. 你认为三峡移民有哪些特殊心态？如何看待处理？

12. 如何解决老居民出现的或可能出现的‘不公正’'不平衡’的思想？举例。

13. 接收地如何解决三峡移民的随迁人口和超生子女的户口、宅基地、承包地问题？他们是否享有与其他移民同等的优惠政策待遇？

B 3:

就地后靠的移民家庭

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

注: * 已搬迁移民回答

1.（1）你认为‘就地安置’与外迁安置哪个好?
A. 就地安置好 B.一样 C.外迁好
（2）为什么?
A.故土难离 B.外迁地人生地不熟 C.外迁搬家损失太大
D.外地文化.生活.风俗不习 E.外地比库区经济发达
F.外地土地多 G.外迁得到的补偿多 (指明：_____)

2.（1）你若能选择，愿意进城镇/二.三产业安置，还是大农业安置?
A.进城镇从事二.三产业 B. 从事农业 C.差不多
D.其它 (指明：_____)
（2）为什么?
A.城镇比农村好 B.二.三产业收入高 C.农业收入低
D.库区的城镇不比农村好多少 E.二.三产业面临下岗.失业
F.打工机会少.生意难做 G.难比较

3.你若能选择，愿意哪种安置方式
A.就地后靠 B.投亲靠友 C.自主外迁
D.政府组织的迁出库区 E.重庆市库区内安置

4.*（1）你家___年_____月____日搬到现住地的?
*（2）你家搬迁前的人均住房面积_____平方米，房屋结构:_____。
*（3）你家搬迁后的人均住房面积_____平方米，房屋结构:_____。
（4）你对现在的住房.生活条件满意吗?
A.很满意 B.较满意 C.不太满意 D.很不满意

5.（1）你家人均年收入大约是_____元。
（2）你知道当地人均约年收入最高.最低大约各多少吗？（_____元/年·人；
元/年·人）
*（3）与本地非移民相比，移民的家庭收入状况如何?
A.高得多 B.高一些 C.基本一样 D.略低 E.低得多
*（4）与搬迁前相比，你家的生活水平状况如何?

A.极大改善　B.改善了一些　C.基本一样　D.差一些　E.差得多

*（5）你家花了多长时间来恢复生产，以致达到搬迁前的生活水平

（_____年或_____月）

6.*（1）你家搬迁前人均有_____亩宅基地；_____亩承包地。

*（2）你家搬迁前的土地类型有哪些？各多少？

A.耕地（水田：_____亩；旱地：_____亩）　B.果园地

C.草地　D.林地　E.渔塘

*（3）你家搬迁前能享用当地的集体公用土地（如：草山.草坡.林地）吗？

A.是　B.否　C.没有公用土地

*（4）你家现在能享用当地的集体公用土地（如：草山.草坡.林地）吗？

A.是　B.否　C.没有公用土地

（5）你家现在人均有_____亩宅基地；_____亩承包地。

（6）你家现在的土地类型有哪些？各多少？

A.耕地（水田：_____亩；旱地：_____亩）　B.果园地

C.草地　D.林地　E.渔塘

7.*（1）你家搬迁前的主要农业生产类型是什么？

A.水稻　B.小麦　C.玉米　D.柑拮　E.其它水果　F.种菜

G.苗莆园艺　H.渔业　I.林业　J.畜牧业　K.其它（指明：_____）

*（2）你家现在的主要农业生产类型是什么？

A.水稻　B.小麦　C.玉米　D.柑拮　E.其它水果　F.种菜

G.苗莆园艺　H.渔业　I.林业　J.畜牧业　K.其它（指明：_____）

8.*（1）你家搬迁前的主要收入来源是什么？

A.卖粮食　B.柑拮和其它水果　C.渔业　D.畜牧业

E.手工业　F.做生意　G.外出打工　H.搞运输

I.旅游业　J.高效农业　K.其它（指明：_____）

（2）你家现在的主要收入来源是什么？

A.卖粮食　B.柑拮和其它水果　C.渔业　D.畜牧业

E.手工业　F.做生意　G.外出打工　H.搞运输

I.旅游业　J.高效农业　K.其它（指明：_____）

*（3）你家现在的收入与搬迁前相比如何？

A.远比过去好　B.较好　C.基本一样　D.较差　E.差得多

9.这里的环境与移民安置前相比，有哪些变化？

A.变好了　B.没变化　C.变差了　D.水土流失加重

E.水土流失减轻　F.坡地树木.草地增多了　G.坡地树木.草地减少

H.天然野生动植物种类和数量增多了　I.天然野生动植物种类和数量减少了

J.其它（指明：_____）

10.你对负责移民的干部和工作人员的工作满意吗？

A.很满意　B.较满意　C.不太满意　D.很不满意　E.难说

11.你现在担心什么？

A.生活压力大　B.打工机会少　C.环境差　D.收入减少

E.子女教育　　F.农业生产差别大　　G.人生地不熟　　H.生活方式不同
I.语言不通　　J.与当地居民关系难处　K.老人健康下降
L.难以从操旧业（特长：_____）　M.其它（指明：_____）

12.你认为迁安后恢复生产，生活主要靠什么？
A.当地政府.群众帮助　　B.自力更生　　C.国家扶贫政策
D.安置补偿费　　E.三峡工程后期扶持政策

13.你准备怎样富起来？
A.外出打工　　B.搞粮食生产　　C.发展经济作物　　D.搞副业
E.搞畜牧.养殖业　F.做生意　　G.搞旅游业　　H.搞运输业
I.发展林业　　J.学习新的生产技能技术　　K.搞加工业
L.其它　（指明：_____）　　N.没想过

14.作为三峡工程的移民，你怎样看待自己？
A.奉献者　　B.牺牲品　　C.受益者　　D.特殊公民

15.你家里作为移民的老人.妇女.儿童是否享受到特别的待遇？
A.是（指明：_____）　　B.否　　C.不知道

16.请比较你所在的乡（镇）接收移民前后的变化（合适地方打钩).

项目　\ 程度	变好或增加	没变	变差或减少
移民资金投入			
人均土地			
环境			
就业状况			
社会关系			
企业发展			
道路.交通			
学校校舍			
医疗设施			
住房条件			
饮用水			
通讯.邮电			
收入			
妇女地位			
养老保险			
医疗保险			

B 4:

2001 - 02 年将外迁安置的移民家庭

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

1.（1）你愿意外迁安置吗？

A. 是　　B. 否　　C. 不得不外迁

（2）为什么？

A. 外迁比就地安置好　　B. 水赶人走，水不到，人不走

C. 外迁不如就地安置好　　D. 故土难离

2. 你知道何时外迁、迁入地及其远近吗？

A. 是（时间：＿年＿月＿日；迁入地：＿省（市）＿县（市）＿乡（镇）＿村（组）；距离：＿＿＿＿）

B. 否

3. 你认为谁应对外迁负责？

A. 政府　　B. 移民　　C. 政府和移民

4. 你认为下列外迁安置资金哪些与你有关？

A. 生产安置费　　B. 基础设施费　　C. 管理补助费

D. 困难补助费　　E. 过渡期生活补助费　　F. 生产资料购置补助费

G. 房屋及附属设施补偿费　　H. 零星果木补偿费　　I. 搬迁损失费、误工补偿费

J. 搬迁运输费　　K. 出重庆市长途汽车运输费

5. 你对将得到外迁安置资金满意吗？

A. 很满意　　B. 较满意　　C. 不太满意　　D. 很不满意

6. 若能选择，你愿意选择哪种安置形式？

A. 就地后靠　　B. 投亲靠友　　C. 自主外迁

D. 政府组织的迁出库区　　E. 重庆市库区内安置

7. 你最喜欢哪种外迁安置点形式？

A. 集中成片安置　　B. 小规模成组安置　　C. 独家独户　　D. 分散插组

8. 你相信政府能成功组织好外迁工作吗？

A. 是　　B. 否　　C. 半信半疑

9. 搬迁前你有哪些重要事情要做？
A. 走亲访友　B. 祭祖宗　C. 拜请乡邻　D. 其它（请指出：_____）

10. 外迁前你希望得到哪些帮助？
A. 考察迁入地 1 次
B. 考察迁入地多次
C. 自主选择迁入地
D. 技能培训
E. 得到多种信息，以便比较不同迁入地的条件
F. 迁各市地安置条件的真实介绍

11. 据你所知，你要迁往的地方与你所在地相比如何？
A. 好得多　B. 好一些　C. 一样　D. 差一些　F. 差得多

12. 你对本地和接收地政府负责移民的干部和工作人员的工作满意吗？
A. 是　B. 否　C. 难说

13. 你认为外迁过程中最大的困难是什么？
A. 补偿太低　B. 搬家损失太大　C. 故土难离
D. 前途未卜　E. 其它（指明：_____）

14. 你外迁后最担心什么？
A. 土地比原来少　B. 打工机会少　C. 环境差　D. 收入减少
E. 子女教育　F. 农业生产差别大　G. 人生地不熟　H. 生活方式不同
I. 语言不通　J. 与当地居民关系难处　K. 老人健康下降
L. 难以从操旧业（特长：_____）

15. 在外迁安置中，若你的要求不能满足，利益受到损害，你将如何对待？
A. 忍受　B. 抱怨　C. 向当地政府反映
D. 上诉告状　E. 极端行为　F. 返回库区

16. 你认为搬迁后恢复生产. 生活主要依靠什么？
A. 当地政府、 群众帮助　B. 自力更生　C. 国家扶贫政策
D. 外迁优惠政策　E. 三峡工程后期扶持政策

17. 你外行这后准备怎样尽快富起来？
A. 外出打工　B. 发展粮食生产　C. 发展经济作物　D. 发展副业
E. 发展畜牧、养殖业　F. 做生意　G. 发展旅游业　H. 搞运输业
I. 发展林业　J.学习新的生产技能技术
K. 发展加工业　L. 其它（指明：_____）

18. 你认为在外迁过程中以下方面重要与否（在合适的地方打钩）

	很重要	较重要	不太重要	不重要
补偿				
土地				
就业机会				
生活环境				
住房				
运输安全				
当地语言、 文化、 习俗				
食品				
医疗保险				
社会保障				
老人福利				
妇女地位				
孩子教育				
社会关系				
基础设施（如：水、 电、 路、 通讯等）				

B 5:

2000年四川省德阳市外迁试点安置的移民家庭

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

1. （1）你搬住这里前，你有任何关于这里的生活、生产条件或基础设施（如交通、学校、 医疗等）方面的信息吗？
   A. 是　　B. 否　　C. 有一些但不全面
   （2）主要的信息来源是什么？
   A. 亲戚、朋友　B. 报纸、广播、电视　C. 以前来过　D. 官方宣传
   E. 政府组织的考察　F. 道听途说　G. 其它（指明：_____）

2. 你是如何创建住房的？
   A. 联建　B. 自建　C. 委托代建　D. 购买旧房

3. （1）你家现在人均住房面积多大？结构？（_____平方米；结构:_____）
   （2）你家搬迁前人均住房面积多大？结构？（_____平方米；结构:_____）
   （3）你对现在的住房. 生产条件满意吗？
   A. 很满意　B. 较满意　C. 不太满意　D. 不满意
   (4) 购（建）房花了多少钱？贷借钱了吗？向谁借的？何时还？

4. 你家离县城（市区）、 集镇、 学校、 医院、 主要公路分别多远？

5. 你家住址从一开始就在此吗？
   A. 是　　B. 调整过（原址：_____）

6. 建房过程中本地政府给予过你哪些支持和帮助？
   A. 减免建房税费　B. 把建房质量关　C. 划拨宅基地　D. 调整房址
   E. 提供质优价廉的建材　F. 提供购旧房信息　G. 推荐建房承包商　H. 没帮助

7. （1）你家搬迁前人均有多少宅基地. 承包地？
   （_____平方米/人；_____亩/人）
   （2）你家搬迁前的土地类型有哪些？
   A. 耕地　B. 果园地　C. 草地　D. 林地　E. 渔塘
   （3）你家搬迁前能享用当地的集体公用土地吗？
   A. 是　　B. 否　　C. 没有公用地

（4）你家现在人均有多少宅基地. 承包地？
（_____平方米/人；_____亩/人）
（5）你家现在的土地类型有哪些？
A. 耕地　　B. 果园地　　C. 草地　　D. 林地　　E. 渔塘
（6）你家现在能享用当地的集体公用土地吗？
A. 是　　B. 否　　C. 没有公用地

8. （1）你家搬迁前的主要农业生产是什么？
A. 水稻　　B. 小麦　　C. 玉米　　D. 柑拮
E. 其它水果　　F. 种菜　　G. 苗莆园艺　　H. 渔业
I. 林业　　J. 畜牧业　　K. 其它（指明：_____）
（2）你家现在已开展的或打算从事的主要农业生产是什么？
A. 水稻　　B. 小麦　　C. 玉米　　D. 柑拮
E. 其它水果　　F. 种菜　　G. 苗莆园艺　　H. 渔业
I. 林业　　J. 畜牧业　　K. 其它（指明：_____）

9. （1）你家搬迁前的主要收入来源是什么？
A. 卖粮食　　B. 柑拮和其它水果　　C. 渔业　　D. 畜牧业
E. 手工业　　F. 做生意　　G. 外出打工　　H. 搞运输
I. 旅游业　　J. 高效农业　　K. 其它 （指明：_____）
（2）你家现在或可能的主要收入来源是什么？
A. 卖粮食　　B. 柑拮和其它水果　　C. 渔业　　D. 畜牧业
E. 手工业　　F. 做生意　　G. 外出打工　　H. 搞运输
I. 旅游业　　J. 高效农业　　K. 其它 （指明：_____）

（3）你预计现在的可能收入与搬迁前相比如何？
A. 远比过去好　　B. 较好　　C. 基本一样
D. 较差　　E. 差得多　　F. 难预测
（4）你预计现在的可能收入与当地居民相比如何？
A. 好得多　　B. 较好　　C. 基本一样
D. 低一些　　E. 差得多　　F. 没法比较

10. （1）你或家里其他人返回过或打算返回库区吗？
A. 是　　B. 否　　C. 没想过
（2）返回过几次？
A. 1 次　　B. 2 次　　C. 2 次以上
（3）返回库区的原因？
A. 想念亲戚朋友　　B. 介绍这里的情况　　C. 寻求帮助　　D. 借钱
E. 借生活物品　　F. 库区工程建设打工　　G. 其它（指明：_____）

11. 你认为谁应对外迁安置负责？
A. 政府　　B. 移民　　C. 政府和移民

12. （1）下列外迁安置资金你家已得到哪些？
A. 生产安置费　　B. 基础设施费　　C. 管理补助费
D. 困难补助费　　E. 过渡期生活补助费　　F. 生产资料购置补助费

G. 房屋及附属设施补偿费 H. 零星果木补偿费 I. 搬迁损失费、误工补偿费
J. 搬迁运输费 K. 出重庆市长途汽车运输费

（2）如何评价已得到及将得到的迁安资金？
A. 很多 B. 较多 C. 与损失基本相当 D. 比损失少 E. 极其不足

（3）你家得到的迁安资金用于哪些方面？
A. 建（购）房 B. 存款 C. 添置生活用品 D. 添买农具、化肥农药
E. 做生意 F. 医疗 G. 借给他人 H. 开办企业
I. 买农转非的户口 J. 其它（指明：_____）

13. 若能再次选择，你愿选择哪种安置方式？
A. 就地后靠 B. 投亲靠友 C. 自主外迁
D. 政府组织的迁出库区 E. 重庆市库区内安置 F. 外迁到其他省市

14. 你最喜欢哪种外迁安置点形式？
A. 集中成片安置 B. 小规模成组安置 C. 独家独户 D. 分散插组

15. 你对政府组织的外迁工作评价如何？
A. 非常成功 B. 较成功 C. 不太成功 D. 不成功 E. 不清楚

16. 搬迁前你做了哪些事务？
A. 走亲访友 B. 祭祖宗 C. 拜请乡邻 D. 其它（请指出：_____）

17. 现在的住地与原迁出地相比如何？
A. 好得多 B. 好一些 C. 一样 D. 差一些 F. 差得多

18. 你对迁出地和接收地政府负责移民的干部和工作人员的工作满意吗？
A. 是 B. 否 C. 难说

19. 你认为外迁过程中最大的困难是什么？
A. 补偿太低 B. 故土难离 C. 前途未卜 D. 其它（指明：_____）

20. 你现在最担心什么？
A. 打工机会少 B. 环境差 C. 收入减少 D. 子女教育
E. 农业生产差别大 F. 人生地不熟 G. 生活方式不习惯 H. 语言不通
I. 与当地居民关系难处 J. 生活压力大 K. 老人健康下降
L. 难以从操旧业（特长：_____） M. 其它（指明：_____）

21. 在外迁安置中，当你的要求不能满足，利益受到损害，你将如何对待？
A. 忍受 B. 抱怨 C. 向当地政府反映
D. 上诉告状 E. 极端行为 F. 返回库区

22. 你认为迁安后恢复生产，生活主要靠什么？
A. 当地政府、 群众帮助 B. 自力更生 C. 国家扶贫政策
D. 外迁优惠政策 E. 三峡工程后期扶持政策

23. 你准备怎样富起来？

A. 外出打工　　B. 发展粮食生产　　C. 发展经济作物　　D. 发展副业
E. 发展畜牧、养殖业　F. 做生意　　G. 发展旅游业　　H. 搞运输业
I. 发展林业　　J.学习新的生产技能技术
K. 发展加工业　　L. 其它（指明：_____）

24. 接收地政府对移民提供了哪些恢复生产的帮助？
A. 生产技能培训　　B. '一帮一'帮扶　　C. 普法教育
D. 市场信息　　E. 其它（指明：_____）

25. 你认为在外迁过程中以下方面重要与否（在合适的地方打钩）

	很重要	较重要	不太重要	不重要
补偿				
土地				
就业机会				
生活环境				
住房				
运输安全				
当地语言、 文化、 习俗				
食品				
医疗保险				
社会保障				
老人福利				
妇女地位				
孩子教育				
社会关系				
基础设施(如:水、 电、 路、 通讯等)				

B 6:

迁入地老居民

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

1. 你喜不喜欢移民迁到你村里?
   A. 非常喜欢　B. 较喜欢　C. 不太喜欢　D. 非常不喜欢

2. 你愿不愿意移民占用部分土地，与你共用水及其它基础设施?
   A. 非常愿意　B. 较愿意　C. 不太愿意

3. （1）你家人均多少宅基地？（_____平方米/人）
   （2）你家人均多少承包地？（_____亩/人）
   （3）你家承包地类型?
   A. 耕地_____亩；　B. 果园地_____亩；　C. 草地_____亩；
   D. 林地_____亩；　E. 渔塘_____亩；
   （4）你家的承包地如何使用的?
   A. 全部自己使用　B. 部分自用、部分转包　C. 全部转包　D. 闲置
   （5）移民进村，你家的承包地受影响而调整过吗?
   A. 是 (减少_____亩)　B. 否
   （6）你愿意把你家的承包地划拔给移民吗?
   A. 愿意　B. 不愿意　C. 政府要求调整，没别的选择

4. 你家人均多大的住房面积？结构？（_____平方米/人；_____结构）

5. （1）你家人均年收入_____元。
   （2）你家的主要收入来源是什么?
   A. 卖粮食　B. 种水果　C. 渔业　D. 畜牧业
   E. 手工业　F. 做生意　G. 外出打工　H. 搞运输
   I. 旅游业　J. 高效农业　K. 其它（指明：_____）

6. 移民迁住这里，你最担心什么?
   A. 调整土地　B. 宅基地纠纷　C. 关系难处
   D. 社会治安变差　E. 就业机会减少　F. 其它（指明：_____）

7. 外迁移民能享受很多优惠政策，你羡慕吗?
   A. 羡慕　B. 不羡慕　C. 说不清

8. 若你是移民，你愿意哪种形式安置？

A. 就地后靠　　B. 投亲靠友　　C. 自主外迁

D. 重庆市库区内安置　　E. 迁到这里　　F. 外迁到其它省（市）

9. 要是与移民生产矛盾，你如何解决？

A. 忍受　　B. 抱怨　　C. 向政府部门反映

D. 上诉告状　　E. 决不相让　　F. 极端行为

10. 你认为本地政府在安置移民的政策和作法上迁就或偏向移民吗？

A. 是　　B. 否　　C. 公平处理　　D. 不知道

11. 你对这里的移民的总体印象如何？

A. 很好　　B. 较好　　C. 一般

D. 不太好　　E. 很差　　F. 不了解

12. 请比较你所在的乡（镇）接收移民前后的变化（合适地方打钩）

	变好或增加	没变	变差或减少
移民资金投入			
人均土地			
环境			
就业状况			
社会关系			
企业发展			
道路、交通			
学校校舍			
医疗设施			
住房条件			
饮用水			
通讯、邮电			
收入			
妇女地位			
养老保险			
医疗保险			

B 7:

接收移民的乡镇

时间		问卷编号	
地点		采访人	

姓名		年龄		性别		文化程度		职位/职称	

一、基本特征

1.1 本乡（镇）总面积：_____平方公里。

1.2 （1）人口：_____人。
（2）年龄结构：0—14 岁：_____人；15—34 岁：_____人；
35—64 岁：_____人； >65 岁：_____人。
（3）性别结构：男：女_____。
（4）民族构成：少数民族人口数量或% _____。

1.3 1994—2000 年接收安置三峡移民的户数和人数：：_____户_____人。

1.4 为什么安置移民到本乡（镇）？
A. 有剩余土地 B. 比移出地的土地多或质量好 C. 气候好，适宜居住
D. 供水更好 E. 政府安排的 F. 有好的文化、娱乐、休闲设施
G. 就业机会多（如：乡镇企业） H. 其它（指明：_____）

1.5（1）移民从哪里来？
原所在地：_____省（市）_____县（区）_____乡（镇）_____村；
人数：_____人。
（2）原所在地属于以下哪种？
A. 同一个乡（镇） B. 同一个县（市/区）的不同乡（镇）
C. 重庆库区的其它县（市/区）

1.6（1）自接收安置移民以来，有人离开本乡（镇）迁居异地吗？
A. 是（人数：_____人；男：_____人；女：_____人）
B. 否
（2）他们离开本乡（镇）的原因是什么？
A. 没有土地或无足够土地 B. 土地质量比从前下降 C. 供水差
D. 气候差，不宜居住 E. 缺乏文化、娱乐、体闲设施 F. 收入低
G. 就业机会少 H. 农活少 I. 其它（指明：_____）
（3）他们主要去往哪里？

目的地：_____；
那些地方是城镇或农村？_____

1.7（1）移民安置在这里以后，有无离开此乡（镇）迁居异地的？
A. 有（人数：_____人；男：_____人；女：_____人） B. 无
（2）移民离开本乡（镇）的原因是什么？
A. 无土地，或少地 B. 土地质量差 C. 气候差，不宜居住
E. 收入低 F. 农活少 G. 就业机会少 H.安置补偿费用光了
I. 没有亲戚朋友 J. 遭受不公正的待遇 K. 其它 (指明：_____)
（3）他们主要去往哪里？
目的地：_____；
那些地方是城镇或农村？_____。

1.8 自接收安置移民以来，本乡（镇）内移进和移出的人口数量相比如何？
A. 移入者多 B. 移出者多 C. 二者相当 D. 不知道

二、经济

2.1 乡（镇）的经济活动主要是农业还是非农业？
A. 农业 B. 非农业（跳至 4.3 ） C. 二者皆有

2.2 主要的农业生产是什么？
A. 粮食作物（主要种类：_____） B. 经济作物（主要种类：_____）
C. 畜牧业（主要种类：_____） D. 渔业 E. 林业

2.3 主要的非农业生产是什么？
A. 采矿业（指明：_____）B. 家庭手工业 C. 制造业（指明：_____）
D. 建筑 E. 商业. 贸易 F. 旅游业
G. 服务业 H. 交通 I. 其它（指明：_____）

2.4 16 岁以下的孩子的入学比例是多少？
A. 0 B. 大约 1/4 C. 大约 1/2 D. 大约 3/4 F. 大约 100%

2.5（1）15 岁以上的成年男子，外出做工的比例是多少？
A. 0 B. 大约 1/4 C. 大约 1/2 D. 大约 3/4 F. 大约 100%
（2）做什么工（指明：_____；_____；_____）
（3）收入估计（指明：_____元/年；_____元/年；_____元/年）

2.6（1）15 岁以上的成人女子，外出做工的比例是多少？？
A. 0 B. 大约 1/4 C. 大约 1/2 D. 大约 3/4 F. 大约 100%
（2）做什么工（指明：_____；_____；_____）
（3）收入估计（指明：_____元/年；_____元/年；_____元/年）

2.7 乡（镇）有在建或将建的发展项目（如：公路. 水库等）吗？(提供资料)?
A. 是（指明：_____） B. 否

2.8（1）接收移民以来，开展了哪些项目？

A. 新建道路、 改扩建旧道路　B. 水利灌溉设施　C. 开垦土地

D. 改造低产田地　E. 新建医院/诊所　F. 新建学校

G. 新建或改扩建供水设施　H. 植树/种草

I. 新建或改扩建供电设施　J. 其它（指明：_____）

（2）这些项目与移民安置或三峡工程有关吗？详细描述或提供资料）

2.9 (1）本乡（镇）有国有企业或农场吗？

A. 是　B. 否

（2）国有企业或农场的概况：（提供资料）

A. 名称：_____　B. 地址：_____

C. 主导产品：_____　D. 职工/雇员总数：_____

E. 吸纳的移民人数：_____　F. 在岗/职的移民人数：_____

G. 年产值：_____ 元　H. 年利润：_____元

2.10（1）有乡镇企业或村办企业吗？

A. 是　B. 否

（2）乡镇企业或村办企业的状况：（提供资料）

A. 名称：_____　B. 地址：_____

C. 主导产品：_____　D. 职工/雇员总数：_____

E. 吸纳的移民人数：_____　F. 在岗/职的移民人数：_____

G. 年产值：_____ 元　H. 年利润：_____元

2.11（1）接收安置移民以来，有新建的企业吗？

A. 是　B. 否

（2）每个企业状况:

A. 名称：_____　B. 地址：_____

C. 主导产品：_____　D. 职工/雇员总数：_____

E. 吸纳的移民人数：_____　F. 在岗/职的移民人数：_____

G. 年产值：_____ 元　H. 年利润：_____元

2.12（1）本乡镇的产业结构：第一产业：　第二产业：　第三产业

（提供资料）

(2)大农业内部结构：种植业：　畜牧业：　林业：　渔业：　家庭手工业：_____ (提供资料)

（3）种植业内部结构：粮作生产：　经济生产：_____（提供资料）

2.13（1）本乡（镇）的经济发展状况与接收移民前相比如何？

A. 变好了　B. 相似　C. 变差了　D. 不知道

（2）为什么？

_____

三、 农业

3.1 本乡（镇）集体土地有_____亩？ 5.2 移民人均分配或将划拔土地_____亩？

3.3 老居民人均土地_____亩？

3.4（1）本乡（镇）有可耕地_____亩？
（2）土地利用结构如何？
耕地：林地：草地：渔塘 = _____

3.5（1）接收移民以来，新开垦土地_____亩？
（2）将新开垦土地_____亩？

3.6 可开垦土地中_____亩能被开垦？

3.7（1）接收移民以来，改造低产田土 _____亩？
（2）将改造低产田土_____亩？

3.8（1）本乡（镇）区域内，典型的家庭土地面积是_____亩？
（2）家庭拥有的最大土地面积是
（3）家庭拥有的最小土地面积是：_____亩？

3.9 水浇地的比例多大？
A. 0 B. 大约 1/4 C. 大约 1/2 D. 大约 3/4 F. 大约 100%

3.10 过去 5 年里，发生过大的洪水. 干旱. 泥石流或其它自然灾害吗？
A. 是（指明：_____；发生在_____年_____月）
B. 否

3.11 自接收移民以来，下列各项变化如何？

	增加（+）	几乎没变（0）	减少(-)
作物种类			
饲养牲畜种类			
可耕地面积			
林地/草地面积			
化肥使用			
灌溉面积			
农户土地变得更支离破碎			
集约化农业生产			
其它（指明：____）			

3.12 接收安置移民产生了哪些相关的农业生产问题或负面影响？
A. 粮食产量下降 B. 干旱 C. 洪水 D. 太重的移民安置任务

E. 土地不足　　F. 砍伐树林　　G. 粮食价格减低
H. 可耕地面积增加　　I. 病虫害增加　　J. 劳动力外流严重
K. 水土流失加剧　　L. 其它（指明：_____）

3.13 总体而言，移民安置对本乡（镇）的农业发展影响如何？
A. 有利大于不利
B. 不利大于有利
C. 没有影响