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Urban Innovation and Upgrading in China Shanty Towns

Changing the Rules of Development

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ISBN 978-3-662-43904-3 ISBN 978-3-662-43905-0 (eBook)
DOI 10.1007/978-3-662-43905-0

Library of Congress Control Number: 2014946394

Springer Heidelberg New York Dordrecht London

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

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Chapter 1
Changing the Rules of Development: Institutional Innovation in Rebuilding China's Shantytowns

1.1 Introduction

The considerable effort devoted to the transformation of China's shantytowns is not surprising given the well-known contribution of cities to national economies. Clearly, the future of most developing countries will be determined by the productivity of urban areas and the extent to which urban growth and the accompanying challenges are managed. There are at least two ways by which this can be achieved.[1] The first is to nurture the growth of high-productivity activities—particularly manufacturing and services, which benefit from agglomeration economies. The sectoral composition of countries that have experienced long-term growth shows that the urban sector in the form of manufacturing and services led the growth process. In developing countries, 86 % of growth in value-added between 1980 and 1998 came from the urban sector—manufacturing and services.[2] The second entails developing institutions capable of attenuating obstructions to economic structural transformations and ensuring a better coordination of actors and systems, including the redistributive capacities of the benefits of development.

Institutions are defined as the "rules of the game," and they imply routine behavior and actions and consist of the "cognitive, normative, and regulative structures and activities that provide stability, coherence and meaning to social behavior" (North 1996). The concept of "institution" is often used interchangeably with that of "organization". While the normative and cognitive aspects of institutions are stressed, greater emphasis is laid on the structural dimension of organization. We follow the definition of institution provided by North (1996): "Institutions are the rules of the game of a society or more formally the humanly-devised

[1] Spence (2008), Oyelaran-Oyeyinka and GehlSampath (2010).

[2] National Research Council (2003) cited in Annez and Buckley (2008, p. 9).

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DOI 10.1007/978-3-662-43905-0_1

constraints that structure human interaction. They are composed of formal rules (statute law, common law, and regulations), informal constraints…and the enforcement characteristics of both". Institutions being far more pervasive and often more influential in their impact than the economic system tend to exert profound effects on the internal processes of producing entities. Herein lays the importance of institutions in determining the rate and direction of societal change.

We make clear distinction between organizations and institutions. The former refers to the actors in an innovation process. These include enterprises, government ministries, non-governmental organizations (NGOs), professional associations, standard setting bodies, universities and vocational training centers, information gathering and analysis services, and banking and other financing mechanisms. The latter are understood as the set of common habits, established practices, rules, or legal frameworks that prescribe behavioral roles and regulate the relations and interactions between individuals and groups.

Institutional factors such as the type of economic system, legal system, and extent of rule of law, property rights, and system of government tend to determine the nature of city growth. According to Henderson et al. (2006), a change in institutions should have at least a short-term effect on growth in city numbers; and removing constraints on the degree of local autonomy helps the development of non-primate and non-capital cities by increasing their ability to form, invest, grow from towns into metro areas and, more generally, to compete with primate and capital cities. Thus, a change in such institutions, as measured by the extent of participation of the citizens in the running of cities, often leads to new and unexpected positive improvements. Legislations and policies of government tend to influence the rate and direction of the evolution and growth of cities. Although to what extent these factors have contributed to city growth remains a debatable issue, examples abound in both developed and developing countries' cities that have witnessed an unprecedented growth as a result of deliberate government policies and actions to develop them. For instance the movement of the capital city of Brazil from Sao Paolo to Brasilia, a rather sleepy city on the Atlantic coast, launched the hitherto small city into global limelight with the attendant rise in the economic fortunes and political status. Also, the capital of Turkey was moved from Istanbul to Ankara. The movement of the capital city of Nigeria to Abuja in the 1990s transformed the socioeconomic life in the city that was once a glorified village. Many countries in the developing countries have relocated their capitals in recent times, paving way for accelerated growth of the new capital cities.

In the same vein, creation of states, provinces, and local governments lead to designation of many hitherto small settlements as urban enclaves. The presence of an administrative capital for instance attracts different groups of migrants, professionals, and businesses, improves infrastructure, and extends the spatial size of such cities. In Nigeria, between 1987 and 1999, more than 10 states were created and the same number of towns designated as capitals. Today, the level of growth these capital cities have witnessed in the past two decades cannot be compared to 100 years before their elevation to the status of state capitals. Similarly, the designation of Shenzhen, China, as a free trade zone by Chinese government has

changed the face of the small town. Today, Shenzhen is fast becoming the hub of financial and industrial production in China. At international levels, many treaties and bilateral agreements may open doors of opportunity for cities to grow. Cities that are well-positioned to tap into such opportunity usually witness tremendous growth. Industrialization is a major driver of city growth, in fact the first wave of urbanization in Europe was brought about by the industrial revolution that not only fostered economic prosperity, but also brought about the mechanization of means of movement in the city. Beyond this, industrialization has been known to produce surplus value, part of which are redistributed in the form of higher wages, and the other part plowed into provision of such social services as utilities, healthcare, education—all of which add to the comfort of city dwellers. The resultant improvement in the quality of life is rewarded by the large-scale movement of people from lower-order settlements to the cities, thereby generating a cycle of population growth (Fig. 1.1).

As the UN-Habitat (2010) report points out, the factors that drive the growth of cities are many and vary. Many times it is the synergy between and among these drivers that produces the tangible changes that we see and measure. Factors such as security, safety, and other institutional factors shape the pattern of city growth. For instance, a series of planning reforms in Brazil which was experimented in the city of Curitiba made the hitherto small city an exemplar of city that works. The fact that this city works has made it not only a center of attraction to migrants and tourists, but it has become the beautiful bride of local and foreign investors. Again, national- and city-level changes in employment structure can fast-track the process of city growth. Currently, cities that are most competitive in the world are those that offer jobs in the service sectors. Dubai in United Arab Emirates prides herself of deriving more than 80 % of her GDP from service-oriented economic activities.

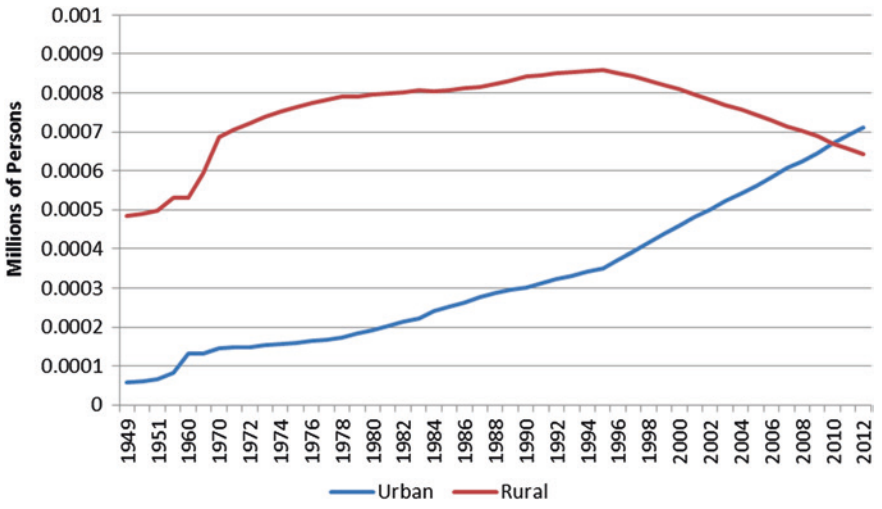

Fig. 1.1 China urbanization. Modified from China Statistical Yearbook (2013)

1.2 Understanding of Institutions

Latecomer countries exhibit institutional inadequacies that manifest themselves as missing legal and institutional frameworks (lack of rules of the game) or poor enforcement of legal frameworks where they do exist. The range of laws and policies that regulate the urban system is varied and extensive: from those that regulate land use, property rights, promote human capital formation to industrial/sectoral policies as well as science, technology, and innovation policies to general infrastructure policies. All or most of these policies that are needed for sustainable urbanization are either missing or lacking in enforcement in a latecomer context.

Incentives for institutional coordination among the organizations setup to fulfill these mandates form an equally critical part of an enabling urban environment. Domestic agents need appropriate incentives to interact optimally in order to translate policies into entrepreneurial ventures, constantly transgressing public and private sector boundaries. Incentives and policies that enhance coordination include policies that focus both on building public capacity and widening the circle of actors to include the enterprise sector to collaborate with public sector institutions. It also encompasses a range of policy efforts specifically aimed at enhancing collaborative efforts, through subsidies, joint public private partnerships, and so on.

The renovation of Liaoning cities demonstrates poignantly the significance of institutional change in the process of socioeconomic development. For instance, the new incentive structures and changed institutional contexts have attracted large numbers of China's real estate developers, who had predominantly been commercial housing players, planning a serious entry to the policy housing segment. This is partially in response to the stronger commitment displayed by the government to increase the number of policy housing units, which promises greater volumes. Further adding to the mix of players, construction companies and even mining firms have announced plans to establish a foothold in the affordable housing segment. Affordable housing projects differ from their commercial counterparts on many fronts, not the least of which is an almost guaranteed demand, effectively minimizing the value-added by developers over construction companies in sales and marketing. As such, the landscape of the affordable housing market in China will likely evolve quite differently from that of commercial housing, in particular, to include a more diverse mix of key players.

For developers who have been mainly commercial housing-focused, profit margins of affordable housing projects are much lower; however, they offer several benefits that are quite opportune in the current state of the real estate market.[3]

[3] ("China's Housing Imbalance—Is Affordable Housing the Cure?" J.P. Morgan's Hands-on China Series, September 7, 2010; http://www.jpmorgan.com/cm/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1158605703411&blobheader=application%2Fpdf).

- Goodwill benefits
  Affordable housing projects, given their much lower profitability, can be considered to some extent as a social responsibility of developers. As the government faces a growing impetus to fulfill its promise to deliver affordable and decent housing solutions to the masses, developers are increasingly incentivized to take on policy housing projects in order to build goodwill as well as strengthen their relationships with policymakers. Such relationships can bring benefits that are hard to quantify from the outset but are nevertheless substantial in the long run, for example, receiving preferential treatment in land sales.
- Greater access to leverage
  Coupled with easier and greater access to leverage and quicker turnover, the ROI of policy housing projects is much more attractive than it may appear on the surface.
- Positioning for structural change in the housing market
  Thirdly, since the round of measures to cool off the housing market, developers, home buyers, and speculators have all been observing the repercussions in the market, and, in particular, the resolve of the government in carrying out its aim of slowing the property market. So far, the government has been adamant in enforcing the policies and unabashed in reiterating its goal to stamp out speculation. Demand in the policy housing market has become stronger than ever as commodity housing prices have reached levels far beyond being affordable for most. What used to be an unattractive proposition for developers during a booming commodity housing market has now become much more viable with sales that are, in effect, guaranteed.
- Lower capital requirements
  The capital requirement of policy housing projects is substantially lower than that for commodity housing. Land, the largest cost factor in a housing project, is provided by the government, and depending on the type of policy housing, the government will fund the project to various degrees. (The government is responsible for all development costs for low-rent housing, public rent housing, and resettlement housing and has to forgo part of the land premium for price-capped and economic housing.)
- Tax incentives
  Lastly, besides the various incentives offered by the government, policy housing can offer substantial tax benefits. For example, the amount of land appreciation tax collected is based on four profit margin brackets (30–60 %); the low profitability of policy housing projects may be partially offset by the savings they bring in reduced taxes since they dilute the overall profit margin of a development project. Some cities have eliminated the land appreciation tax pre-collection of 1 % for policy housing projects to further encourage developers to enter into the segment.
- Construction Companies
  Traditional property developers are not the only ones attracted to the affordable housing space; construction companies are also active in the segment. Build–Transfer agreements mentioned earlier generate higher margins for construction

companies. In addition, construction companies are not responsible for the marketing and sales of finished units, as the government underwrites the entire project. For these reasons, the affordable housing space offers the incentive (through higher margins) as well as the advantage (the value-added by developers are minimized by virtue of simpler and more standardized designs, as well as the lack of a need for marketing and sales) for construction companies to become major participants in the near future.

1.3 The Context and Rationale for the Shantytown Transformation

An important rationale for the transformation initiative of China's shantytowns relates to the extent to which once an industrial enclave had fallen into deep and grinding poverty and the necessity to reduce the levels of poverty and raise the living standards of citizens who once formed the backbone of industrial progress. A city no matter the level of economic growth cannot maintain social harmony when large segments of its population live in abject poverty as was the case in the China shantytowns. One of the key objectives was to reduce the incidence of existing slums and provide alternatives to the emergence of new slums. There are several ways by which these can be achieved, including the provision of affordable low-income housing, facilitating access to land and finance, and enacting realistic and enforceable planning regulations. Third, sustainable urbanization requires the state to provide the necessary social services such as education, health, and recreation in order to enable their citizens to attain their full potential by developing their intellectual capacity and ability to lead full, productive, healthy, and fulfilling lives. Fourth, the claim to harmony involves narrowing the inequality gap in order to promote greater social inclusiveness. This in part can be done by enhancing gender equality, protecting the rights of the poor and vulnerable groups, as well as ensuring civic participation by all in the social, political and cultural spheres. The failure of policies and city managers to fully integrate vulnerable groups into their decision-making process in the past created and reinforced the widespread poverty and inequality in the former industrial zones.

The shantytowns were zones located within the urban sphere with a high density of low-rise buildings, which, due to age were in poor condition—the average per capita space was small; infrastructure was inadequate; communication was poor; security and fire risk were high; and sanitation conditions were intolerably bad. Many shantytowns are so-called villages within the city, built on collectively owned land. At present, the criteria for defining shanty houses are:

a. Makeshift houses and cottages built with wood, adobe, and 240-mm-thick brick wall as the supporting structure and with linoleum or asbestos as roofing materials;
b. Small low-rise buildings located in the waterlogged lowland with inadequate infrastructure facilities;

c. Buildings that are defined as seriously damaged houses or dangerous buildings according to the Housing Grading Standards and Standards for Appraisal of Dangerous Buildings issued by the Ministry of Construction. The localities that have shanty houses of more than 50,000 m^2 are called shantytowns.

In general, shantytowns are the homes of low-income urban residents, who live in low-quality buildings with inadequate public services and infrastructural facilities. Specifically, four major factors were defined and had to be addressed in shantytowns: poor housing condition; lack of the basic public services, including utility supply systems of water, electricity, heating, and sewage; bad roads and transportation system; and vulnerable social status of people living in shantytowns.

1.3.1 The Chinese Metropolitanization Approach

The Chinese approach is to combine modernization with urbanization. The concept is to change shantytowns into new good cities that can generate high-end worth-linked work and incorporate the former workforce into this emerging global industrial form. This will mean enormous industrial infrastructure and housing being built to accommodate new and old workforces. At the current rates of growth, China will have to provide an enormous requirement for housing stock in a short time (Fig. 1.2).

So just keeping up with the housing demand is an enormous task. It is compounded by the fact the economy has to grow with exports to supply the money for building these dwellings. So China has to run fast to provide goods for a changing world demand. Simply put, the old cheap goods will not be competitive in a more value conscious sustainable industrial world. Thus, China has to move its production and productivity up the value chain as it attracts new urban population.

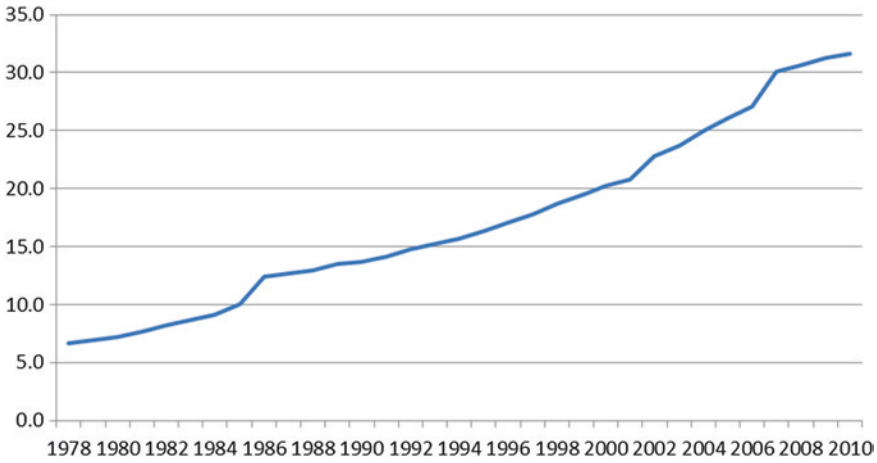

Fig. 1.2 Per capita building space in city areas in China (m^2). Modified from China Statistical Yearbook (2011) and China Compendium of Statistics (1949–2008)

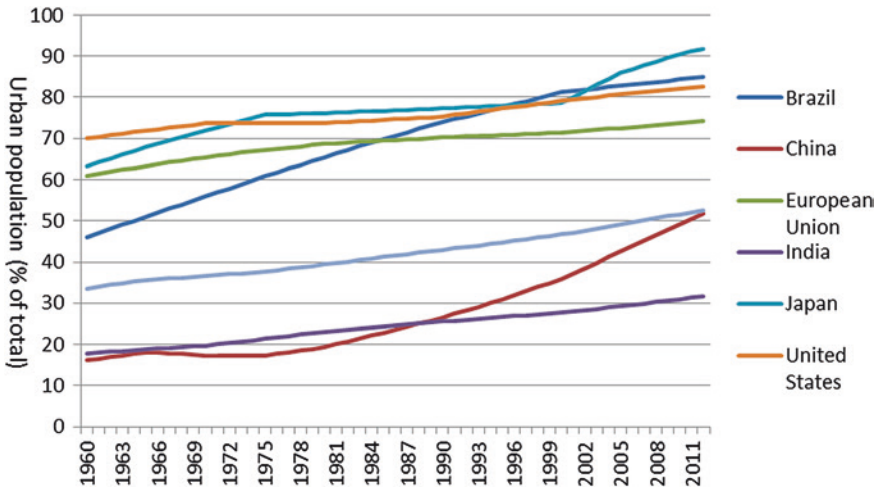

Fig. 1.3 Global urbanization. Modified from World Bank Open Data, http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS

1.3.2 Vision and Direction of Chinese Urban Agenda

It is clear from China's most recent five-year plan that the vision for China is to have a nation that by midcentury will be far more urbanized than India and other Asian nations. In the new five-year plan, the focus is on infrastructure to build the new urban China with seven strategic new industrial targets in smarter more knowledge-intensive industries like solar energy (Fig. 1.3).

So the vision for China as promulgated by the Central Committee is of a modern nation with high internal demands and strong globally competitive industries. This is a tall order. But the foundation for it is already in place. What is left to do is to house and educate the population to meet this lofty goal.

Box 1.1: Similarity between shantytowns and slums

Shantytowns and slums are both impoverished neighborhoods in the city, and they share the following similarities.

(a) Buildings in both slums and shantytowns are built without unified planning. Most buildings, being of poor quality, irregular structure, high housing density, and using inferior building materials, do not conform to the basic standards for construction quality and safety. As a result, collapse of the structures is a common occurrence.

(b) Residents in both slums and shantytowns mostly belong to the impoverished population in the cities, which, due to lack of education and vocational training, have no fixed jobs and stable income source. The

enduring poverty leaves residents in shantytowns and slums in despair and results in high crime rates and horrendous security conditions.

(c) Both slums and shantytowns have inferior infrastructure facilities. There is a lack of clean water supply, garbage removal and sewage system, and proper electricity supply; communication is inconvenient; environment is bad; and there is a lack of the basic medical and health services.

1.4 Unique Features of China's Shantytowns

There are, however, several differences between slums and shantytowns

Origins: In terms of origin, slums are often formed in certain parts of a city as a result of the influx of a large population of migrants into the city. Shanty areas in China originated from the period of the industrialization campaign by the People's Republic. Shantytowns used to be housing for employees in the former state-owned enterprises or collectively owned enterprises. After those enterprises declined as a result of resource depletion and urbanization, the employees' housing was divested from the previous enterprise security system and became an isolated part in the city, which eventually evolved into shantytowns.

Ownership: In terms of the ownership of land, shantytowns are all located on the state-owned or collectively owned land, of which the use rights belong to the individual residents, while the ownership and use rights of slum land are often unclear and difficult to distinguish. In terms of dwellers, residents of shantytowns are mostly workers from the former state-owned or collective enterprises, many of whom belong to certain community organizations. Slum dwellers often come from different regions, with high mobility and no fixed community-based organizations.

Residents' mentality: In terms of the residents' mentality, a considerable number of residents living in China's shantytowns are former workers in state-owned enterprises, who have made great contributions to the development of the country. As a result, there exists widespread discontent among the residents at being abandoned by the society. Many of them challenge the fairness of the system. This kind of challenge is less popular among residents in slums.

The shantytown resettlement is one important component of China's housing policies and aims at relocating families living under precarious conditions in old houses earlier provided by work units under the welfare allocation period, before the start of housing reforms. This program is the main subject of this paper and will be detailed in the following chapters.

Currently, housing needs in China are addressed through complementary programs, based on specific criteria related to income and existing housing conditions. The programs focus on the urban residents under the hukou system of registration, excluding the "informal" migration of rural habitants to the cities from officially being part of the housing demand. Since China is still 50 % rural, in a world that is becoming more and more urbanized, there is a risk of a

mismatch in housing programs and the creation of informal settlements around urban areas, due to the limited reach of housing policies for officially registered urban residents.

The existing literature on the housing sector in China points out the emergence of the so-called urban villages, an informal system of rental housing for migrants in the surroundings of the cities and the limitations of the hukou system on recognizing the real needs for housing (Zenou 2011).

The housing policy framework in China today, a result of a thirty-year-long reform, has four main axes: (i) price-capped housing: maximum unit size of 90 m^2, prices capped by local governments' development takes place on public land; (ii) economic housing: maximum 60 m^2, prices 20–30 % below market, on developments carried out by local governments, work units or commercial developers with land and fiscal incentives; (iii) low-rent housing: maximum 50 m^2, targets urban poor, funded and managed by the government; (iv) shantytown resettlement: urban renovation of degraded residential areas (JP Morgan 2010: 2–3).

The role of local government on managing the housing programs is crucial in terms of identifying land, setting up price caps, giving tax exemptions and defining criteria for housing allocation. While the central government is responsible for setting up policy guidelines and regulatory framework for the market and subsidized housing systems.

1.5 Institutional Effectiveness: The Key to Housing Resettlement and Low-income Poverty Alleviation

As the international experience suggests, it is clear that institutions in latecomer contexts exhibit ineffectiveness in establishing efficient interlinkages and incentives when agents can engage in learning and knowledge creation activities. Their inefficiency gives rise to the poor coordination of knowledge and economic production functions, leading to an imbalance in the demand and supply for skills of the right kinds, quantity, and quality mix at sectoral levels and over time. A major reason for this lies with government involvement that tends to create its own idiosyncratic lock-in conditions for two main reasons. First, instead of governments playing a supportive role to rectify market imperfections, governments in latecomer contexts have over time lent strength to the creation of institutions that override market forces, thereby creating alternative institutions to which actors have to respond, albeit to promote self-interest-based, inefficient outcomes. This capture of the entire institution-building process is a commonplace occurrence. As a result, while there is a general agreement that developing countries need to create organizations and institutions where they do not exist and reform those that are functioning poorly, institutions for policymaking themselves lack both broad and specific competencies in their coordinating functions. This is a serious drawback for developing countries and leads to a situation in which policy coordination is largely politically driven in the absence of strong market coordination. Following

from these findings, China has demonstrated in its unique fashion, how quickly and effectively institutions can be galvanized to build the foundation for a long-term sustainable welfare system.

From an international comparative perspective, China's resettlement legal and institutional framework is relatively advanced. While Colombia has innovative mechanisms of compensation, it is still limited to municipal-level decrees. In India, there is a national policy and some state regulations, but no clarity on institutional responsibilities. China's national regulations give clear directions on the attributions for implementation and operational purposes, policy guidelines, and compensation mechanisms for loss of houses and income.

Other institutional gaps include lack of funding of relevant organizations; maintaining these organizations to achieve effective service delivery depends to a considerable extent on available public resources and the political will. Evidently, failure to adhere to financial obligations for meeting organizational commitments often results in project failures and time overruns, as well as lack of private sector trust in and collaborations with, public sector institutions.

1.6 Institutional Change in Financing: Diversified Housing Financing

Funding is a major constraint for projects with the scale of shanty neighborhood renovation. Linked to broader changes in urban management approaches, the enabling approach has sought to address both the supply *and* demand side of housing and has paid particular attention to "getting the institutions right" which entails economic, financial, legal, and institutional reform.[4] Governments in particular have been recast from being providers of housing to creators of enabling environments, urged to undertake regulatory reform and work in collaboration with the private sectors. This framework covers a range of issues including property rights, the provision of infrastructure, regulation of land and housing development, organization of the building industry as well as the development of appropriate policy and institutional frameworks. Housing finance is identified as an integral component of the enabling approach. Starting from a preoccupation with the need to develop mortgage finance as well as the rationalization of subsidies, there has been considerable innovation in housing finance. As such, there is a diverse range of financial products, organizations, and delivery mechanisms. A range of formal and informal financial instruments are available and provided through partnerships between governments, the private sector, non-governmental organizations, and micro-finance organizations (MFIs).[5]

[4] Choguill (2007), Jones and Datta (2000), UNHABITAT (2005), World Bank (1993).

[5] Ferguson and Navarrete (2003), Lea (2005).

Liaoning solved the funding problem by following an approach coded as "nine pieces" to raise capital from the whole society. The approach ensured a stable supply of funding for the renovation project during 2005 and 2011. At the beginning of the renovation, the project required a huge amount of capital within a short period of time. Meanwhile, cities were in heavy debt and did not have an adequate revenue base. After a few years of market operation, the same cities have seen a significant increase in revenue from selling the land cleared out through shantytown renovation. In 2011, the fiscal revenue income of Liaoning Province was 264.1 billion yuan, about five times that of 2004. The major part of its debts had been paid off on schedule or under feasible payment arrangements. The success of the financing model, which mobilizes capital from enterprises and the public with the fiscal funding, has proved that such a model is sustainable given the right historical and institutional context. The essential elements are outlined below:

1.6.1 Multiple Financing Sources and Strict Administration of Fund Usage

The Liaoning Province followed the practice that expanded funding sources while strictly controlling the use of funds in the shantytown rebuilding project.

a. Adoption of a "Government + Market + Society" model to raise rebuilding capital. Rebuilding financing comprises of nine components: government subsidies, policy exemptions, and contributions by enterprises, individual payments, revenue from market operations, bank loans, social donations, contributions by working units and saved construction costs.
b. Rebuilding funds are deposited in a special account under "enclosed administration," meaning the money will be used solely for the project purpose. Capital is allocated directly from the municipal finance administration to the builders, minimizing the chance of embezzlement. Income and expenditure are managed separately. Audit and finance departments conducted regular inspections to ensure judicious use and management of the funds. Any allocation or use of funds would go through three examinations and be publicized before being actually executed.
c. Government is responsible for raising funds for rebuilding projects and paying the debt. This is essentially an indirect loan to low-income residents in the shantytowns. Policy bank loans are guaranteed by provincial fiscal authority and paid back by the municipality. Commercial loans are also paid by the municipality. The payment of principal and interest is mainly from premiums of granted land, fiscal borrowing from the provincial and central government, accounts payable, municipal fiscal income, collected fund from individuals' payment for the increased housing areas and the sale revenue from selling the remaining apartments.

From the above, the shantytown project demonstrates a strong coordinative and collaborative partnership with the private sector.

Although the financial engineering of Liaoning PPPs is highly innovative, it has a huge degree of complexity and uncertainty, leveraging the risk for the private sector to enter in. This might generate extra burden for government's accounts, considering the development loans taken by the municipalities to complement funding. A failure of the PPP model might also reverse the expectancies of tax revenue and has a strong impact on medium- and long-term municipal and provincial budgets. Some municipalities such as Fushun and Tieling are already showing signs of difficulties on repaying debt, which might be related to the depletion of land transfer revenue and/or on the slowdown of economic growth in the country as a whole.

The problem here is that a high percentage of the population is eligible for affordable housing, generating a big demand for this kind of houses; looking at the gap between incomes and house prices at commercial level, there is a clear mismatch between supply and demand. For the government of Liaoning, it is important to monitor housing markets in the country and understand the potential of PPPs considering that the Chinese housing markets are still in formation, with a housing finance system now being consolidated and the limitations in terms of payment capacity of the average Chinese family.

Even with the identified risks, it is important to highlight the positive outcomes of the program. According to the research report of the Chinese Academy for Social Sciences, as a result of several government policies, that include not only the improvement of shantytowns, but also an integrated policy approach to promote development—pushing the market economy, attracting investments and improving efficiency of state-owned enterprises—the economic annual growth rate increased from 10 to 13.5 % in the period 2005–2011 with leverage of per capita income (2.4 times) and reduction of unemployment rate from 6.5 to 3.7 %.

The best lesson for the world from the Liaoning resettlement program is the mixed approach of social and economic development using an urban renovation process as a core intervention of economic and social measures that leads to a virtual cycle and generates investments, growth, and reduction of inequalities.

1.6.2 Collaboration with Private Actors: Promoting Real Property Sector

The renovation of shantytowns in Liaoning is part of the Province's plan to promote the development of real property and residential housing sector in 2011, and the investment in real property and residential housing was 44.88 million Yuan and 34.13 million Yuan, respectively, or 6.4 and 7.1 times that of 2004. Most of the

units in the renovated buildings are of medium or small size, with a living space less than 70 square meters. This model satisfies the demand of low-income residents, and since 2004, the renovation project has met the housing needs of about 20 % urban residents in the province. In addition, local governments worked out detailed rules regarding the compensation of relocated households and implementation guidelines.[6]

Different approaches were adopted in the rebuilding project depending on the location and commercial value of different shantytowns, in the collaborative arrangements. For those located in areas with high commercial value, local governments offered certain favorable terms as well as the support in improving the infrastructure and environment of the surrounding areas to encourage commercial developers to undertake the rebuilding project. Developer firms were responsible for raising the construction capital. For projects that could not be funded solely by developer firms, local governments provided preferential incentives in addition to certain amount of subsidies. In Fushun, Benxi, Fuxin and Chaoyang, most shantytowns are located on the outskirts of the city or next to mines, with little value for commercial development. For those cases, local governments would finance the rebuilding and entrust the construction project to commercial contractors.

Liaoning also tied the renovation of shantytowns to the improvement of urban functions and improvement of residential environment. The renovation project has significantly changed the appearance of many cities. The shabby sheds have been replaced by organized high-rise buildings. In Dongzhou District of Fushun City, the city built 113 buildings in the Guchengzi neighborhood. In the Xinqiu District of Fuxin City, more than 230 buildings were built in 2006. The renovation has led to significant improvement in infrastructural facilities and better public service delivery. In 2005, a large-scale project was launched in several cities in the province to dismantle old houses in the shantytowns, construct new buildings, and settle residents in new buildings. In 2006, the Provincial Government issued regulations specifying requirement for roads, green land, environment and sanitation, medical care, education, recreation, community services, commercial services, financial services, postal services, and administrative management. Within the renovated shantytowns, 2.91 million square meters of roads have been built with 111-km of public transportation routes. 438-km water pipelines, 774-km drainage pipelines, and 301-km gas pipelines have been laid. 3,744 new stores, 33 schools, 96 medical institutions, 86 healthcare stations, and 133 medical treatment offices have been built and 295 sets of physical exercise equipment installed.

[6] Unit layout and space was designed after careful study to best serve the needs of dwellers. For example, in Fuxin City, house design takes into consideration the convenience and comfort of dwellers, increasing the space of balcony and dining area and leaving enough space for washing machine and shower spray in the restroom.

1.7 Government's Leading Role, Coordination, and Performance Efficiency

Government's role in allocating resources is critical to the success of the rebuilding of shanty neighborhoods. Without the leading role played by the government, it would have been impossible to secure the tens of billion yuan of capital to renovate shantytowns in several cities at the same time and solve housing problems for two million people within such a short period of time. Listing the renovation of shanty neighborhoods as the top project in building a harmonious society and winning the trust of the people, every city government set up a task force mission to lead the renovation project. The team is usually composed of a team leader, who is a key municipal leader, and several team members, who are leading officials from agencies concerned. The team meets regularly to discuss the major issues and make decisions on the spot, thus ensuring a highly efficient performance of the government duty. In addition, the progress in the renovation project was regarded as a major indicator to evaluate the performance of government departments and administrations at different levels. As a result, government officials are incentivized to make all-out efforts in promoting the project. This is the main reason for the incredible speed and efficiency in implementing the project in Fushun and Tieling.

1.7.1 Internal Collaboration Among Government Departments

The provincial government set up a coordination team comprising members from 17 relevant departments, each of which had specific responsibilities. The team was in charge of directing, supervising, and coordinating the rebuilding of shantytowns across the province. A series of rules were established with regard to the inspection, executing, progress reporting, routine meetings, and funding management. Every month the coordination team conducted inspections in 11 cities undertaking shantytown reconstruction. The team summarized and presented every half a month a report about the progress of the renovation project in the cities. The team also held a routine meeting every half a month to discuss and take decisions on issues in the implementation of the project. The auditing, inspection, and financial departments supervised the utilization of renovation funds.

The municipal government was responsible for the actual execution of the project. A task-leading team was established in each city, with a designated leader being in charge and coordinating all executive agencies. Such a "one-stop shop" decision-making body greatly improved the efficiency. A similar leading body was also established in the administration at the district level and departments concerned, thus forming a multiple-tier organization network that ensured the leadership and coordination of the shantytown renovation project. Performance in the shantytown renovation project was one of the outcome indicators by which the work of the municipal government was measured.

1.7.2 Triggers for Policy

While a great deal of the discussion of the transformation of shantytowns and inner city renewal is attributed to an agency such as the Central Committee of the Party, there is little doubt this leadership on the issue was important. In addition, worker organizations in these former industrial communities were quick to point out the increasing poverty of their members and the impact of this on Party leadership and solidarity; the immediate and most salient reasons for China adopting the approaches described above were clear.[7]

First, China's older coastal cities contain a large share of the industrial-based population and infrastructure. So growing the city base was easier than trying to relocate or start new zones. But large cities reach a stage of counterproductivity. That is, they grow so large that maintaining them becomes more costly than what they can produce. In the *Limits of Settlement Growth: A Theoretical Outline* (1995), Professor Roland Fletcher points out that cities can and do exceed their productive capacity.[8] When they do, the cascading effects of consumption and decay set in. So China's approach to city growth is to add substantial infrastructure and improve housing in core cities. At the same time, these cities have new industrial areas within major cities using a combination of public and private initiatives. So while still growing, these large cities are getting better as they get bigger.

Second, China lacks land for building. Even though it is a vast nation, China has little well-positioned land for settlements. The topography of China makes it difficult to build in the hills and valleys and along water courses. Moreover, agricultural land management is central to the Chinese economy.

China lacks arable land. According to reliable statistics, there are only about 122 million hectares of arable land to feed nearly 2 billion people. This arable land is under significant and constant threat with 7 million hectares being converted to urban and related uses from 1996 to 2005. So China is losing farm land with urbanization. But there are other pressures as well. Environmental degradation by overfarming and over-use of chemicals is also destroying arable land. Finally, the decline in farm workers is starting to take a toll as well. The West has maintained productivity of farm output by mechanization. China's lands are not as easily farmed with big equipment because it is not irrigated or flat. As a result, China has lost land as its population has increased. For the above reason, China has a low ratio of arable land to population estimated at 0.10 ha of cropland per capita, while the USA maintains 0.47 hectare per capita and the EU maintains 0.69 ha per capita.[9]

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[7] Ni Ping Fi Rebuilding, (working paper 2012) Shanty Areas—the Developing Mode of Worldwide Low Income Settlement in Urbanization: The Experience of Liaoning, China, Chinese Academy of Social Sciences.

[8] (Fletcher 1995).

[9] DuBose, Casey *China's Agricultural Land Use Policy: The growing tension between food security and economic growth.* http://aviation.duchinese.com.

Fig. 1.4 GDP Liaoning versus China. Modified from China Compendium of Statistics (1949–2008)

Third, reducing disparities between people and places is essential for China to progress. China's economy has grown faster than any economy in the world in the past 25 years from 1980 to 2004 when the country opened for global trade. This is a remarkable achievement. In that period, China lifted 500 million people out of a subsistence poverty level of $1US/day. No other nation has yet matched this record, but various forms of inequality are rising (Fig. 1.4).

The income gap between individuals is mirrored in a similar gap between places. The difference between the richest and poorest provinces grew from 7.3 to 13. In China, the richest province has more than 8 times the per capita public spending than the poorest provinces. So any effort to deal with inequality combined with urbanization has to deal with the rural urban gaps as well as the human capital and locational disparities. This is the primary reason for an emphasis on urbanizing the places where poverty was most severe. The alternative might have been an uncontrolled and socially difficult process of slum dwellings increasing exponentially in the growing urban areas similar to the problems in Latin America and the rest of Asia and India.

Thus, it is important for China to attack poverty where it is and settlement patterns will follow. Liaoning Province is a case in point. It was a former resource extractive center which is both urbanizing and reindustrializing.[10]

Figure 1.5 shows a clear distinction between the reality from the census and the houku registration in the urban areas, whereby although income per capita is much higher in the rural areas; migration to cities is very dynamic and generates high degree of inequalities. There is also the risk of new "shantytowns" creation because China is at the same risk level of increasing the number of precarious or informal settlements as less urbanized countries such as India, South Africa, and the Philippines, while the Latin American countries stay at a more comfortable situation with higher levels of urbanization, as Brazil with 84 % of the population living in cities.

[10] Ni Ping Fi Rebuilding, (working paper 2012) op cit.

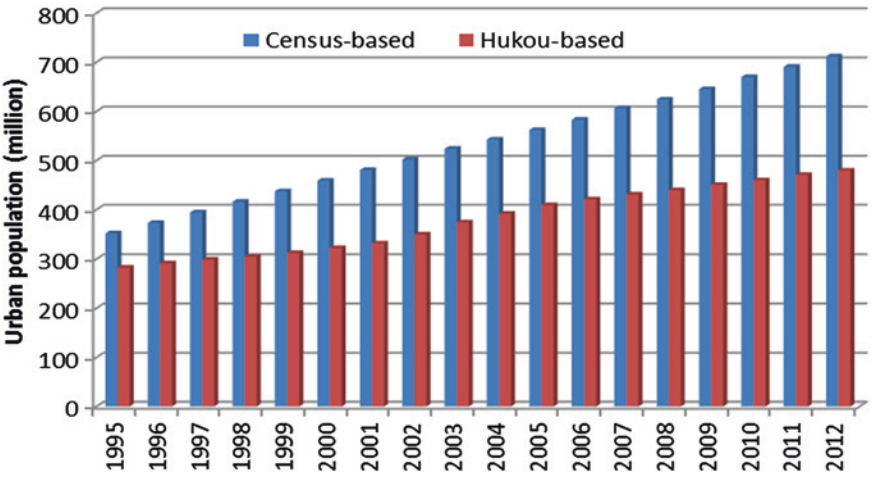

Fig. 1.5 Different realities: Hukou × census. Modified from China Statistical Yearbook (2013) and China Population Statistics Yearbook (1996–2013)

The challenge for Liaoning in this context is to ensure the sustainability of the new low-income housing developments from the pressure of new comers in the city and the spread out of new shantytowns or informal settlements. While it is crucial to provide communities with better living conditions, it is now very important to promote social and economical development in parallel to a well-targeted housing policy; the only way to avoid future degradation of the urban spaces.

So national policy aimed at Liaoning which urbanized it former mining shantytowns and strengthened the capacity of the existing cities to handle larger populations in an orderly fashion made it an ideal candidate for national policy experimentation. In each category, Liaoning has an important and pivotal example of national policy being carried out.

1.7.3 Outcomes of Institutional Innovation Planning and Coordination

The renovation of the shantytowns was evidently a major program of urban construction in Liaoning Province. Governments at different levels were required to align the renovation with a city's urban and rural planning and improvement of people's welfare and formulate a coordinated plan for infrastructure, public service facilities, and environment.

Liaoning is an illustration of the primary thrust of growing industrial capacity where people are, rather that moving them or cope with them moving on their own to cities. So Chinese cities have grown with few of the slum and ghettoes

phenomena of the West and less squatter and illegal settlement similar to India and Latin America. The ingredients in the process are clear.

(1) Redevelop and modernize cities to accommodate new populations ahead of or at least consistent with population growth.
(2) Reduce the inevitable income gaps between people and places by making under-developed places more competitive. This means concentrating on select settlements in each region with an array of city building and rebuilding policies.
(3) Creating markets for land that will enhance local and national investments in formally extractive sites (mining etc.) or old industrial sites by making the initial investments to clean up and stabilize these places for housing and other developments. This keeps people in place and allows for more orderly and less uneven development.
(4) Aiming directly at income outcomes by increasing the returns to skills and education for former unskilled and under-skilled workers in new settlements.

1.8 Summing Up

(1) *Transformation of Mining-Based Economic Sectors*

The cities with large shantytowns evolved and were built upon the conventional heavy industry or mining; due to neglect over time, they became decrepit and had faced the urgent need to transform the economic structure and explore new growth industries. The transformational planning of the shanty area was leveraged by the Liaoning government not only as a means to solve the housing problems for residents, but also to promote the cities' industrialization and urbanization. For example Fuxin City, which was developed on the back of the coal mining industry in early years, has aligned the shantytown renovation with the city's rezoning plan. The development of the southern part of the city in which mining was concentrated was accorded a high priority in the planning and execution. Equally, Dandong City incorporates shantytown renovation into the overall urban planning. The project advanced the development of the downtown and expanded city space, and, in the process, upgraded the wider functions of the city. Fushun City exemplifies the integration of large-scale renovation project into the industrial planning, by utilizing the freed and industrial assets that remained in the shantytowns to build three industrial parks.

(2) *Improving Social Services*

The province made the renovation of the shantytowns an important part of the overall strategy of social development. Through the various mechanisms including planning, institutional changes, and policy dynamics, residents in the renovated shantytowns now enjoy equally comprehensive social services as those in any other

neighborhood. Before the renovation project, a large number of residents in the shantytowns, who were laid off by the former enterprises, had no access to basic social security in health care and education. In the renovated neighborhoods, there is currently a three-tier social security network, which provides social security at district, street, and community levels. Residents are covered by pension, unemployment insurance, health insurance, and minimum livelihood support for urban residents. The citizens are able to access community hospitals which can treat minor illnesses and as well, go to large hospitals for the treatment of major illnesses.

Fuxin City set the target of building the renovated shanty neighborhoods into modern communities with fully equipped facilities and services, pleasant environment, orderly administration, and civilized and healthy living pattern. It created the concept of "ten-minute community service parameters," which means that residents can conveniently receive services in civil affairs, health care, recreational activities, and policy security within the community.

(3) *Institutions Innovation of Property Rights: A Flexible Arrangement of Housing Title*

A creative and flexible property rights system was adopted to ensure that all households in the shantytown own their houses after resettlement. The system included three types of ownership—complete ownership, deposited ownership, and limited ownership plus cheap rental. For households that could pay off the entire housing expenses, they obtained the housing title once they moved in. Their house can be traded on the market anytime they like. For those who could only pay part of the expenses, their housing title would be "deposited" in the real property department. These households could move into the new apartment with a receipt for a loan; once they pay off all debt, they would be issued with the title certificate. For very poor households, they would be granted with the ownership title to the area that was equivalent to their original residence; the increased area is owned by the government and leased at the rate that applies to cheap rental housing.

(4) *Guaranteed Land Supply to Rebuild Shantytowns*

Land is critical to the shantytown rebuilding project. In China, land is owned by the state or by collectives. After carrying out the reform in 1978 to transform its planned economy system into a socialist market economy system, China has adopted a land use rights tenure system similar to the land leasehold tenure system in Western countries. Land users can acquire land use rights, which can be assigned, sold and resold, leased or mortgaged. There are two types of land use rights in China: the "granted land use right" and the "allocated land use right". For granted land use rights, land users enter into land grant contracts with the government authority in charge of land and pay in exchange for land use rights on state land for a fixed period of time. Chinese law requires that all land use rights for commercial use must be granted by bidding, auction, or quotation on the open market. Unlike granted land use rights, the government does not set a fixed term for allocated land use rights. However, the government reserves the right to recover land use rights at any time. Historically, most land use rights were

allocated to land users at no cost in China. Currently, land use rights are only allocated for projects involving public interest such as military facilities or government buildings. The land needed for shantytown rebuilding projects is allocated by the government as a priority item in the city's annual plan of construction land supply. The premiums from the granted land use rights would be used to finance shantytown renovation projects. In addition, in the resettlement neighborhood, they would also build a few commodity buildings for sale in the market, adding another funding source for the rebuilding project.

No developing country has invested more than China and broadly East Asia in advanced knowledge infrastructure for economic development. One of the keys to this rapid and unprecedented pace of investment and development has been in the ways institutions have changed to leverage the combination of public and private sector capital. While the state in China has moved at almost breakneck speed to provide modern infrastructure for industrial expansion, innovation, and entrepreneurship, which in turn have enhanced the economic potential and competitiveness of so many cities in Asia, it realized the neglect of its industrial heartlands and moved to reverse this.

Revitalization and urbanization are going on simultaneously in China. China has a long history of big important cities. These cities have been the gateways for commerce for many centuries. As China opened up to the West, cities have become the fulcrum for economic development. But even as China was developing its manufacturing export base using many of its cities, it became clear that further urbanization was necessary. Chinese policymakers astutely looked at the record of haphazard city building in the United States as that nation went through the entire industrial cycle. The Chinese saw the need to urbanize but also the need to avoid the American Syndrome of industrial city decay. So with the American experiences combined with the failures of rapid urbanization encountered by near neighbors such as India and other Southeast Asian nations along with the shantytowns of Latin America, Chinese policymakers decided to grow and revamp cities to accommodate urbanization. Other choices could have been taken including allowing the market to work freely. But China has too little land and too many people to embark on haphazard approaches. As a result as we have shown here, China took the successful measures in the USA and Europe and is applying them in the industrialization/urbanization path early in the process.

The cases of Liaoning cities provide instructive lessons for other developing nations. The cities have not only been renovated to meet up with the rest of China's successful cities, but also the transformation projects have emphasized growth with equity.

This is in tandem with the findings from other Asian and developing nations' cities that are rapidly shifting away from labor-intensive to high-technology industries and to the service-oriented sector. For instance, Cebu City in the Philippines is prospering on the back of business process outsourcing, where the number of jobs soared from 40,000 to 70,000 from 2009 to 2010. In India, Bangalore, the capital of Karnataka state, is behind 32 % of the country's software exports and provides 25 % of jobs in the national information technology sector.

In Liaoning, there is preponderance evidence that infrastructure development focused equally on improved productivity (and quality of life); in other words, economic growth and urbanization have taken place concurrently over the last three decades. According to the UN-Habitat *State of Asian Cities Report*, the region contributed a significant 30 % of the world's economic output in 2008.[11] More specifically, the report noted that cities accounted for 80 % of Asia's gross domestic product, while only hosting slightly over 40 % of the total population of the continent. Per capita growth (as measured in constant year-2000 US dollars) has been spectacular in East Asia and the Pacific, with a 120 % surge between the year 2000 and 2010. By comparison, over that same period GDP per capita in Europe grew 56 % (same in Central Asia), and only 22 % in Latin America and the Caribbean. The lessons from Liaoning show clearly at the micro- and mesolevels, the sources of the growth and the basis on which development rules are being redefined.

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Chapter 2
Slum Upgrading Policies of China's Shantytowns

2.1 Introduction

As early as the mid-nineteenth century, slums had been "widely recognized as an international phenomenon." However, it was not until the 1950s and 1960s that the seriousness of slum problems began receiving widespread concern in the international community. Both developed and developing countries, such as the United States, Germany, Brazil, India, and Pakistan, have made sustained efforts to solve the problems of slums, but the results are far from satisfactory: from the 1960s "slums of hope," through urban poverty's "big bang" during the debt decades of 1970s and 1980s, to today's unprecedented mega slums. From the sprawling barricades of Lima to the garbage hills of Manila, urbanization has been disconnected from industrialization, and even economic growth. Slums spread all over the planet like "chronic illnesses" and "cancers," constraining both urban development and its residents' production and everyday life.

2.2 International Slum Improving Practices: Experiences and Lessons

Historically, as far as national governments are concerned, there have been different attitudes toward slums. Many countries including the United Kingdom and the United States initially regarded slums as hindering factors of urban renewal and development and mainly took measures of eradication and cleanup (Abrams 1966; Potter1992; Clark 1996). Consequently, the slum dwellers either became homeless or moved to public housing. In the 1960s and 1970s, India and most national governments of Latin America generally tolerated slums, and the rights of slum dwellers were protected to some extent. Of late, most countries have adopted

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_2

different measures or policies to solve the problems of slums, which include insecure housing tenure, overcrowding, poor quality of construction, poor sanitary conditions, and lack of drinking water. The results have been mixed, with some effective policies and failed experiences. Generally, four kinds of measures have been taken: expulsions or eradication, public housing construction, housing subsidies, and slum infrastructure improvements.

Most slum dwellings are unauthorized constructions setup by individuals on illegally occupied land. Slums raise urban crime, aggregate pollution and infection, and bring about many economic and social problems, which largely constrain urban development. Initial policy in the early stages of urban development for both developing and developed countries, including the United Kingdom and the United States, was to merely neglect or eradicate slums. Hardly, any indications of slums or other informal settlements could be seen on the land planning maps of developing countries before the early 1970s. The 1970s and 1980s ushered in expulsions and eradication of slums as a universal coping mechanism, especially in the countries and regions with centralized power but lacking adequate corresponding legislations. The authorities usually expelled slum dwellers in the name of urban renewal projects (urban center transformation or urban infrastructure construction in particular), or under the pretence of improving health and safety facilities (UN-Habitat 2003). From 1946 to the late 1960s, the British Government utilized a "filter" policy, which first moved out the residents and employees from the urban center and then carried out the cleanup and development of the inner city. The government's decentralization policy and market forces jointly promoted the emigration of urban residents (Perten et al. 2011).

Measures of expulsions or eradication provided no solution for the slum problem, only resulted in the spatial transfer of slums from urban centers to urban fringe areas. With urban sprawling, slum problems fall into an endless vicious circle: Slum dwellers are constantly expelled from urban centers but new slums emerge accordingly at the urban fringes.

2.2.1 Construction of Public Housing

Since serious housing shortage is the most significant feature of slums, most municipal authorities attribute the problem of housing shortage and poor housing quality of low-income residents to market malfunctioning. Since the 1930s Roosevelt New Deal, the United States began building public housing for low-income residents; after World War II, the USA continued to carry out large-scale public housing construction. In 1947, the Truman Administration invested over 60 billion dollars in building more than 100 million units of housing to meet the needs of veterans and those in poor living conditions. During the "Great Society" period of the Kennedy and Johnson Administrations, public housing construction in the USA reached a peak (Huang An-nian 1998; Li Yan-ling 2001). For nearly 20 years

after World War II, England had taken the "decentralization" policy, clearing up old houses and slums in the inner city and carrying out large-scale public housing construction in new towns (Perten et al. 2011). Developing countries, e.g., Brazil and India, followed this practice in the 1960s and 1970s (Du Yue 2008; UN-Habitat 2003). However, this approach was soon abandoned because the supply of public housing was far from meeting the demand. It is estimated that the supply of public housing in developing countries meets no more than 1 % of the total demand (UN-Habitat 2003). In addition, many developing countries suffer from serious corruption, inefficiency, and unfair distribution in the allocation of public housing.

Measures of public housing can really count only when large-scale construction is possible and the government works consistently in a fair and impartial way. During the process of public housing construction and urban renewal in the United States, the original settlements of low-income residents were often developed for commercial or luxury residential purposes, which then triggered the transfer of the poor from one place to another within the city (Richardson 1971).

2.2.2 Housing Subsidies

Due to the unsatisfying results of public housing construction, both the developed countries that emphasized effective markets and the developing ones with relatively low efficiency begun turning to housing subsidies, hoping that with better housing affordability, favorable market mechanisms would aid the residents in solving the housing problems by themselves. Since the end of the 1960s, the British Government implemented a "bootstrap" policy, which not only renovated low-quality houses, but also provided improvement subsidies for homeowners, landlords, and the developers in accordance with the Housing Act of 1969, 1974, and 1980 to compensate for their costs of resettlement. With the Housing Act of 1989 and 1996, the British Government granted special allowances for low-income homeowners and tenants (Doe 1995). In the 1980s and 1990s, Brazil, Mexico, and many other countries took similar measures. The government of Argentina has made great efforts to maximize housing relief. The rental subsidies are differentiated according to different payment abilities: For those low-income families without the ability to pay, the government takes full responsibility; for those having certain abilities to pay the rent, the government foots a proportion of the bill. In order to solve the housing problems for the poor, Jamaica established a National Housing Trust (NHT). For the same purpose, Mexico also established a similar fund (FOVI).

Slums are the result of spontaneous market forces, so meager allowances can hardly change the situation. Compared with public housing construction, housing subsidies mattered even less and thus played an almost negligible role in the evolution of the urban space.

2.2.3 Slum Infrastructure Improvement

Poor infrastructure is a defining feature of slums, and the transformation of housing itself without improving its infrastructure can never solve the problem. In 1966, President Johnson signed the Housing Appropriations Bill to establish a federal fund for transforming poor cities to model cities. The amount of rental subsidies equaled the margin between 25 % of the tenant income and the rent; the overall environment of slums in about 60–70 cities was transformed with improved housing conditions, transportation facilities, drainage systems, schools, hospitals, entertainment facilities, and increased employment opportunities. Under the new approach of the HOPE VI program begun in 1992, the United States moved away from providing project-based assistance for poor families and started promoting mixed-income housing by attracting higher income residents to prevent the concentration of troubled, low-income households. The 2010 Housing Plan of the Obama administration followed the HOPE VI program and further emphasized the development of supporting facilities and sustainability. After nearly 20 years of inaction, the British Government began actively improving the community environment in the late 1990s. In 1998, 800 million pounds were invested in the housing and community environmental reconstruction of 17 shantytowns. Residents, associations, and local governments all helped in the process of eliminating garbage, building new housing, improving education and health standards, reducing crime, and increasing employment opportunities. In the 1990s, Brazil began to upgrade the infrastructure conditions in slums. In 1989, Sao Paulo started the city's first large-scale slum reconstruction plan—the Urban Poor Settlements Renewal Program, which aimed at building and improving infrastructure and the living conditions of slum dwellers.

In the conceptualization of mainstream economics, international slum reconstruction usually focused on the dynamics of economic and social phenomena and the lack of comprehensive and systematic analysis. Therefore, early reconstruction was aimed mainly at relieving housing shortages, while little attention was paid to infrastructure, community environment, and urban spatial structure; in contrast, the later stages emphasized infrastructure and community environment, but housing construction was lagging behind. Most countries and governments were struggling to find a balance between the two above-mentioned preferences in their slum upgrading practices. Finally, international practices are generally aimed at solving the problem of housing shortage rather than the issue of property rights. In other words, it is "dwelling" not "owning" that enjoyed the priority.

Although the international community has made great efforts in slum upgrading, the results are unsatisfactory. Approximately 1 billion people worldwide are still living in slums. First, neglect and expulsion only transfers slums to urban and urban–rural fringes. As the city continues to expand, a vicious circle prevails: Slum dwellers are constantly expulsed but new slums emerge and gather elsewhere outside the urban center. Secondly, public housing meets < 1 % of the total demand; and in most developing countries, public housing is mainly

for government employees, e.g., the police or teachers, and not the needful low-income groups. Third, popular practice is to carry out "slum upgrading," which involves regulating land and housing rights and improving infrastructure, which typically includes water and power supply, sanitation, drainage, sidewalks, public toilets, street lights, and roads. However, programs of slum upgrading involve no construction of new houses and in most cases, the residents have to build their own houses by themselves. Due to their low-income levels, slum dwellers are still confronted with great difficulties in extending their living space even with loans or subsidies. In addition, the self-transformation strategy advocated by UN-Habitat stresses mobilization of the private sector and residents, and the government is only responsible for clearing institutional barriers and providing planning and consulting services, which easily brings about inefficiency and slackness.

In summary, the existing inadequacies of international slum upgrading include the following aspects: First, although most countries have formulated plans for slum upgrading, they still lack top-level strategic planning and coordination. Second, as for the dominant role and organizational patterns in slum reconstructions, different sectors especially the local governments do not fully commit themselves despite the extensive participation of NGOs. For instance, the local governments and social groups in the United Kingdom were completely excluded from the transformation process in the 1980s. Third, although some countries and regions have achieved certain institutional breakthrough in slum upgrading, the whole system did not attain its expected results due to the absence of necessary supporting policies. Fourth, concerning management and services, international slum upgrading has undoubtedly accumulated some valuable experiences such as community self-management and third-sector entrustment, but standardized, systematic, and normalized management measures are still insufficient. Fifth, although some countries or regions have established various financing channels for slum upgrading, dynamic supervision of the use of funds and especially the sustainability of different funding sources are poor. Sixth, international slum reconstructions have generally confirmed the dwellers' ownership of land and slum housing; however, approaches to overcome land constraints and ways to intensively employ land resources are still under exploration. Seventh, in order to cut costs, most slum reconstructions adopted the measures of tinkering with the original establishments rather than pulling them down and reconstructing (though Argentina was an exception), which determines that no dramatic changes were possible. Eighth, housing loans or subsidies are not enough to secure the life of low-income slum dwellers. What really matters is to improve their employment and re-employment abilities through necessary training and to help them to become self-supporting. Ninth, international slum upgrading is mostly aimed at improving poor housing only, regardless of community or economic development and transformation, which limits the government budget on slum upgrading. Tenth, most slum reconstructions focused on improving the community's infrastructure and physical appearances but lacked attention to the transformation of the mental and cultural outlook of the residents. Eleventh, slum reconstructions of different times had different points of emphasis: improving housing itself in

early times while strengthening infrastructure since the 1990s. Thus, the housing upgrading and infrastructure building in shantytowns were out of step with each other. For those infrastructure programs carried out by NGOs or communities, their lack of integrity with the whole city seems even sharper. Twelfth, current international slum upgrading is mostly done on the original establishments, which in turn has little impact on the spatial layout of urban economic activities, let alone facilitates the coordinated development and space optimization of the inner city.

2.3 Shantytown Reconstruction in Liaoning Province: Public Policies and Measures

The Province took a series of measures to ensure that the shantytown residents could "move in easily, live in comfort, and live in stability." "Moving in easily" means that on the premise of guaranteeing quality, the government tries to lower the housing costs so that all shantytown dwellers can afford to move into new houses with the help of subsidies and allowances. "Living in comfort" means that the new houses have reasonable building structures, well-equipped infrastructure, and public service facilities so that the residents can live in peace and convenience. "Living in stability" means that the government not only takes measures to reduce the residents' housing and living expenses but also makes sustained efforts to increase employment opportunities and raise their income level so that the residents can live a stable life in the new communities.

Shantytown reconstructions are closely related to various aspects of urban transformation and development, i.e., a slight change in shantytowns may affect the situation as a whole. The province persistently implemented the people-oriented principle and adhered to a set of comprehensive, systematic, and sustainable ideas and methods.

Today, in China, the people-oriented principle entails sharing the achievements of China's reform with every Chinese citizen and allowing every citizen to partake of the fruits of urbanization, industrialization, and modernization. However, China's reform and opening up followed the path of allowing some people to get rich first, then gradually seeking widespread prosperity, which in a way has resulted in income inequality and left a considerable number of people in relative poverty.

Market-oriented reforms in the province turned a number of state-owned or collective enterprises into modern market entities, resulting in some enterprises drifting toward bankruptcy, especially those that were not resource maximizing. Consequently, millions of workers who had made great contributions to the New China not only earned little and less but also lived miserably in deteriorating housing conditions. Clearly, whether the government could solve the housing and living problems of those people or not forms a key indicator to test how the government implements the principle of people-oriented development. In 2005, the province launched large-scale reconstructions to improve the life of the shantytown residents.

Shantytown reconstruction in the province not only aims at improving the housing conditions, but also focuses on promoting employment, raising incomes, encouraging self-employment, enriching cultural life, improving the educational environment, and building harmonious communities as well. As the leaders of the province stated, they took all possible measures to ensure that shantytown residents were able to "move in easily, live in comfort, and enjoy stability." To achieve these goals, the provincial government and the relevant municipalities all coordinated multi-policy efforts to meet the comprehensive needs of the shantytown residents. The local leadership team of the province pooled all available financial resources together to serve the reconstruction project. The Department of Human Resources and Social Security established a training network to help laid-off workers get re-employed with free training and sustained them with a certain amount of subsidies. The Employment Bureau of the Labor Union provided interest-free micro-loans and credit support for some laid-off workers to start their own businesses. The Bureau of Civil Affairs not only implemented the national basic living allowances system among those low-income households but also further categorized a group of quasi low-income households, raising a special fund to help them. In order to encourage the shantytown residents' enthusiasm to participate, the provincial leadership advocated self-government and pushed forward the construction of harmonious communities.

In the process of shantytown reconstruction, the province coordinated all relevant aspects and set up an overall plan. They recorded significant achievements by combining large-scale shantytown reconstruction with comprehensive industry restructuring, New City building, as well as economic and social development. Between 2005 and 2011, more than 40 million m^2 of shantytowns were turned into new communities of multiple dwellings, housing over 70 million households and altogether more than 220 million people, whose living and livelihood conditions were effectively and completely changed. Additionally, new industrial parks in many cities sprang up with powerful productivity, which have not only generated great profits for the enterprises but also enhanced the fiscal revenue of both the provincial and their local municipal governments. The mutual benefits are evident in that the rise of new industries and New Cities provided employment opportunities for shantytown residents, and at the same time, the expansion of government financial resources provided strong guarantee for the shantytown reconstruction projects.

The successful advancement of shantytown reconstructions in Liaoning since 2005 depended on the effective combination of the objective laws and subjective initiatives. During the nearly 20 years from 1987 to 2005, shantytown reconstructions in Liaoning progressed slowly, at a speed which would probably have taken more than half a century to complete the task. The reconstruction started in 2005 and was preceded by a systematic analysis of the real constraints, followed by effective mobilization of the required resources to support the reconstruction and construction of the shantytowns. Other key objectives include the paying off city debts through promoting industrial restructuring, facilitating economic growth, and raising the income of government, enterprises, and individuals.

"Move in easily, live in comfort, and enjoy stability" is a direct expression of the orderly arrangement of Liaoning shantytown reconstructions. The practices effectively targeted the shantytown problems accumulated over the years. After the large-scale, centralized demolition and construction of shantytowns in 2005 and 2006, millions of poor residents moved into new buildings. Later in 2007, the party and the government of the province actively started the construction of what was envisaged to be harmonious new communities. These include key objectives of "residents' self-management, good order, perfect service, beautiful environment, civility, and harmony" and a series of related measures. These not only strengthened the coordination of various aspects of the new districts but also greatly improved the survival and development conditions of the community residents.

2.4 Strategy and Planning of Shantytown Reconstruction

Conceptualizing the shantytown reconstruction as an innovative project in urban construction and development, the province government set up plans to coordinate the relevant urban, economic, and social development. Specifically, they carried out shantytown reconstruction together with the optimization of urban space layout, infrastructure construction, public services improvement, urban functions refinement, city image upgrading, urban capacity and competitiveness promotion, urban economic development, and the overall revitalization of the Northeast Old Industrial Base. Through taking advantage of economic, political, social, environmental and engineering technologies, etc., the Province promoted the shantytown reconstruction.

The province brought shantytown reconstruction into the overall urban economic development objective, aiming to promote urban economic transformation and development through shantytown reconstruction and to carry out reconstruction smoothly through taking advantage of economic development. With considerations of urban economic growth, space expansion and industrial development, etc., the province adhered to the principles of "overall planning, proper layout, environmental concerns, comprehensive development, and complementary construction," solving the housing problem and promoting industrialization and urbanization as well.

According to the urban development trend and its functional layout, Fuxin City took shantytown reconstruction as an important measure and step to promote economic restructuring and development and put emphasis on the reconstruction of its southern mining-based part. Fushun City, which implemented the strategy of "suppressing the second industry and developing the third industry," took into consideration both the stock of assets from state-owned enterprises reconstruction, urban redevelopment, and the land vacated from large-scale shantytown reconstruction, eventually constructing three industrial parks. Dandong City also put shantytown

reconstruction into the overall urban planning and thus sped up the construction of the urban center, expanded urban space, refined urban functions, and promoted the level of urbanization.

Again, the province brought shantytown reconstruction into the overall urban social development planning. While reconstructing the poor settlements, they also focused on improving social management, social service, and social security systems. Through coordination of planning, institutions, and policies, the new areas rising from the old shantytowns enjoy the same social service and social security systems as the commercial communities. The planning not only stressed the construction of new patterns of harmonious communities but also put the improvement of social services as a priority and established a well-developed three-level (district, street, and community) social security network. These include endowment insurance, unemployment insurance, medical insurance, and a guarantee of subsistence allowances for urban residents, which made the pattern of "minor illness turning to communities and serious illness to hospitals" possible. Taking Fuxin City as an example, the government established one-stop service centers in every new community where community offices, playrooms, guard rooms, and infirmaries were all combined in one place. This practice greatly expanded the scope of community service and benefited the residents with convenience and efficiency.

2.4.1 Shantytown Reconstruction, Infrastructure Planning, and Urban Environment

In allusion to the outdated shantytown infrastructure and the lack of basic services, the province carried out infrastructure construction and housing construction simultaneously; cities of the province exerted themselves in garbage cleaning, landscaping, and greening, which radically improved the appearances of the cities. The province set up a "green land threshold" which fixed a minimum Green Coverage Rate of 25 % for the newly reformed areas. In so doing, the urban green area in the province increased remarkably. By the end of 2011, the newly increased green area of the province had amounted to 6.393 million m^2; the per capita public green area of Fuxin City increased from 5.4 to 9.8 m^2, marking an increase of 81 %.

In 2006, the province introduced relevant documents to clarify nearly every supporting aspect of shantytown reconstructions, including municipal facilities construction of roads, green land, and environmental sanitation; and public service facilities construction of health care, education, culture and sports, community service, business services, finance, post and telecommunications, and administrative management. By the end of 2008, the province had added 2.91 million m^2 of road, 111 km of traffic lines, 438 km of water supply pipelines, 774 km of drainage lines, 30 l km of gas pipelines, 3,744 commercial outlets, 33 schools, 96 medical

and health institutions, 86 health service stations, 133 medical rooms, and 295 sets of fitness equipment in the post-reconstruction areas.

2.4.2 Shantytown Reconstruction, the Real Estate Industry, and Spatial Planning

The province integrated shantytown reconstruction into the real estate and housing development planning. "The Citrix of Liaoning Province's Mass Shantytown Reconstruction" introduced in 2005 clearly put forward that great importance should be attached to real estate development during the reconstruction process and shantytown reconstruction should be connected with the construction of economic housing and the promotion of low-rent housing. The majority of new houses built in shantytown reconstructions are separate flats of about 70 m^2, especially those <60 m^2, which effectively increased the supply of small- and medium-sized housing. Since 2004, about 20 % of the urban population in the province has solved their housing problem through the shantytown reconstruction project.

To ensure that the residents could live comfortably, the government and relevant departments carried out careful studies and made humane designs about the size and area of the new housing according to local realities. By widening the balcony, Fuxin City moved the kitchen to the balcony and turned the original kitchen into a small dining room or living room, additionally, stating that bathrooms must be large enough to hold the washing machine and shower fittings, etc.

The province brought shantytown reconstruction into the urban spatial planning and implemented the principle of "overall scattered, locally assembled, and individually mixed" to break the spatial aggregation of poverty. The majority of shantytowns in the province were formed on the basis of makeshift houses of large state-owned industrial and mining workers; many of the shantytowns are of relatively large sizes, and the congregation of those residents is bound to further aggravate poverty and the imbalance of urban space development.

In order to break the spatial aggregation of poverty, each city in the province arranged for the former shantytown residents to be scattered throughout the urban areas but gathered in parts to some extent. First, for those relocated shantytown residents, the government, considering both the requirements of the general urban planning and the wishes of the residents themselves, set up two patterns of relocation, the overall relocation and scattered relocation, to settle the low-income residents among the living space of residents with relatively high income. Secondly, for those in-place re-settlers, the government set aside certain areas of the land for commercial housing development to attract higher income citizens to buy the houses and join the community. The Chengjia housing community of Mingshan District, Benxi City, developed commercial housing as well as move-back housing in the same place. Dandong City even planned shantytown housing and commercial housing in the same housing community.

The land occupied by shantytowns in the province was included in the overall land use planning, which solved not only the land problem of shantytown reconstruction but also the financing shortage problem hindering the reconstruction project. Through this practice, the government improved the appearances of the cities, facilitated the construction of infrastructure and public services, and promoted the appreciation of land value, which in return provided financial support for the shantytown reconstruction.

The existence of shantytowns, to some extent, hindered the process of urbanization and the performance of urban functions and resulted in a tremendous waste of resources. Through shantytown reconstruction, the government achieved optimal allocation of the vacated land, adjusted the structure and layout of urban land, realized rational and effective use of land, and expanded urban space and the size of the city. Fushun City and Fuxin City successfully constructed industrial parks and farmers' markets on the vacated land.

2.4.3 Diversified Financing Channels for Shantytown Reconstruction and Living Standards

The financing problem composed one of the main constraints of the shantytown reconstruction. To mitigate, the province made every effort to broaden the financing channels by adhering to the so-called nine-in-one financing pattern of government subsidies form a part, enterprises raise a part, individuals pay a part, market earns a part, banks provide a part, society donates a part, work units assist a part, and the project saves a part. From 2005 to 2011, the funding was relatively stable and sustainable, and the vast majority of the funds were reimbursed as planned.

The diversified financing pattern achieved a dynamic circulation balance. In the beginning, shantytown reconstruction required a large amount of money in a short time; therefore, the project was burdened with large debts. These debts initially brought great pressure because the fiscal revenue of that time could hardly make ends meet. Since then, the province has substantially raised the land-transferring fees of vacated land and increased fiscal revenue by stimulating growth through shantytown reconstruction. In 2011, fiscal revenue of the Liaoning provincial government amounted to 264.1 billion Yuan, which was nearly five times that of 2004.

The fundamental goal of shantytown reconstruction is to enable the residents to get a comprehensive development and to narrow the disparity between income groups. Through shantytown reconstruction, the province tackled several problems including unemployment, lingering issues from the reform of state-owned enterprises, medical assistance of laid-off workers, and educational hindrances for children from needy families, etc. In short, through multi-policy practices, the government gradually increased both the income and quality of life for shantytown residents.

At the very beginning of shantytown reconstruction, the province introduced the relevant policies of employment and training to guarantee the residents a stable life. Laid-off shantytown workers not only have priority to public service posts

but also enjoy full employment and social insurance subsidies. The government provided job training indiscriminatingly to all laid-off workers, encouraged them to start their own businesses, and effectively improved their income. In 2007, the government even put forward a project "to ensure that within 60 days, all shantytown households are provided with stable jobs." In 2010, the government issued a document, giving the low-income households and quasi low-income households corresponding heating subsidies and reliefs. In addition, the province has also introduced a series of sustainable development planning involving employment, training, assistance and relief, and income increase of low-income households.

2.5 System and Pattern: Government-Led, Market-Oriented Operation

The shantytown reconstruction of the province was a trans-normal initiative implemented within the existing institutional framework of the Chinese mainland, which involved a coordination of political, economic, social, and many other fields. This work requires exceptional organizational structure and an efficient working mechanism. To this end, the province established a corresponding organizational system and working mechanism, which featured party committee leadership, government guidance, market operation, and social participation, which effectively ensured the smooth implementation of the project.

Shantytown reconstruction was neither the natural result of urbanization or market systems nor a decision made within the framework of the conventional system. It was an overarching decision made by the leadership team of the Liaoning Provincial party committee with extraordinary courage. This high-risk decision broke the systematic constraints and fundamentally changed the developing process of the shantytowns in the province.

The municipalities of the province made shantytown reconstruction the priority project in each city. During the process, chief leaders of both the party committees and government at all levels, i.e., the Party Secretaries, governors, and mayors headed the projects. In order to accelerate the project, the Provincial Standing Committee members saw to different cities; leaders at the level of cities or counties (urban districts) saw to different shantytowns; cadres and party members saw to assigned households.

The removal and relocation sectors are the most complicated processes in shantytown reconstruction. They involve 10 major problems including policy, economy, design, size, area, land, time limits, property rights, health conditions, and family financial situation. Confronted with an enormous workload, the party organizations and governments played a huge role in information distribution and cohesiveness. Tens of thousands of party members and cadres went from door to door in the shantytowns, informing residents about shantytown reconstruction policies, solving problems, and answering the doubts of the residents. In their race against time, Yingkou City put forward a slogan of "sweating not weeping,

losing weight not lagging behind". Tieling City deployed more than 3,000 grassroot cadres to go into each demolition site. Their work demanded extremely long hours and demanding schedules that restricted sleep, food, and the ability to return home.

The provincial government set up a coordination group for shantytown reconstruction, which included 17 departments such as Department of Construction, Public Finance Office, and Department of Land and Resources. Their job was to coordinate the aspects of planning, demolition, examination and approval, financing, construction, and moving back. Additionally, the government also established systems of inspection, scheduling, reporting, and funds management.

The municipal governments functioned as the major investors, behavioral agents, and duty officers of the project. All cities in the province set up leadership teams, with the principal leaders as the head; executive offices were set up under the leadership teams, drawing staff from the municipal bureaus of construction, land planning, real estate, finance, law enforcement, public security etc., which were responsible for corresponding affairs. In addition, the municipal government permitted the City Investment Corporation to exercise the integrated functions of "loaning, using, managing, and repaying" and to play the main role in financial markets.

District-level governments set up appropriate institutions and formed a complete organizational system to ensure the implementation of the project. As detached offices of the government, street committees actively set up community-based organizations to connect thousands of households with the government. In 2005, being the most basic governmental staff, the district- and street-level cadres, together with community workers, held residents' meetings, publicized reconstruction policies among residents, set up policy advisory stations to answer questions of the residents, and even directly helped residents to move, relocate, resettle, and then move back.

In the course of shantytown reconstructions of the province, governments at all levels attached great importance to mobilizing enterprises, especially the real estate enterprises. By means of remission of taxes and land-transferring fees and other incentives, the governments made every effort to attract enterprises to participate in the process of shantytown reconstruction. Real estate and other related enterprises actively responded to the call, even when the profit margin was relatively low. According to incomplete statistics, from 2005 to 2008, more than 500 Liaoning Province real estate and construction companies participated in the shantytown reconstruction project.

In marketing operations, for lands with high commercial value, the government assigned the rights to land use by means of bid tendering, auction, and quotation. The real estate enterprises, in accordance with the planning, pooled funds by themselves and began the construction of resettlement housing and commercial buildings. For lands without commercial value, the reconstruction was financed by fiscal investment from the government. The cities including Dandong, Jinzhou, Yingkou, Liaoyang, Panjin, and Huludao attracted social capital. Shantytowns in Fushun, Benxi, Fuxin, and Chaoyang were either at the edge of those cities or

around mining areas, where the land had low added value and were not advantageous for market operations, so most of the investment came from government financing.

The party and government organs at all levels, the labor unions, Communist Youth Leagues, women's federations, the central units, and the military and police forces, stationed in the province all actively supported the shantytown reconstruction. They did a lot of work to aid the government in a number of specific difficulties and effectively promoted the reconstruction process.

The labor unions played an important supporting role in the project. Liaoning used to be China's industrial base and most of the shantytowns were in the industrial and mining areas, where 70 % of the residents used to be mining and industrial workers. They have sound labor union organization systems and rich experience of large-scale mobilized work. In the reconstruction process, the labor union organizations at all levels in the province did a lot of work. Firstly, they ably negotiated low rents in the larger residential areas with the government for their workers. Secondly, they carried out thorough investigations to engage needy families and ensured that each household could move into new homes. Thirdly, after the shantytown reconstruction, labor union organizations at all levels continued to explore long-term mechanisms for helping the low-income groups and have established many labor union aid stations in the community. Benxi Municipal Federation of Labor Unions established aid stations and livelihood supermarkets in the New Area. By the end of 2007, 11 cities in the province had established 71 aid stations altogether in the new post-reconstruction districts, which could cover up to 120,000 low-income residents.

In summary, shantytown reconstruction involves a complex pattern of public interests including demolition, resettlement, and life reconstruction, which calls for not only the government's promotion. In advancing the shantytown reconstruction, the province focused on the construction of new districts and new geosocial systems, and at the same time, with the party committee as the core of leadership, they established strong community organizations as well. These have become effective social governance and self-government bodies connecting the residents with the government after the shantytown reconstruction.

In shantytown reconstruction, the province established 290 new communities, in which a physical, gridded, digital, and full-coverage party building was built, forming a strong base for the enabling solutions to livelihood issues in new post-reconstruction districts. For example, relying on the party organizations of the communities, the Chengjia housing community of Mingshan District, Benxi City, explored new social governance models according to major problems arising in the new districts. Community-based organizations actively promote the employment of the residents and help residents rebuild their livelihood bases. Community party members specify their area of responsibility and energetically provide public services. They carry out services such as helping residents to appeal to the higher authorities, aiming to smooth the residents' appeal channels so as to resolve social conflicts and to promote fairness and justice. The community staff also tries to distribute legal knowledge and urban lifestyle choices to improve the quality of

residents. In terms of personality transformation, the Modi Community of Fushun City did a great deal of useful work. They set up eight mass teams, established the residents' Convention of Civilization, called for the residents to "say goodbye to bad habits and head for civilization," and guided residents to establish a socialist concept of honor. The shantytown reconstruction changed not only the living environment but also the mental outlook of the residents dramatically.

The members of shantytown households are the main beneficiaries of the newly built housing. In accordance with the reconstruction principle, each household has to pay certain amounts of money for the expanded area compared with the original housing area. The vast majority of shantytown residents actively accepted the economic burden in support of the government policy and ensured that the project started and residents moved back as scheduled.

Shantytown residents are not only the beneficiaries, but also the participators and contributors to the reconstruction project. In the designing, planning, and constructing stage, the shantytown residents actively participated in policy advice activities organized by the government; with their advice and suggestions, the project design got closer to reality. They also participated in quality supervision, which effectively eliminated loopholes in the construction and greatly improved the project quality.

2.6 Institutions and Policies: The Benefits of a Multi-dimensional Approach

Since the market-oriented housing reforms in 1998, urban housing system in mainland China has gradually transformed from welfare-oriented housing distribution, i.e., a "real estate-based system supplemented by indemnificatory apartments." The existing housing system is constructed in accordance with the income class, although the vast majority of residents living in shantytowns belong to no-income and low-income groups, and it is still quite difficult to fundamentally solve the poverty clustering problem under the existing institutional framework. In order to fulfill the tasks and objectives of the reconstruction in a short time and to effectively solve the housing problems of low-income groups, the province took a lot of measures to explore beneficial systems and policies in housing, land, finance, economy, society, etc.

Liaoning established systems of supervision, scheduling, reporting, and financial management to coordinate and promote the reconstruction of shantytown areas. Mayors took sole responsibility and put shantytown reconstruction in the objective assessment of the municipalities. Each city set up a leading team and a special office for the project, and relevant functional departments grouped together to provide "one-stop" approval and "one-stop" services, which changed the vertical administrative management into efficient parallel management.

The resettlement house area is determined by the local conditions of each city including real residential housing, finances, and income levels. The average built-up area is between 40 m–70 m^2, which is no higher than the transformation and

resettlement criteria set for the coal-mining subsidence areas. Despite the smaller housing size, the cities adhered to the "people-oriented" concept of housing structure design, which is "small in size but full-featured, low cost but high quality." In order to alleviate the economic burden of the residents, Fushun City differentiated six categories of altogether eight different housing types for the residents to choose from.

In addition, the housing design and construction strictly implemented the state's mandatory technical standards; like commercial houses, the building materials are the same new-type energy-saving materials up to the national and provincial regulations; the new apartments have simple indoor decorating to meet the residents' basic requirements of living.

2.6.1 Equitable System and Property Rights

In shantytown reconstruction, the province implemented the "one and only housing" principle, i.e., for the publicly aided private housing, houses built before liberation without certificates, and houses with land licenses but no property certificates, the government issues free Land Use Certificate and House Property Certificate in the process of reconstruction as long as the house is confirmed to be the only house of the household.

The province carried out just, fair, and open demolition according to law. Relevant agencies, professionals, and representatives of residents cooperated in determining the resettlement measures; party members and cadres explained the relocation compensation policies and systems from door to door. All the details concerning the vital interests of the shantytown residents were publicized by means of newspapers and television or in the community, including the housing compensation standards, housing residual value assessment, resettlement order, and resettlement housing designs.

The province made flexible innovations to ensure the property rights of residents. For families with better economic conditions that can pay in a lump sum, "full property right" is implemented, i.e., with house property certificates, those houses can be traded at any time. For those that can pay only a part of the total sum, the system of "property rights deposit" is implemented and they can get the property certificates later when they finally pay off the rest. For those particularly poor households, they can get "part of the housing property ownership," i.e., of the same area of their original housing, while the rest becomes low-rent housing, for which the residents pay the rent according to existing standards. If the residents cannot afford the rent, the property management sectors are responsible for keeping accounts and paying the rent.

Different development patterns are adopted according to different shantytown locations. For those projects that can be operated with the help of preferential policies, the government adheres to a market-oriented operation pattern. It means that with preferential treatment from the government, enterprises balance

the construction funds by themselves. For those projects that enterprises themselves cannot balance the funds merely through governmental preferential treatment, the government will combine government guidance with market operation. It means that the government provides certain allowances as well as preferential treatment, and enterprises take the responsibility of specific operation. For those that cannot be carried out through market operation, the government will directly allocate enough funds and arrange for relevant enterprises to start construction and reconstruction.

The province prioritized land supply and security for shantytown reconstruction by scheduling it into the annual planning for land supply. Being integrated into the affordable housing programs, the land required for shantytown reconstruction was arranged through direct administrative allocation.

Vacated shantytown land can be used for developing commercial housing or other commercial projects through bid tendering, auction, or quotation, and the resulting land revenue can be invested to support the reconstruction project in return. The government also raised funds by sparing some land in the reconstruction neighborhood for commercial development. The residents and enterprises were exempted from paying land registration fees, state-owned land use taxes, and other administrative fees, which reduced the cost of reconstruction.

Funding is a basic constraint for shantytown reconstruction. As for the financial sources of shantytown reconstruction, there are no relevant systems and policies from the central government. During the course, the province always took measures to open up the financing source and regulate the expenditure flow as well.

Affected by financial constraints, the province opened multiple channels to raise funds. Under the "government + market + society" financing pattern, the funding problems of shantytown reconstruction was solved through market-oriented operations with the government as a strong final backer.

The government set up special accounts for reconstruction, and the funds were allocated directly by the municipal finance to the construction units to prevent fund leakage and ensure security. The specific measures include a special account system, separate revenue and expenditure management systems, a joint-auditing system for expenditure and management of funds, and a system of "three-level auditing and publicity" for the allocation and use of reconstruction funds.

The province applied policy loans from the State Development Bank for shantytown reconstruction, which are guaranteed and repaid by provincial and municipal finances. The main sources for the municipal government to pay the loan principal and interest include land transfer fees, financial borrowing from the provincial government, fiscal revenue, and income from expanded areas and surplus apartments. In so doing, the government took on the debts, but transferred the property rights to the residents, which amounted to a kind of indirect loan for the low-income households guaranteed and committed by the government.

After the housing monetization reform, China's housing construction operated in the market, including indemnificatory apartments. The shantytown reconstruction in the province started from 2005 achieved breakthroughs and inno-

vations in relevant systems and policies and created the "government-led + market operating + social participation" mode of operation.

In the province, governments played a leading role throughout the process, ranging from investment to implementation (planning, demolition, construction, and moving back) and the ensuing management. Through the price and competition mechanism, shantytown reconstruction actively mobilized the dynamic role of the development companies and construction companies. Social forces of both individuals and NGOs were also mobilized to promote the reconstruction.

2.6.2 Innovative Property Management Model

2.6.2.1 Standardized Management System

The property management in the new communities is defined by the "Six-have" and "Four-explicit" standard. "Six-have" means that the community must have regulatory agencies, owners' committee, management rules, management system, maintenance funds for public parts, public facilities, and management files. "Four-explicit" includes explicit service items, explicit service standards, explicit service charges, and explicit service responsibility.

2.6.2.2 Self-service Residential System

The everyday management of government-transformed shantytowns is in the charge of street offices and the communities' neighborhood committees. By combining community management with residents' employment, they not only reduced the property management fees, but also expanded employment.

2.6.2.3 Community Social Service System

New resettlement communities are equipped with various social service items such as municipal administration, forestation, environmental protection, and medical, cultural, and legal services. Additionally, each community is equipped with a police station, police officers, and security patrols.

2.6.2.4 Create Employment Opportunities and Encourage Own Business Ownership

Government takes the responsibility of solving the employment problem tagged "zero-employment households" by procuring positions of cleaning, greening, security guarding, and other public services in the reconstruction communities. Additionally, employment and reemployment bases are established, returning

residents enjoy the priority of running the commercial outlets, and the provincial and municipal governments' reemployment centers set up special accounts for poor families to start their own businesses.

2.6.2.5 Educational Grants and Free Training to Raise the Residents' Cultural and Employment Skills

For economically disadvantaged families, their children enjoy subsidies for all kinds of academic education or skills training. Laid-off workers can get free employment or entrepreneurial training. For independent entrepreneurs, in addition to necessary training, the government also provides project consulting, business guidance, small loan applications, tax relief, and other services.

2.6.2.6 Expanding Coverage and Increasing Subsidies

Retirees of dissolved enterprises can get 10 years of medical insurance premiums, either from government finances or from the enterprises' sold assets. For laid-off workers who are enjoying unemployment insurance, their medical insurance premiums will be paid from the unemployment insurance. For those flexibly employed returning residents, members of zero-employment families, and laid-off workers, their basic medical insurance and pension insurance are fully subsidized by the government.

2.6.2.7 Government Guarantees for Low-Income Residents' Property Purchasing

There is access to the housing provident fund for returning needy families, irrespective of previous deposits to the fund. Small loans are preferentially provided for the returning residents to start their own businesses.

2.6.2.8 Prioritize Livelihood and Reduce the Costs of Property

Residents of demolished shantytowns are exempt from contract taxes when repurchasing property. Low-income households and especially households in difficulty are exempt from price differences due to increased costs in the area. These include fees for housing ownership certificates, registration fees, transaction fees, notary fees, and contract taxes.

2.6.2.9 Integrating Temporary Relief with Long-Term Aid

Temporary relief includes relocation and occupancy relief, temporary resettlement subsidies, heating fees reduction, employment subsidies, and social insurance

subsidies. In addition, for low-income and households in a particular difficulty, the government subsidizes a certain amount of money per square meter for the newly expanded area. Long-term relief includes relief stations, and livelihood supermarkets set up by labor unions in reformed communities and commercially viable housing portions. The income from these portions is used to subsidize rent, heating fees, property management fees, water fees, electricity and gas, etc.

Shantytown reconstruction in Liaoning carried out simultaneous construction of public facilities and municipal infrastructure in accordance with real estate standards, which guaranteed that the original infrastructure system of those industrial and mining areas could be fully docked with the city's municipal systems.

Environmental thresholds were established. A green space system, which consists of three parts: central green land, grouped green land, and garden green land, was established, with the green land ratio of the new areas being no <25 %. In addition, a garbage collection system was set, with sites scattered within a radius of not more than 70 m.

Shantytown reconstruction also demonstrated comprehensive, multi-agent, seamless management and human-oriented services, covering six aspects (economy, society, environment, housing, land, financing) and four agents (government, enterprises, social organizations, and residents).

2.7 Housing Transformation: Institutionalized Management and Standardized Services

In the process of shantytown demolitions, adequate publicity and mobilization was effectively adopted with support from governmental organizations. Through newspapers, radio, and television, the significance and goals of the reconstruction were publicized so that the residents could clearly understand the relevant policies and procedures. The government also ensured that all affected households signed the agreements for demolition and resettlement. During the process, cadres were assigned to different shantytown areas and party members to specific households, thereby assigning and assuming different levels of responsibility.

In housing developments, bid tendering and full supervision were implemented. Diverse standards were first established concerning the apartment layout and area, resettlement compensation, housing construction, and ancillary facilities. Each city organized unified bid tendering to ensure that the construction enterprises could compete on an equal footing with minimal intermediate links. Systems of project supervision and contract management were introduced in the construction process, and various divisions, e.g., discipline inspection, monitoring, and auditing, were organized to carry out all-around supervision on the planning and design, construction, use of funds, checks, and acceptance, aiming to reduce costs.

The resettlement of returning residents was conducted transparently and compensation was fairly administered. The government first made the housing allocation plans under an open, fair, and impartial principle and then publicized the plan,

procedures, and results with prominent posters. All levels of discipline, inspection commissions, supervision bureaus, notary offices, neighborhood offices, communities, and resident representatives of demolition areas collaborated for the implementation of full supervision. The demolition and relocation policies introduced were more favorable than the affordable housing policy. The returning residents could get an apartment without cost in the same area as their original housing; for the increased area, the residents merely pay the construction costs per square meter; particularly, poor households could move in initially and then get the property certificates later when they had paid for the increased area.

Through careful examination and confirmation of the reconstruction blocks, the government unified the municipal land reserves. Firstly, the municipal government assigned reconstruction tasks to district governments and the latter reported on the proposed reconstruction blocks and the number of households involved. Secondly, the leading group for shantytown reconstruction conducted field surveys according to the reports from district governments. Thirdly, district governments began thorough investigation and examination on the proposed demolition blocks, and the Municipal Property Bureau and the Urban Planning and Land Resources Bureau took the responsibility for examination and confirmation. Finally, after the shantytowns were demolished, the Municipal Land Reserve Center registers the vacant blocks for storage and market auction.

The government closely supervises the supply and utilization of land to ensure that the supplied land can be developed into effective housing as soon as possible. Under the land market dynamic monitoring system, the government publicly supplied certain information, such as plans for land supply, and the results and dates. In addition, the government conducted full supervision on the start date, completion date, and supplied other information. Those failing to start and finish the construction in accordance with the requirements of state-owned land allocation decision were subject to legal liability.

Explicit money management principles ensure the safety of funds. Liaoning sticks to the combination of unified management and territorial management, in which the Municipal Finance Bureau takes charge of raising funds, scheduling, and allocation, while the district government is responsible for the expenditure according to the project schedule and construction progress. In order to ensure efficiency and costs reduction, Supervision and Inspection Bureau of Finance and Taxation, Auditing Bureau, and Supervision Bureau conduct joint supervision in accordance with their respective duties.

In order to ensure efficient funds expenditure, a sound mechanism for fund management was established. Revenue and expenditure are managed separately. The Finance Bureau appropriates funds to main responsible bodies according to government directions, and then with the advance of construction, the responsible bodies control the specific expenditure of the funds. The Municipal Bureau of Finance set up a special account to manage the whole city's reconstruction funds, and the main bodies' responsible open separate income and expenditure accounts. Hierarchical management is also adopted. The Municipal Bureau of Finance is responsible for raising funds, allocation, and the establishment of financial

management systems. The main bodies are responsible for the payment of construction funds, relocation compensation for enterprises and residents, and the collection of individual residents' payment for the expanded area.

2.7.1 Environmental Improvement and Social Services

Strengthening the urban environmental construction and improving the natural ecological conditions was important. Shantytown reconstruction dramatically changed the original degenerated faces of those areas. Adequate public green space was planned and built. A large number of small coal-fired chimneys were removed. Chimneys demolished in Fushun City amounted to 10,000, which greatly reduced the emissions of coal ash, soot, and sulfur dioxide.

Supporting infrastructures are improved to enhance community living environment. All the new communities formed after the reconstructions are in new apartments well equipped with water, electricity, gas, heating, Internet, communications, and other supporting facilities. There are also garbage stations, schools, shopping malls, and medical centers nearby. Shantytown reconstruction paid much attention to the improvement of the community management, e.g., Fuxin City carried out the construction of "ten-minute service circle" in newly built reforming communities.

There was a focus on the rational use of urban space to improve the urban investment environment. The provincial government linked shantytown reconstruction with urban development and land resources integration and took into consideration the city's construction, development, and function zoning. It also made great efforts to improve the natural and humane environment and to optimize the urban investment environment.

Aiming at improving the quality and skills of residents, great emphasis was placed on education and training. The government gives the shantytown children full protection of their right to education. For those economically disadvantaged returning families, the government subsidizes their children's academic education or skills training with appropriate funding. Training of vocational skills for the returning residents is another focus of the government. Special attention was paid to vocational and technical training for the low-income or unemployed residents. For instance, over 50 qualified training institutions in Benxi City provided free training for returning residents.

Efforts were made to improve the healthcare conditions and guarantee the residents' mental and physical health. The government attached significant importance to improving the shantytown residents' participation in old-age insurance and medical insurance so that all residents can enjoy the sense of security and public medical services. The provincial government provides social insurance subsidies for aged disadvantaged groups; financial departments at all levels give full subsidy of medical insurance according to the average wage level and the deposit proportion set by the local government. Health service systems were established in those reformed new communities, with health service centers as the main body and

the health service stations and other primary health institutions as supplements, integrating them all with the medical insurance agencies.

The security systems were strengthened to ensure good social order. In reformed communities, the government set up a number of new police stations and every community is equipped with a police office and several officers. They also established public service positions, volunteer teams of party members and organized security patrols.

The government actively promoted the community's cultural development and enhanced the residents' sense of belonging. The communities carried out art propaganda activities to promote community cohesion. The community party committee coordinated the collection of funds, purchased a variety of musical instruments, established Yangko dance teams, Aerobics teams, art propaganda teams, choir teams, etc. Their self-directed programs greatly enriched the cultural activities of the once shantytown residents.

2.7.2 Economic Development: Employment Generation

After the reconstruction, the government took active measures to build platforms to promote the employment of the population. Laid-off workers are provided with free employment and re-employment training, employment information, job fairs, and employment opportunities as well. The government guarantees sufficient supply of positions, especially those of public services. Ratios were implemented during course allocation in the enterprises, which employed returning residents. Residents of zero-employment households or of other disadvantaged groups can enjoy the priority of governmental support.

There were promises of financial support to encourage residents to start their own business. For the shantytown residents who wish to establish businesses, the government provides free training and privileged small loans. Additionally, the government establishes "one-stop" business services, which encompasses project recommendation, agent licenses, and venue provisions. For instance, the government provides vending booths or stalls in some governmental properties and eligible residents can make use of them to start their business free of charge for the first 2 years.

Shantytown reconstruction and urban transformation were connected with the upgrading of industrial structure. Being one of the resource exhausted cities in Liaoning, Fushun oriented its urban transformation to the pattern of "three bases and one center," focusing on the implementation of industrial clusters strategy, Shenyang and Fushun co-city strategy, eco-city strategy, modern service industry enhancing strategy, and circular economy strategy. Fuxin City took sustainable development as the most significant goal of industrial transformation and accelerated the pace of industrial restructuring.

The province set up a series of residents' organizational systems in the reformed new districts, such as community meetings, residents' congress systems,

democratic councils, security defense teams, sports teams, and citizen ethics councils, all of which rendered important platforms for the residents to participate in the community management. Some communities even elected primary and secondary school children as the community conservators, promoting their parents' concern and participation in community affairs. They held community forums and shared community or family diaries. The residents were encouraged to take part in community affairs and implement self-management.

In the reformed communities, all kinds of cultural and recreational groups have been established to enrich the residents' spare time activities, e.g., Yangko dance teams, Aerobics teams, Taijiquan teams, and choir teams, which not only helped the returning residents create a new life in the new districts but also changed the mental outlook of the shantytown residents.

Contributions from enterprises played an important role in the shantytown reconstruction of the province. During the "nine-in-one" financing process, enterprises themselves raised an indispensable amount, and even "the part donated by the society" and "the part assisted by work units" consisted of the active contributions of enterprises. After reconstruction, enterprises positively responded to the preferential policies of the government, rendering employment opportunities to the returning residents, especially those from zero-employment families.

Being the main body of market operation, enterprises were the major participants of shantytown reconstruction, and the combination of government-led and market-oriented operation was one of the prominent features. Related enterprises played a key role in both the pace and quality of the construction. The shantytown reconstruction project started, delivered, and was finished all within the same year, which was unprecedented in architectural history. Despite the extraordinary construction speed, maximum quality was attained. In addition, many enterprises supplied building materials for the reconstruction project at the cost price and to some extent ensured the low price of the new apartments.

New communities became the organizational core of the formerly shantytown residents. Shantytown reconstruction was closely connected with the construction of new communities. Relying on party organizations, significant attention was paid to establishing a new life for the returning residents. The province established a total of 290 new communities, which not only formed a "tangible, gridded, digital, and full-coverage" pattern of community-based organizational structure, but also improved the urban management model for the solution of livelihood issues.

Labor unions functioned as strong assistants to the government. First, labor unions helped to publicize the policies and to reflect the voice of the masses; with their help, the demolitions and reconstructions were smoothly carried out; they also conducted surveys of project cost, participated in policy formulation, promoted ideological mobilization, and supervised the quality of the reconstruction project. Second, labor unions did a lot of work to help the disadvantaged groups. They carried out in-depth investigations, established working mechanisms to strengthen the management of relief funds, and closely followed the reconstruction progress in order to ensure timely relief. Third, labor unions established long-term mechanisms to help the needy families. They set up labor union aid stations in the

communities, helping the disadvantaged residents become re-employed, rendering medical services, and establishing fixed relief contacts with particular difficult households.

2.7.3 The Role of the Party and Government Organs

In the province's shantytown reconstruction, the party committee played the decision-making and leadership role, while party member cadres were given exemplary roles, which mutually ensured the success of the reconstruction project. Shantytown reconstruction was a major decision made by the Liaoning Provincial Committee and was implemented as the province's "top one" livelihood project. In the process of demolition and relocation, party member cadres were assigned with full duties to different shantytown areas and households to ensure the smooth progress of the project. When distributing the new apartments, many party member cadres gave up their own opportunities repeatedly, which embodied the progressiveness of the party members.

Party and government organs always adhered to the principle of serving the people and benefiting the people, which fully displayed the leading role of the government. Each related municipal government set up a leading group for shantytown reconstruction headed by the principal leaders of the municipal government and a leading group office. This included the Municipal Development and Reform Commission, the Housing and Urban-Rural Development Commission, Municipal Bureau of Finance, and other relevant departments all having roles in the unit and taking a certain level of responsibility. Thus, the province formed a complete organizational system. Various departments took the initiative to open up "green channels" for shantytown reconstruction by providing preferential policies and conducting centralized processing, door to door services, on-site offices, etc., to improve efficiency. As the shantytown reconstruction project was a major systematic government-led project, the provincial government not only shouldered the responsibility of financing guarantee but also made great efforts to benefit the people through reducing and exempting related taxes in both demolition and resettlement.

Methodically, the "people-oriented" principle, the holistic approach, and the idea of promoting the project comprehensively, systematically, and sustainably were applied to the shantytown reconstruction.

2.8 Summing Up

Shantytown reconstruction aimed at promoting human development and ensured everyone shared in the fruits of development. Additionally, in adherence to the standpoints of comprehensiveness, general connectivity, and continuous

development, shantytown reconstruction coordinated all aspects of the relationship and correctly handled all kinds of complicated matters. In particular, these were the relations between different sectors, different regions, and different industries, the relations between economic development and people's living improvement, the relations between the immediate and long-term interests, the relations of shantytown reconstruction and urban construction, and the relations between government guidance and market operation, etc. Only by this means, did the reconstruction achieve the comprehensive goals of social, economic, resource, environmental, cultural, and political benefits.

As for the strategy and planning, shantytown reconstruction adhered to the principle of "overall integration and balanced coordination" and effectively combined shantytown reconstruction with the city's economic and social development.

The reconstruction was not just to solve the housing problems for shantytown residents, but a major project involving reform, development and stability, as well as social harmony. Thus, during the process, the government gave full consideration to the relationship between shantytown reconstruction and the city's economic and social development, establish overall planning, and take measures to achieve a win-win effect. As one of the systematic livelihood projects, shantytown reconstruction should comprehensively consider the functional layout of the environment. These include leisure, greening, and public facilities, taking into account the subsequent development of the communities with a long-term perspective, take reconstruction as a turning point in improving the supporting infrastructure, strengthen the public service system, and enhance the cultural, education, health, and social security levels. In addition, shantytown reconstruction had been people-oriented, fully considering the relationship of the shantytown reconstruction plan with the overall urban planning and industrial layout, to improve government's functions of serving and administering the society. The government conducted scientific demonstrations to ensure the logical location and scientific planning of the shantytown reconstruction project and made every reformed shantytown a model which does not solely benefit the residents within but also plays a leading role in the area. The projects expanded the urban development space, improved the urban landscape and living environment, and laid a solid foundation for sound and rapid economic development. Finally, it achieved a positive interactive cycle of shantytown reconstruction and social–economic development.

In terms of systems and patterns, shantytown reconstruction involved "government guidance and market operation," which was aimed at overcoming the defects of both government failure and market failure and achieving the optimal allocation of resources and the full demonstration of participants' enthusiasm.

The implementation and success of the shantytown reconstruction is closely connected with the government's sense of responsibility, determination, and courage. Housing development and construction cannot be separated from the market either, but the market is not capable of solving all the problems. Government guidance ensures the integrated arrangements of the shantytown reconstruction costs and revenue. In other words, the government can apply the gains from developing

commercially valuable areas to the reconstruction of commercially valueless areas, thus maximally protecting the interests of the residents and avoid over pricing by the developers. In addition, government guidance can also achieve rational planning and scientific layout, so that shantytown reconstruction can be effectively combined with the improvement of urban functions and appropriate landscaping. Market operation, on the one hand, can lead to profit maximization and further improve the operational efficiency of shantytown reconstruction.

Through changes in institutions and policies, the government initiated comprehensive measures to promote improvements to ensure the shantytown residents can "move in easily, live in comfort, and provide in stability."

The emergence of shantytowns was not only about the shortage of housing, but also involves a series of problems including poor infrastructure, low-income levels, and city segregation. To completely solve the shantytown problems, the government considered the overall picture and took comprehensive measures. To ease policy implementation, shantytown reconstruction established a series of related policies concerning land, financing, employment, housing property, and social security to ensure that these policies are mutually integrated. The management of change involved decision-making, mobilization, planning, relocation, construction, community management, as well as long-term mechanisms to ensure that the residents can enjoy a stable and improved life.

As for management and services, "orderly and standardized humanistic self-governance" has been implemented to ensure the fairness, justice, and openness of all aspects of the shantytown reconstruction project.

Shantytown reconstruction involves a wide range of heavy tasks. Without a scientific management system, the chances of success are slim. Therefore, a whole set of detailed management mechanisms to ensure fairness, justice, and openness for both the preceding mobilization, the reconstruction process, and even for the succeeding community management were instituted. Sets of institutional systems are also needed concerning the process of shantytown demolition, residents' returning and reliefs, the supervision of land, funds, and apartment quality, etc. The government considered problems from the perspective of the residents, solved their practical difficulties, improved the community residents' meeting system and the resident congress system, and mobilized the enthusiasm and initiative of the residents to participate in community management. In addition, it placed emphasis on the spiritual and cultural construction of the community, as well as the residents' housing conditions and the community's material environment.

Overall, the shantytown reconstruction required strong political will to make decisions, organize, and mobilize forces of all aspects, and to unite the society as a whole; all related departments were highly coordinated and strictly implemented and promoted their various tasks. This requires the participation of enterprises not only in the establishment of scientific project planning, but also in the management of the project and the reasonable allocation of resources in accordance with the laws of the market. It also required the participation of the society as a whole. The most outstanding feature is that the government played a powerful role in the

establishment of strong policies to benefit the people and ensured the property rights of the people; consequently, the government won the hearts of the people. The province successfully explored a new pattern of "city management and market-oriented operation," effectively solved the funding bottlenecks for infrastructure facilities, which ensured the smooth progress of the project.

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Chapter 3
Financing Development of Shantytowns Upgrading

3.1 Introduction

This book provides a systematic account on the financing of urban reconstruction in Liaoning shantytowns. Based on a review of relevant documents and practices in China and other countries, the chapter provides an account of events most especially the mechanisms for fund-raising, fund-using, fund-repayment, particularly as it relates to experiences, problems and enlightenments. In fund-raising, Liaoning's new local leadership team played a decisive role in establishing an effective financing platform. The leadership team found nine financing channels which were christened "Nine in One" and further simplified into three types of channels, namely the government, market and society. Of the three types of financing channels, the role of government capital is critical in that it guides and leverages market and social capital in addition to providing direct support for the shantytowns. In fund-using, Liaoning took some good measures at an early stage in order to prevent and control the interception, misappropriation and misuse of funds. These include "closed operation", "the order of defray" and "strict supervision". Faced with huge debt for large-scale shantytowns, the province "pulled the wealth increment to balance the stock of the capital debt." Yet, some problems remain unsolved; one is that the institutionalized financing platform needs to be improved, another is the lack of funding for livelihood condition improvement particularly credit funding, the third is the payment pressure which needs to be mitigated.

Some of the difficulties in the smooth reconstruction of Liaoning shantytowns are the problems of investment financing for this rather large-scale project. This section seeks to investigate, analyze and summarize the relevant literature on both the domestic and international experiences, employed in the reconstruction of Liaoning shantytowns, including fund-financing channels, the use of funds, and payment for debts among others. This chapter consists of five parts; the first is literature and existing practice; the second highlights the financing factor in the formation and

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_3

evolution of the shanty town before 2005 when large-scale upgrading of shantytowns took place; the third entails useful experiences in shanty town upgrading since the year 2005; the fourth deals with some of the problems of the shantytowns which are yet to be solved; while the fifth aspect presents the conclusions.

3.2 A Review of Domestic and International Practices

Studies on slums (similar to shantytowns) started from the mid-nineteenth century, with the most prominent case being the slums of London in England. Since the British pursued a free capitalist economy, the dominant view in that period was either advocating the involvement of the commercial capital, or supporting government intervention. The role of government in the slums became evident from the mid-1870s; one example is "the Cross Act" promulgated by the United Kingdom in 1875, another case is "the Workers' Housing Law", also issued by the United Kingdom in 1890. The "Greenwood Housing Act" in 1930 was the first to propose financial assistance for slum clearance. After the Great Depression in the 1930s, American President, Roosevelt being one of the representatives, was also aware of the positive role of fiscal funds in response to slums' upgrading. Since the beginning of the 1970s, some studies as well as government laws and policy documents have linked active government policy to direct private capital participation in slum upgrading. For example, both "the Equal Credit Opportunity Act" and "the Community Reinvestment Act" issued by the United States in the 1970s urged commercial financial institutions to support the construction and allocation of housing projects for Low-income families including those living in the slums. One of the UN-Habitat research reports in 2003 also believed that while the private financial system could not lend money to the poorest groups, but by effective system design, the low-income families could obtain commercial funds to achieve their basic right to housing.

In China, literature shows that multiple financing channels are the current mainstream sources of housing funds for low-income earners, including the shantytowns' housing projects (Song Bo tong 2001; Zhou Jinsheng 2010). The literature of some of the laws and regulations about housing financing also supported this assumption. Since the housing system reform of the early 1990s, the Chinese government promulgated a number of regulatory documents, some with diversified financing channels in order to solve the financing problems of housing security. The Chinese government issued a specific housing document in 2009 that listed many financing channels and measures including fiscal subsidies, bank loans, corporate support, masses-self raising, operation of the market, and so on, that could assist with the reconstruction of the mining shantytowns. Domestic and international policy documents on financial regulations and strategies for the solving of housing problems of the slums (shantytowns) and other kinds of housing projects for low-income people indicate the use of multiple channels of financing; that is inclination to the diversification of financing rather than a single channel process.

The financing practice of many countries and regions in response to slums upgrade in the early period was generally through a single channel that is through resorting to charitable contributions, or relying on government fiscal, or only market capital playing the unique role. With the evolution of the economic and political system, and with the update of concepts and methods of urban governance, comprehensive channels, including that of private stakeholders and social funds are gradually utilized. A typical case of charitable contributions for slums was the London's practice from the 1840s to the early Twentieth century. The Government's fiscal-led case only began in the 1870s in London, England. However, the limited nature of charitable contributions at the beginning of the 1870s, made the British Government settle the problems with fiscal capital. From 1875 to 1905, government budget spent on cleaning up the slums was up to £2,026,000. Also in the United States of America after the Great Depression of the 1930s, the government used fiscal funds to solve the problem of the low-income populations, which included the upgrading of the slum housing.

In response to slums' upgrading, developing countries and regions, such as Brazil, Thailand, Singapore and Hong Kong initially depended on government funds from fiscal or other government channels. One of the typical examples is from Singapore; since 1950, Singapore enforced the implementation of a provident fund system, 80 percent of which was used for construction and consumption of the indemnificatory housing, and so far, Singapore has been the only country that has successfully resolved the problem of slums, shantytowns and houses for low-income people mainly through single channels of funding from the government. Another case is that of Brazil who resorted to financial support from international financial institutions in addition to the governmental fiscal funds in response to the problems of the slums. These international financial institutions included the World Bank and the Inter-American Development Bank. From 1995 to 1996, the Inter-American Development Bank provided more than 200 billion U.S. dollars of preferential loans for slum upgrading programs of Rio de Janeiro and Sao Paulo.

Since the early 1960s, the United States, Britain and other developed countries used diversified means, such as fiscal relief, fiscal assistance, low-interest loans, rental subsidies and other preferential policies to inspire and guide the commercial and private capital to participate in the clean-up and transformation of slums. From the 1980s, Thailand, Malaysia, Brazil and other developing countries introduced some policies that encouraged commercial or private funds in the upgrading of slums or shantytowns.

In all the channels of financing support listed above, social capital refers to charitable donations while fiscal funds mainly include fiscal provision, fiscal assistance, tax incentives, fiscal subsidies, fiscal loans, provident fund loans (such as Singapore's housing provident fund loans and buyers Provident Fund loans), government guide funds (such as urban development funds in Thailand), credit guarantees or warranties (such as that provided by the U.S. Federal Housing Authority and the Veterans Bureau), tax increment financing (in U.S.), rental coupons (for example American rental coupons), the Home Ownership scheme fund(in Hong Kong), the Tenants Purchase Scheme Fund (in Hong Kong), employee funds accumulation savings incentives (in Germany), housing savings incentives (Germany),

and urban community development funds. Commercial funds include the funds owned by participating enterprises, commercial loans from financial institutions, corporate equity or debt financing issued by participating enterprises.

Despite the practices above, many countries and regions have still not been able to effectively resolve the housing security financing bottlenecks. As a result, the success achieved in the slums is relatively low compared to the increase in number of people living in slums in these countries and regions, particularly in Africa, South and East Asia. The main reasons are as follow: first, these countries have not established an effective institutionalized housing financing system, and thus have not successfully mobilized and employed funds from market and society to participate in the construction and consumption of housing security. Apart from the fact that the government did not expend much of its fiscal funds on housing security in these countries and regions, no effective short-term policy measures were also put in place to mobilize capital in the market. In developed countries, before the financing system for housing security was well established, the government financial investment was up to 5 percent in the proportion of the budget expenditures; however in developing countries, this figure was 2 percent, and even lesser in those countries in which slum problems were worse, this is also true with investment from the market.

In the case of China, the main financing practices for housing security can be summed up as "Government + market + society". From the vast majority of existing cases, the Chinese government used the 'government-led, market-operating and community-participating' approach. In other words, a wide range of the financing channels, including that of the government, market and society were used. With support from multiple sources of financing, China's security housing construction has gone up, especially since 2008. The amount of security houses started in 2011 reached 10 million which is the highest so far when compared to previous years, and the total amount planned between 2011 and 2015 will be up to 36 million. Important progress has also been made for the shantytowns in China, particularly in Liaoning province. Although the Government's financial investment has increased substantially, however, an effective system of financing is yet to be established. In addition, China has not yet formed a law and regulation system as it pertains to housing security, and has mainly relied on the short-term policies being made by the people in leadership, as these people play a particularly critical role in establishing an effective housing financing strategy (Table 3.1).

Table 3.1 Proportion of housing security spending in recent years, the central public finance expenditure budget (Unit: 100 million Yuan, %)

	Expenditure	Housing security	Proportion (%)
2008			
2009	43865	493.01	1.12
2010	46660	992.58	2.13
2011	54360	1292.66	2.38
2012	64120	2117.55	3.30

Modified from the Ministry of Finance website of the People's Republic of China

3.3 The Financing Factor of Shantytowns Before 2005

Liaoning shantytowns gradually evolved from cottage areas, and the evolving period of the shantytowns before 2005 can be divided into three stages. The first is the planning period after the People's Republic of China was founded, in which settlements mainly existed in the form of cottage areas. The second is market-oriented based on the condition of the reform and opening up policy in which the cottage areas gradually evolved into shantytowns. The third is the period from 1987 to 2005 in which the reconstruction of shantytowns began though the progress was slow. In these three periods, the financing factor showed some unique features due to different housing patterns.

3.3.1 The Planning Period: The State Welfare Housing System

After the People's Republic of China was founded, the planning system was imposed under the leadership of the Communist Party of China, and the welfare housing system was implemented. The basic principle of the allocation of housing was performed in accordance with the administrative level. Various types of agencies were established in accordance with the planning system, including the administrative, institution-units and business-units, which adopted the method of unification of construction and allocation of houses. All national agencies had similar house-living conditions. Under this system, the various types of agencies with different functions were appointed on the same administrative level and had the same type of houses, so did the general staff. As for the construction of the houses, housing funds were given to these agencies, no matter their nature; houses were then built and allocated in accordance with the same standard. From the macro level, the state pursued a strategy of "accumulation is more important than consumption", therefore the vast majority of units followed the habitable principle in housing construction; the workers of the various agencies thus lived in bungalows and simple low-rise buildings. Relatively for Liaoning province, the housing conditions in the state-owned and collective industrial and mining areas were good even though the houses were basically cottages, and large and small mining cottage areas. In this period, the housing areas have mixed development of with some shantytowns.

3.3.2 The Marketization Period: Evolution of Shantytowns

China entered the new era of reform and opening up since 1978. Commercialization, marketization and urbanization became the parts of new objects of the country. As a result, Liaoning's state-owned industrial and mining

enterprises, especially resource-exhausted mining enterprises gradually lost their competitiveness and thus gradually slid to the edge of the market and urbanization. At the same time, the housing welfare system in which houses were built and allocated has gradually transformed towards a commercial system. Deriving from this system, houses were acquired in two ways; one was that houses were constructed by market-oriented enterprises; the other was that houses were bought on the basis of personal income. This is called the unitization and marketization of the state housing welfare system. In this process, gradually declining businesses lacked the capital and credit facilities; also the workers of these enterprises were poor and lacked credit financing capacity, thus lacking corresponding abilities to improve their housing conditions. Industrial and mining enterprises in Liaoning shantytowns fell into this category, these companies are almost bankrupt enterprises. Not only were the enterprises without money for housing improvement, the vast majority of their staff were also generally cash-strapped, and therefore could not improve their housing conditions and had live in the dilapidated cottages. Many of these cottages could not meet the needs of the ever-increasing population, especially the marriageable population. As a result, cottage areas were gradually devaluated to shantytowns. While lacking funds for housing, the funds for construction and maintenance of public service facilities were also scarce, thus the environmental conditions of shantytowns deteriorated.

Clearly, the formation of shantytowns resulted from market failure under the conditions of reform and opening up, and it was necessary for government to intervene to solve the problem of shantytowns. In fact, since 1987, Liaoning local government started to pay attention to the shantytowns and plan for their transformation but as stated earlier, the shantytowns progressed slowly for a long period of time; so no one knew where to begin in transforming large-scale contiguous shantytowns. From a financing perspective, this could be attributed to the lack of national level financing policies and relevant laws and regulations which guide shantytowns; the limited fiscal resources of the local government; and the hard constraint against commercial financing service for the shantytowns.

3.3.3 China's Financing Policies Laws and Regulations for the Shantytowns Before 2005

There were over time, series of laws on the protection of low-and middle-income housing, the first involving the shantytowns and its financing was the GuoFa (1994) 43—"State Council on Deepening the Urban Housing System Reform". In part V on "speed up the development and construction of affordable housing", it reads "… under the premise of a unified plan, give full play of all sectors to accelerate the transformation of urban dilapidated housing". Obviously, old and

dangerous urban houses in this article referred mainly to shanty rooms or cottages, and the transformation of such houses belongs to affordable housing development and construction areas. The document also mentioned the problem of financing support, but restrained from talking about the underdevelopment of China's housing finance; the document only gave some general recommendations, one was that the financial institutions should support the development and construction of affordable housing with credit.

The earliest direct reference to the shantytowns file is "GuoFa [2007] 24" "State Council on some opinions of the Settlement of the housing difficulties of urban low-income families". Article 13 reads "Accelerate the contiguous shantytowns, and for this, the city government should formulate a transformation plan according to local conditions, which meets the following requirements: The housing difficulties of the tenants are properly resolved, housing quality, residential environment and the supporting facilities are significantly improved, and the burden of the needy families is at a reasonable level." The file also put forward tax relief policies for the relevant land use, housing development and other aspects, but this did not involve financial support policies.

The first specific shantytowns' file was "JianBao (200) 295"—″On guidance to promote the city and the state-owned mining shantytowns". It puts forward systematic requirements for every aspect of the shantytowns, and dedicated a section to identify and list the many financing channels and measures including fiscal subsidies, bank loans, corporate support, personal capital, etc. Unfortunately, this file came after four years of large-scale transformation of Liaoning shantytowns, therefore the file only partly referred to the Liaoning practice and experience.

Table 3.2 shows that from 2001 to 2005, the fiscal size of Liaoning Province and how the municipalities increased slowly because the general budget revenue expenditure for the shantytowns was then occasional. The total fiscal expenditure in the 4 years was approximately 1 billion, and for only two cities, Shenyang and Anshan had the expenditure; the expenditure ratio of the current fiscal revenue was very low, less than 1 % in most years.

Table 3.2 Financial expenditure of the shantytowns accounting for the current fiscal revenue in Liaoning and some of its administered cities

	2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)	2008 (%)	2009 (%)	2010 (%)	2011 (%)
Liaoning							0.03	0.08	0.31	0.52	1.84
Fushun									1.37	1.26	1.45
Tieling							5.99	2.45	1.24	0.12	0.07
Shenyang	0.01	0.004	0.29	0.45	2.90	1.56	3.39	1.56	1.30	0.71	1.50
Anshan			1.00	0.80	0.48	0.62	0.25	0.97	0.88	0.00	0.45
Huludao					3.86	2.78	0.47	0.21	0.00	0.66	10.39
Jinzhou					2.97	4.27	2.31	0.74	0.62	0.82	3.07
Panjin					1.16	1.20	2.02	2.44	2.84	2.71	3.21

Modified from the People's Government of Liaoning Province

Given the nature of quasi-public goods with no commercial value, it was not surprising that the shantytowns could not to attract commercial financial support, whether in the demolition, construction or housing placements. Involvement in shantytowns for commercial financial funds is at a great risk as it was possible for them not to make profits and high credit risks are equally involved. Due to this, it was necessary for the government to establish a revenue compensation mechanism and credit enhancement arrangements in order to inspire and guide the commercial financial institutions to actively participate in funding shantytowns. From 2001 to 2005, Liaoning hardly did this and thus almost no commercial financial institutions were interested in the case of the shantytowns.

Lack of relevant national policies, laws and regulations, too few local financial expenditure, financial constraints and other factors combined to form a huge limitation to the effective promotion of shantytowns; so also to other mining shantytowns. At the backdrop of the market economy, such a predicament can easily lead housing security to fall into the trap of market failure and the absence of government. In accordance with the foregoing, in the conditions of the more developed social charitable organizations and community mutual aid organizations, charitable funds (such as in the United Kingdom) and mutual funds (such as in Germany) always give a definite alternative. In addition, a special type of leadership team may solve the above predicament and make effective financing decisions. Objectively speaking, prior to 2005, Liaoning lacked such leadership, and therefore did not break the foregoing constraints, and thus made ineffective financial decisions.

3.4 Finance Experience of Shantytowns Post-2005

In 2005, of the factors which posed financial constraints to Liaoning shantytowns, were “the state Policy law and regulation”, “fiscal revenue”, and “financial channel” which did not change; however, the leadership factor had a significant change and this became a decisive variable for the large-scale contiguous shantytowns. In a very short period of time, the new leadership established an effective financing platform; including the fiscal support from the state province, municipal and financial support of the State Development Bank, effective market-oriented operation and a wide range of social participation. Its efficiency of mobilizing financial resources was so amazing that from 2005 to 2011, the platform raised 732.46 billion Yuan for 4,000 million square meters of the shantytowns (see Table 3.3).

3.4.1 Diverse Channels of Financing

The leadership team played a decisive role in the shantytowns financing arrangements; it established effective financing channels and summed them up as “Nine in One” namely nine channels respectively from “government-subsidy, policy-relief,

Table 3.3 Shantytowns' area and its financing scale from 2005 to 2011

	Residential area	Matched public area	Areas of green environment and small matching	Housing costs	Matching fee for public area	Expenditure for green environment and a small matched area	Total financing
Transformation of area (ten thousand square meters)	4,402	528.2	4390.2				
Financing amount (100 million)				475.4	10.56	246.5	732.46

Modified from the People's Government of Liaoning Province

enterprise fund-raising, personal fund-raising, market-operating, bank-loaning, social-contributing, unit-helping, and project fund-saving". Apparently "Nine in One" covered almost all available resources from various aspects and links.

This chapter further simplifies "Nine in One" into three types of channels: government channels, market channels and social channels, thus "Nine in One" can be summarized as the "Government + market + society". Government channels include government subsidies, policy relief, policy-based lending in the channel of bank-loaning, help from the party and government agencies in the channel of unit-helping, funds from party and government agencies in the channel of project fund-saving. The corresponding funds include the fiscal subsidies, and financial policy loans, land transfer relief, management and tax relief and savings of the project funds due to the factors of the party and government agencies. Based on the data provided by Liaoning, of all the funds listed above from government channel, the fiscal subsidies and financial policy loan were accurate and acted mainly as the source of capital of the shantytowns, while the others did not. The data of fiscal subsidies and loans from policy banks made up the estimation of the fund from the government channel and this totaled up to 283.21 billion Yuan.

Social channels include "social contributions", "project fund-saving" derived from the non-governmental factors and "unit-helping" derived from non-party and government agencies. These funds include that of corporate sponsors, charities, individual donors (including friends and family sponsorship), non-interest bearing private lending, and mutual assistance and cooperation funds.

Market channels refer to enterprise fund-raising, personal fund-raising, market-operating and commercial bank loans in the channel of bank-loaning. The corresponding funds include the self-financing of the commercial enterprises and their own funds involved in the shantytowns, personal capital, funds from the sale of the remaining houses, the fund of the land transformation, commercial bank loans, special bonds and commercial private lending (interest-bearing loans). "Personal capital" mainly refers to that paid to purchase more areas than that of free use in accordance with the policy. "The fund from sale of the remaining houses" refers

Table 3.4 Capital amount and proportion from three financing channels in Liaoning shantytowns

	The total financing	Government	Weight	Market	Weight	Society	Weight
Amount and weight (100 million, %)	732.46	283.21	38.67	413.02	56.33	36.23	5

Modified from the People's Government of Liaoning Province

to the sale of the remaining part of the housing that were commercially built after they have finished selling to the squatters in the shantytowns. "Commercial bank loans" refer to that borrowed from commercial banks in the shantytowns. The loans include that borrowed by participating companies, government financing platform for the shantytowns, and personal mortgaging for buying houses. On the basis of financial information provided by Liaoning government, a considerable portion of the funding gap is filled by commercial liabilities. For instance, the data provided by the Liaoning Province Development and Reform Commission, Ministry of Finance and Housing and Construction Office, as shown in Table 3.4 reveals that total direct financing for the funding of shantytowns from 2005 to 2011 was up to 732.46 billion Yuan, of which the fund from the government channels was about 283.21 billion Yuan, a weight of 38.67 %. Social channels accounted for 5 % of the total source of finance while market channels accounted for 56.33 %.

In summary, of all the capital from the three financing channels, "Government + market + society", "market" channels account for the highest weight of 56.33 %, followed by 38.67 from government sources and then the "society" with a weight of 5 %.

In the absence of national level institutional guidelines, Liaoning Province, depending on the special policy of the special type of leadership team, effectively mobilized funds from three types of financing channels of "government", "market" and "society", with more funds from the market and government channels, thus effectively overcoming the difficulties encountered in getting capital on a large scale for funding of shantytowns.

Experience has shown that high level of liability and low fiscal revenue of local government without effective supervision, when large-scale capital is handed to the local government it is prone to interception, misappropriation and misuse. Such problems could have happened to Liaoning shantytowns, so the province and its administered Prefecture-level cities earlier put in place some measures to prevent abuse and control the situation. The measures had three characteristics; one was closed operation, the other was the order of defray authorized the third was strict supervision.

Closed operation aims at establishing a firewall against interception, misappropriation and misuse of fund, so that the limited funds could be used mainly for the shantytowns. For this, the most important measure was special-purpose account management. The account was set up and managed by the Municipal Finance Bureau.

The order of defray authorized implies that the funds should be used after being countersigned by the relevant functional departments of the city government. In some cities such as Benxi, it was the mayor who signed before payment. The defray document generated was named the order of defray. This was the second firewall against interception, misappropriation and abuse of the shantytowns' funds.

Strict supervision meant that the national, provincial, municipal audit institutions conducted regular specialized audits of the shantytowns' funds in order to detect problems as early as possible and then took effective measures to prevent irregular and illegal activities in the use of the funds. This was the third line of defense against misappropriation and misuse of shantytowns' funds.

While reconstructing 4,000 million square meters of housing through the promotion of large-scale shantytowns in a short period of time, Liaoning owed several hundred billions Yuan of debt, which was a great challenge to the province and its administered municipal government. To solve this, they pulled the wealth increment to cover and balance the stock of the capital debt, which meant that while promoting the shantytowns effectively, it tried hard to put in place industrial restructuring, urban transformation and stimulation of investment innovation and consumption, and thus achieve the rapid growth of the GDP fiscal revenue personal income and the total wealth of the whole society. Accordingly, the debt owed in the shantytowns was solved easily; the shantytowns thus became the power factor rather than the constraints of economic and social development in Liaoning.

Table 3.5 shows that fixed asset investment, real estate investment, and fiscal revenue increased in a substantial growth rate in Liaoning Province from the year 2005. The growth rate of fixed investment and real estate investment was more than 30 % in almost all the years, and the average growth rate of fiscal revenue from 2005 to 2011 was approximately two times that from 2001 to 2004. Such a high growth rate greatly increased the wealth, and thus enhanced the ability to pay debts owed due to the reconstruction of the shantytowns in the province and its administered cities. From Liaoning-provided information, the repayment fund for the debt came from municipal fiscal revenue, the gain of land transformation, the sale of the remaining housing in shantytowns and the spread of the sale of squatters-expanded area which exceeded the standard of the government; though most of the funds came from municipal fiscal revenue or the gain of land transformation. In fact, the vast majority of cities are scheduled to repay the debt while only a few of the cities were incapable of paying back.

3.4.2 Pending Financial Challenges

Largely constrained by the lack of the national legal and regulation system for low-income housing protection, the practice in Liaoning shantytowns was supported by strong short-period policies of special types of leadership teams. This provided the chance for the leaders to construct local systems and offer

Table 3.5 Fiscal revenue fixed assets and residential investment in Liaoning Province from 2001 to 2011

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Fiscal revenue (100 million)	370.4	399.7	447	529.6	675.3	817.7	1082.7	1356.1	1591.2	2004.8	2640.5
Fiscal revenue growth rate (%)		7.91	11.83	18.48	27.51	21.09	32.41	25.25	17.34	25.99	31.71
Fixed assets investment (100 million)	1418.4	1605.3	2082.5	2980.5	4204.4	5689	7435.2	10016.3	13074.9	16043	17726.3
Fixed asset investment growth rate (%)	11.9	13	29.7	43.1	40.1	34.8	30.7	34.7	30.5	30.5	30.00
Total residential investment (100 million)					614.1	839	1165.7	1575.1	1932.9	3465.8	3413.4
Residential investment growth rate (%)					24.2	36.5	39	35.1	22.4	31.5	37.6

Modified from the People's Government of Liaoning Province

recommendations to the national legislation system on how to finance housing and improve the means of livelihood of the low-income people.

In this regard, the province has made progress; one valuable way was by leveraging the commercial credit and business investment with the fiscal subsidies and CDB capital, but it is just a preliminary attempt, and with the CDB moving towards commercialization in 2008, the fiscal subsidies were left to be only one of the ways of generating finances. Another valuable case was that municipal labor unions lent small amounts of money to those laid-off workers who had the idea of starting their own businesses. In spite of these valuable performances, work is still in progress to improve these ways of financing.

The relevant laws and regulations which need to be improved consist of fiscal funding, policy financing, commercial financing and social fund-raising. Among them, the most important thing is how to construct an appropriate policy financing platform to guide and support commercial and social capital in order to support low-income people, including the squatters and to improve their housing and livelihood conditions. Liaoning government therefore needs to pay attention to the following areas: regulations guiding security of housing of mining shanty areas, regulations guiding how to finance the construction and allocation of mining shanty areas and credit supporting regulations for the mining shanty town residents.

The shantytowns' sources of funding can be divided into two parts, namely living condition improvement fund and livelihood improvement fund. From the data provided by the Liaoning province, the fund to improve the living conditions of squatters could be guaranteed, but the fund to improve livelihood conditions still needs to be given more attention, in particular the lack of sources of credit funding. According to a survey analysis report of shanty town residents in Liaoning province, a considerable part of squatters needs credit support, but in fact the fund for livelihood condition improvement came substantially from the administrative institutions, such as the Civil Affairs Bureau, Federation of Labor, Human Resources and Social Security and other local government agencies. The funds from these institutions include the fiscal funds, charitable donations, lottery distribution income, etc., with very little money from the credit channel. In a particular scenario, a few of the laid-off workers started their own businesses with borrowed money from the Employment Bureau of the labor unions which belonged to government channels but not commercial channels. Another thing was that the number of financial institutions located in the shantytowns were very few, thus the commercial credit in these communities could be said to be missing, and this actually formed an important bottleneck in improving the livelihood conditions of squatters after their living conditions were improved.

The lack of funding sources for livelihood condition improvement affect the capital expenditures including the employment of the labor force, re-employment of laid-off workers, laid-off workers starting their own businesses, training for employment and reemployment, assisting poor children to get education, etc. International experiences showed that such lack of funding is likely to lead to deterioration of the livelihood conditions of the squatters even if their living conditions have been improved, thus their relative impoverishment may further

deepen. From the data provided by Liaoning, the shantytowns' funds was almost entirely used to improve living conditions, the little money from the Civil Affairs Bureau, Federation of Labor, Human Resources and Social Security and other local government agencies were mainly used for the improvement of livelihood conditions of the shantytowns. For this, the possible explanation is that the original intention of the "Nine in One" was to provide funds for the demolition of the old squatter housing in shantytowns and the construction of new housing. Since almost no money was set aside for the livelihood condition improvement, it is necessary for the system to further improve its fund-financing and fund-expending.

The data provided by Liaoning on payment of the debts in the shantytowns shows that the fund used as the source of the reimbursement, was from the land transfer income. Money was borrowed from the provincial fiscal institution, municipal fiscal revenue, the sale of expanded area and the sale of the remaining housing in shantytowns. It is therefore obvious that the remaining debt repayment arrangement will depend on the land transfer income.

Tables 3.6 and 3.7, show that till the end of 2011 some cities were still lagging behind in the repayment of their loans and under much pressure for repayment. There are two reasons to explain the payment pressure. One is that China's national real estate tightening policy may reduce the income of the land transfer, and this will further enhance the payment pressure. The other is that fiscal revenue growth, which to a large extent depends on the profitability of new industries in the industrial transformation and on new economic growth capacity in building the so-called new cities, may slow down because of the new sense of homogeneity in recent years across the country, thus bringing about further uncertainty to the payment in the future.

As at 2005, the problems of lack of state laws, regulations and policies, limited local financial resources. Furthermore, tough financial constraints for Liaoning's mining shantytowns were still evident; but the new local leadership, stimulated by one sentence "even if the government smashes the pot and sells the iron, let you (residents) live in the building", broke through the difficulties encountered in financing shantytowns and achieved an effective financing platform. This showed that

Table 3.6 The payment of the debt in Tieling's shantytowns from 2005 to 2011 (Unit: million, annual)

	2005	2006	2007	2008
Total debts	50,000	65,800	66,700	4,000
Average interest	737.5		5,086	4,002
The principal and interest paid already	737.5		5,086	70,702
Land transfer fund	737.5			1,500
The treasury used for payment (unpaid debts)				66,700
The sale of the remaining housing in shantytowns		2,024	5,086	2,502

Modified from the People's Government of Liaoning Province

Table 3.7 The payment of the debt in Fushun's shantytowns from 2005 to 2011 (Unit: million annual)

	2005	2006	2007	2008	2009	2010	2011	Total
Total debts	50,000	91,800	70,000	70,000				281,800
Life (years)	15	3 (overdue)	15	15	15			
Average interest	740	6,065	10,403	14,914	13,240	11,309	11,062	67,733
The principal and interest paid already	740	6,065	10,403	94,914	18,439	21,509	21,263	173,333
Land transfer fund					4,466	9,861	13,918	28,245
Fiscal revenue used for payment							7,092	7,092
Borrowed from provincial fiscal capital for payment					8,544	3,702	253	12,499
The treasury used for payment (unpaid debts)				80,000		5,100		85,100
The spread of selling expanded area	740	6,065	10,403	14,914	5,429	2,846		40,397

Modified from the People's Government of Liaoning Province

under specific conditions, such as the lack of the guide of the system, a special type of leading group might have the decisive function in establishing institutional and financing system, as the Liaoning provincial leadership team did in the shantytowns.

3.5 Summing Up

Upgrading shantytowns is a sustainable process, from "live in" to "live safely" and finally to" live well", in which the financing support should be maintainable. Among the capital from the three types of financing channels of "Nine in One" or "Government + Market + Society", market capital played the most important role, followed by government funds, the last is social capital (which of course is also very important). In the view of the roles played by these funds in the shantytowns, the government funds had two roles; it provided direct support for the shantytowns, and more importantly, it was useful to guide and leverage market and

social capital, particularly market funds to participate in financing shantytowns. As mentioned earlier, the amount of market funds leveraged by government channels funds was up to 413.02 billion Yuan, accounting for 56.33 % of the total sources of finance.

Specific instruments used by the government to guide and to leverage market and societal funds include guarantees, interest subsidies, insurance, etc. These instruments actually establish a credit enhancement support platform, and effectively prevent and control the risk associated with market and social capital so that these capitals have powerful incentives to provide sustainable credit support for low-income people. Therefore, establishing an effective government funds support (or policy-oriented financing) platform is critical in effectively raising the funds for the survival and development of low-income people.

We have seen that Liaoning shantytowns effectively advanced in those years in which fixed asset investment, real estate investment, GDP, fiscal revenue and resident income had rapid growth; and thus large-scale of debt service involved in the shantytowns was also covered in time. This shows that decision making also has an impact on the economic and social development of a people. When the right decisions are made by the leaders, there could be economic and social development, and in turn, the survival and development conditions of the poor can be improved.

Chapter 4
Systems of Land and Security of Tenure

4.1 Introduction

In recent decades, the rate of urbanization has increased rapidly in all regions of the world, especially in the developing countries. Despite the rise, a series of problems have arisen as a result of the fast urbanization process, in which the most serious are the urban slums and shantytowns. According to statistics, the total population living in poor residential areas has increased from 777 million in the year 2000 to 830 million[1] in 2010, which accounts for more than one-fifth of the total urban population. The poor residential area has become one of the challenges hindering economic and social development of all countries and has also caused a series of serious social consequences. The problem of the slums and shantytowns around the world has therefore raised wide concern for research among scholars from all countries even though the governments of some of these countries have actively taken a number of measures to deal with it.

One of the characteristics of slums as expressed in its many definitions is that the security of tenure is not guaranteed, that is, lack of authority-recognized ownership of land and buildings.[2] In Brazil, a large number of low-income population or rural migrants through "illegal invasion" occupied idle land to build their own unplanned settlements that eventually turn into slums.[3] The issues of land exploitation, and the distribution of value-added income are, however, of crucial importance in conducting research on and in the reconstruction of slums or shantytowns. Chinese scholars argue that upgrading shantytowns as a means to improving

[1] UN-Habitat (2010). State of the World Cities 2010/2011: Bridging the Urban Divide; Nairobi.

[2] The United Nations human settlements programme, The slums challenge: global human settlements report 2003, translated by Yu Jing, China architecture & building press, 2006.

[3] Du Yue: *Basic practice of governance of Brazilian slums, the Latin American Studies*, February, 2008.

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_4

people's livelihood should contribute to urban land conservation and raise land value.[4] Therefore, an understanding of the process and practice of land development in poor residential areas is essential to the broader development challenge.

4.2 Literature Review and Theoretical Framework

Access to land and security of land use duration are strategic prerequisites for providing adequate shelter for all, for sustainable development and the key to breaking the cycle of poverty.[5] Recent studies indicate that establishing secure land use duration is an important catalyst for the mobilization of independent investment and economic development. UN-Habitat holds that if shelter is to be provided for all, secure land use duration should be granted legally; this requires a transparent, demonstrative, integrated land use right transfer system. The World Bank and the United States Agency for International Development have repeatedly emphasized the strategic position of market-oriented land and housing policies of poor residential areas, the standardization of priority to settlement of illegal construction land use duration, and upgrading of land use duration system, with the long-term objective of promoting private ownership through the allocation of individual freehold.

Five ways were put forward to deal with land issues of poor residential areas by the United Nations Asia-Pacific Economic and Social Council and UN-Habitat in 2008. The first is to set up a joint strategy to develop public and private land beyond the legal authority through the share of land and negotiation of government or private owners with residents of unofficial residential areas. The second one is to reorganize a few adjacent lands, eliminate property borders, re-plan and develop new land area. The third is to normalize and grant legal land rights to unofficial residents. And also, they suggested simplifying the land use and planning regulations with the original intention to benefit the poor. The last is boosting land valuation and taxation, which should contribute to the investment plan achievement.[6]

Land property and value-added distribution of income is the core of land operation in poor residential areas. Zhou (1994) divided land value-added benefits into land price appreciation and land capital value growth.[7] Based on the source of the benefit, land value-added benefits can also be divided into "value added by human" and "value added by nature." Zuhui and Hui (2002) further pointed out that infrastructure has a prominent effect on land price through production, management,

[4] Wang LiDong: *Urban shantytowns land problems and thinking*, *Jilin agriculture*, 2011, period 8.

[5] The United Nations Human Settlements Programme, The Slums Challenge: Global Human Settlements Report 2003, translated by Yu Jing, China architecture & building press, 2006.

[6] *UNESCAP/UN*-Habitat (2008). Housing the Poor in Asian Cities: Vol. 3 Land; Quick Guides Series for Policy Makers; Nairobi.

[7] Zhou (1994).

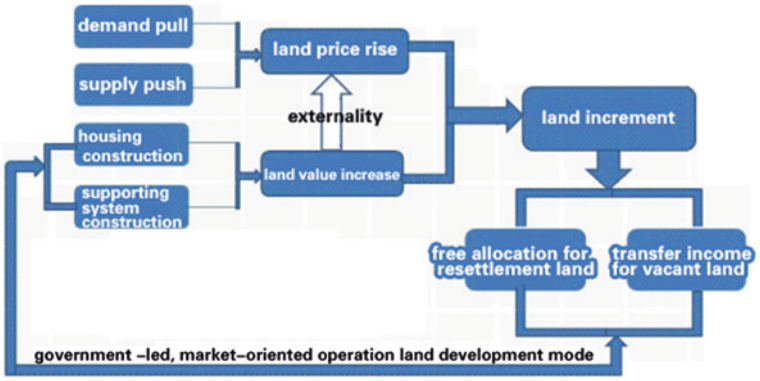

Fig. 4.1 Theoretical framework of sustainable land operation for poor residents

and other activities.[8] Theoretically, there are three views on land value-added income distribution: the "public appreciation" theory which was first proposed by British economist John Mueller, the traditional view of "private appreciation" reprepresented by UN-HABITAT (2003) which supports that all the "value added by nature land" should belong to the original land owners; and the "Private-public balance," a theory by Zhou Cheng, which advocates turning the rest of the land over to the central government after adequate compensation for the lost land to the original owners.[9] To sum up, based on operational experience of upgrading shanty-towns, a theoretical framework of the sustainable development of land operation in poor residential areas, as shown in Fig. 4.1, comes into being in this book. First, it is important to conduct a land consolidation and reservation survey in poor residential areas. Part of the land will be allocated for settlement and supporting system construction, while the other part is for capital gains. Construction of housing and supporting system, on the one hand, may bring about an increase in land value; however, it may affect the relationship between supply and demand of land through externality effects, which will boost land prices and result in land value-added benefits. A theoretical framework of virtuous cycle of sustainable land operation will come into being with land value-added benefit being put into housing, support system construction, as well as social security.

Most countries practice the process of land regularization in slum upgrading. The Brazilian government initially took the expulsion attitude toward the slum dwellers, like prohibiting residents from occupying shared or private land, suppressing the growth of slums and placing slums completely outside urban planning. However, due to the fact that urbanization is growing fast in a disorganized way, and as a result of the ever-increasing number of the poor and the number of

[8] Zuhui and Hui (2002).

[9] Zhou Cheng: The natural distribution of "private-public balance theory" by farm into non-farmland, China development and observation, 2006, period 9.

slums, the government could not acquire all the land. The government therefore adopted policies of land legalization for some qualified slums, recognized land use rights or ownership, and solved the legitimate problem of slum housing. Some effective relocation measures with sound effects were taken in the implementation of slum land legalization process.[10] Relocation not only solves the problem of land demand and legitimacy of the slum, but also allows these slums to be put back into the urban planning. Sri Lanka supports the upper limit of privately owned land. The owners of urban slums are requested to return the land exceeding the prescribed area to the government, which then takes up the responsibility of investment and redistribution. In Ghana, 80 % of the land in need of improvement is allowed to be managed by the community and community members have the right to perform construction within the scope of their function.[11] The Government of Tanzania issued residence permits to unofficial residents and the people living and working in such areas, and these people are subsequently registered, determined, classified, and ultimately granted residence permits.[12]

The Chinese government has also been taking active measures to deal with the housing problems of shantytown residents who are low-income earners. In 2011, the Chinese government put forward an affordable housing plan of 10-million flats and planned to have over 36 million affordable apartments constructed. By the end of 2015, the rate of affordable housing will reach 20 %.[13] Since 2009, the Chinese government has made large-scale improvements to all kinds of shantytowns, which was represented by the Liaoning Province upgrading shantytowns. By 2005, a total construction area of 29.1 million m^2 of shantytowns had been reconstructed. Generally, new resettlement areas of 44.02 million square meters were built, which was a great success as the housing condition of 2.11 million shantytown residents was improved.

In land operation, the following difficulties and deficiencies need special attention in upgrading shantytowns:

Disorganized land system: The large proportion of existing private or unclear property land with related lapse in land property policy also results in difficulty of poor settlement governance. India, for example, has a high proportion of privately owned land, and citizens enjoy freedom of movement and can choose to live and settle anywhere within the territory, which turns out to be the most difficult problem in governing housing for the India's poor.

Lack of commitment on the part of government: The country fails to provide adequate, low-price, serviced land, nor transfer land income to the people as much

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[10] *Helia Naxif Xavier, Fernanda Magalh Ães, "Urban Slum Reports: The Case of Riode Janeiro, 2003.*

[11] *Wiley, Liz Alden and Hamond, Daniel, 2001. "Land Security and the Poor in Ghana: Is there a way forward? A Land Sector Scoping Study", p. 27.*

[12] *Kironde and Lusugga 2009 forthcoming. "Issuing of Residential Licenses in Unplanned Areas of Dar es Salaam, Tanzania", p. 19.*

[13] www.mohurd.gov.cn/zxydt/201202/t20120223_208893.html.

as possible. Due to the lack of formal land delivery mechanisms, land delivery without land registration takes place without the supervision of the law and the transactions are often conducted in the informal market. In Indonesia, the booming informal land market and the illegal occupation of banned land gave birth to the collection of land protection fees by land mafia.

Improper planning regulations and building codes: This is another restricting factor to land market. In Tanzania, for example, the smallest legal batch construction area is 400 m^2. However, in the slum reconstruction plan, the reconstruction area for informal residents is 80–100 m^2. In Sri Lanka, the smallest legal batch area is 150 m^2, with the standard for low-income residential construction being 50 m^2.[14]

Lack of effective management methods in land management: In Ghana, land ownership acquisition goes through miscellaneous procedures; 3 or more years are needed before an individual gets official ownership of land. Corruption has even made things worse because most people find it difficult to go through the right procedures required before owning a piece of land. Innovative measures such as land sharing should be put in place when dealing with the residential land issues for the poor.

4.3 International Comparison of Land Ownership in Poor Residential Areas

Land is a free gift of nature, but its economics, legality, and its uses as space resources[15] have different connotations in the land systems and land management mechanisms all over the world:

Land ownership: China is a country with complete public ownership of land, namely state ownership of urban land and rural collective land ownership. Therefore, land use rights and ownership are permanently separated and citizens or work units only enjoy land use rights instead of land ownership. On the contrary, for example, in countries like India, Brazil, Japan, and the United Kingdom and so on, public ownership and private ownership of land coexist. The private land accounts for a comparatively large proportion; hence, land ownership and land use rights are not separated on private land or government-owned land.

Land use rights: There are strict time and space restrictions for Chinese land use rights, and specific use period or limit according to the different land use nature. Also, automatic transfer of land use rights does not exist in China, while such cases are more common in countries like the United Kingdom, in which residents who live on a land for more than 4 years are entitled to continue to live there

[14] *UN-Habitat (2009) "Land and Slum Upgrading", UN-Habitat Slum Upgrading facility working paper 10; Nairobi.*

[15] *Li Yuan: Land theory and the current hot problems, The Chinese land, 2010, period 5.*

Table 4.1 The overview of the poor residential land use rights worldwide (Unit: %)

Region	Formal owner	Formal tenant	Squatter	Others
Africa	25	23	38	15
Asia (except China)	29	19	45	7
China	35	50	9	6
East Europe and mid Asia	65	34	1	3
Latin America and Caribbean countries	48	21	25	6
West Europe and other high-income countries	40	57	2	1
The whole world	42	34	19	5

Modified from UNCHS (UN-Habitat), 2003

even without obtaining planning permission. There are certain restrictions on land use rights in China. Residents enjoy exclusive rights within the surface (above and below). However, mineral resources and cultural relics within this scope still belong to the country. American land tenure is divided into underground rights (including the right to exploit underground resources), the surface rights, and the ground space rights (including the plot ratio of buildings and passage right within plot ratio), which can be transferred respectively.

The operation mode on land markets: Chinese state-owned land use rights are acquired in the following ways: land allocation, sale, transfer, and lease. In China, land allocation is administratively free. State-owned land use rights cannot be transferred. On the other hand, however, in places like the USA, the federal government acquired or public state-owned land can be appropriated through exchange or purchase.

The difference between land system and land management mechanism is one of the main reasons for the problems in poor residential areas. For example, India's highly centralized land system, as well as management mechanism of citizens' free choice of living and settlement in any place has resulted in India's slums and this is increasingly difficult to eliminate.[16]

4.3.1 Comparison of Land Use Rights in Global Perspective

According to UNCHS, Table 4.1 shows the overview of the poor residential land use rights worldwide. Nineteen percentage of the households are living in unauthorized houses, 42 % residents have formal ownership, and 34 % are formal leaseholders. Unauthorized houses are relatively common in Africa and South Asia.

[16] *Wang Xinyou: Indian's land system and slums phenomenon, management, 2009, 24.*

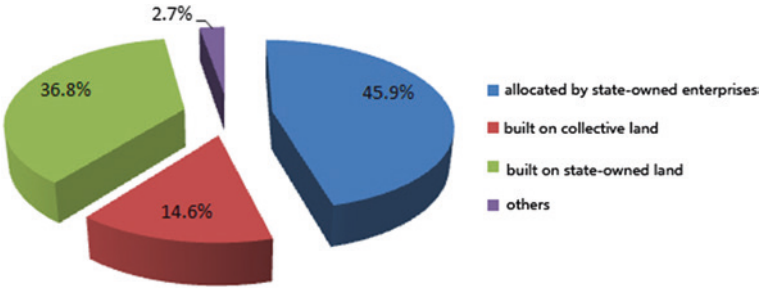

Fig. 4.2 Housing classifications in Shantytowns. Modified from survey data of the research team

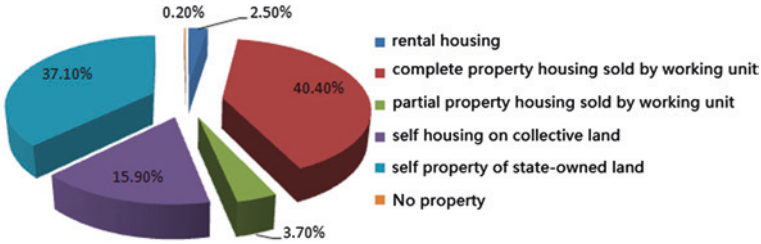

Fig. 4.3 Housing properties in Shantytowns. Modified from survey data of the research team

4.3.2 Overview of Land System in Liaoning Shantytowns

Shantytowns are faced with the problems of poor living conditions of people who live in houses with extended buildings, plug buildings, and private irregular buildings. According to the survey, 92.9 % of the squatters live in the ordinary bungalows, 1 % live in makeshifts or tents, and 4.4 % live in incomplete buildings. Most of the lands in Liaoning shantytowns are state owned, while another part is collective. However, most of the houses are built by working units, and a small part was self-built. Spaces in shantytowns were cramped, with little or no public and service facilities, the environment was dirty and very chaotic, and the residents were prone to safety hazards.

Figures 4.2 and 4.3 show the housing classifications and housing properties in the shantytowns.

4.3.3 Historical Origins of Land Challenges in the ShantyTowns

Historically, Liaoning was designated as a resource-based Province with heavy industry base for iron and steel, coal, petrochemical, machinery, and so on by the Chinese Party Central Committee and the State Council. In accordance with the

tradition of production, lodgings for miners were built around the mining area, but later with the depletion of the mineral resources, the industry gradually declined and the buildings deteriorated. After decades of change and the rapid urbanization process, a large area of shantytowns gradually formed.

With the depletion of mineral resources, coupled with the declining status of the resource extraction province, the industrial and mining enterprises started making a loss. This led to the inability of the mining areas to construct and allocate new houses. Workers were laid off, and those still working had relatively low wages, and the majority of the miners fell into low-income brackets, many of who could not purchase better houses at the market rate. There were lack of supporting facilities, such as, heating and drainage, coupled with low level of environment and health conditions. All these made the shantytowns to become actual slums. It was reported that the percentage of Fushun laid-off miners was over 70 %, while 70 % were regarded as being in the low-income households. Also, 90 % laid-off or unemployed miners lived in Fuxin Xinqiu shantytowns. Therefore, the ubiquitous problem of low income and poor living conditions were prevalent among shantytown residents.

Figure 4.4 shows that more than 90 % of the families' annual income in the shantytowns was below 35,000 Yuan, half of which earned less than 20,000 Yuan and therefore the inability of the residents to buy new apartments from the market as they could not afford them.

It therefore became inevitable for government interventions and promotion to solve the problem of low land value, with increasing difficult commercial operations; lack of standardization of land, with unclear property rights; even some collective land that contributed to the difficulty in the viability of the commercial enterprises of the province. The government therefore had to support through supply of land, financing, and tax policies as well as different land development policies.

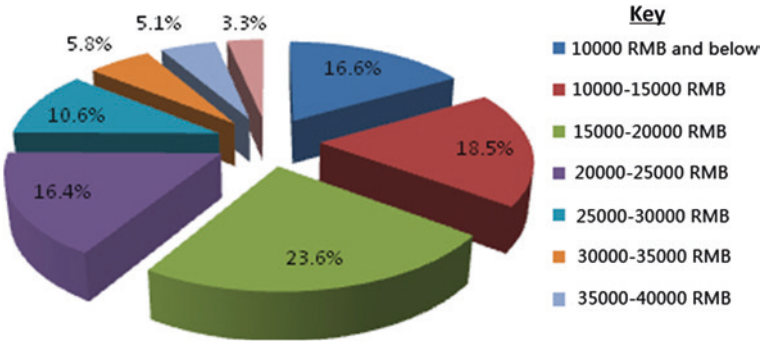

Fig. 4.4 Annual household income in Shantytowns before reconstruction. Modified from survey data of the research team

4.4 Measures and Practices of Land Operation in Liaoning ShantyTowns

Land is a special factor of production, with multiple properties of neutrality, economics, and legality. Overall planning and norm integration lay a foundation for efficient use of land. Upgrading shantytowns in Liaoning helped to achieve land integration, increased efforts of land acquisition, and formed a land reserve through a series of measures of revitalizing the idle, utilizing present land potential, and relocation and integration of resources. A holistic approach was used that took into consideration an economical and intensive use of land as the guiding principle for the state-owned land. The plan took into account a massive reconstruction of the whole shantytowns for its restructuring and the urban renewal projects.

Fushun municipal government also restructured its educational resources. Through the educational resources integration, three schools including Fushun University and Fushun City Women Professional School merged to make available an extra piece of land of 31.8 ha. Land and Resources Bureau of Benxi put forward the general idea of "control increment, revitalize the stock, continuously improve the efficiency of land use and the degree of intensification, emphasize on potential land for construction," which promoted the integration and reserves of the shantytowns' land.

In the process of upgrading shantytowns, Liaoning combined land allocation with transfer as a means of land supply. The revenue the government collected from land transfer was used to support the shantytowns' project. However, the newly built structures were commercialized. The funds raised were to improve the new district business and public service functions. Funds were also raised for new area construction and to subsidize resettlement housing with commercial land development. The supply of land is fundamental to shantytown reconstruction. Liaoning shantytowns' land supply was complex and unsettled issues that resulted in high land supply pressure. In this regard, the ministry of land resources in the province gave priority to shantytowns housing allocation and put it into the city land supply plan. According to the nature of the placement of property, a corresponding housing supply plan was adopted. First, urban shantytowns' projects were made into affordable housing plans, and the required land for construction was provided by administrative allocation. Second, vacated shantytowns could be developed into land for commercial and service projects. Land allocation by bidding and auction was granted to support the project of shantytowns. Through the combination of the allocation and transfer of land, the optimization of the supply of land in shantytowns was assured both in total amount and structure.

Liaoning Province's upgrading of shantytowns developed a basic function of market mechanism in the allocation of land resources that ensured an efficient development of the land in the shantytowns and at the same time strengthening the government's regulation. Market developments and operations were also actively carried out for land at commercial values in such cities as Dandong,

Benxi, Jinzhou, and Yingkou, in which social capital was used in upgrading shantytowns. The government played a direct role in developing lands that had no commercial value in shantytowns, such as the city borders and mine surroundings. These lands with low value basically do not possess the conditions of market-oriented operation and so could be manipulated by the government for any use.

In upgrading shantytowns, Liaoning fully adhered to property right recognition. In addition to recognizing the original property right of those houses built before 1949, which were without either land or housing certificates, the government also entitled those households that possessed a land certificate but no housing certificate to the property right as long as it is the family's only house. Taking a combination of housing settlement and monetary compensation, the government ensured that the move-back residents were granted land use rights and property rights; housing difficulties of the disadvantaged groups were also solved effectively. The rational allocation of housing is the important issue involving the vital interests of shantytowns' people. According to local conditions, Liaoning Province, in upgrading shantytowns, took steps of combining housing resettlement with monetary compensation. As for the housing resettlement compensation, with equal area in return, 600–800 RMB per square meter should be paid for the excess area. Minimum housing area standards are set up in cities due to specific circumstances. Under the condition that the original housing area was less than the standard, the settlement will be free of charge. In high-price land cities like Shenyang and Dalian, the method of monetary compensation is often adopted and residents can freely choose where to settle down. The governments in these provinces helped residents to become home owners through various categorizations of affordable housing costs.

4.5 Government-Led Development and Benefits

The government-leading and market-operating model adopted by Liaoning in upgrading shantytowns led to a series of practices beneficial to the people. The first is to ensure that the squatters move into new houses and that they have their property rights protected. After upgrading shantytowns, nearly 97 % of residents had complete property housing. The average living area per household increased from 36.1 to 56.6 m^2, which benefited from direct government land allocation or indirect land transfer fee to support shantytown reconstruction.

Secondly, as land and housing values rise, the squatters gain capital premium. Upgrading shantytowns optimizes allocation of land resources and improves the land value. For example, small and separated shantytowns were integrated as a whole, giving rise to vacant land, thus increasing the value of land and market price. Upgrading shantytowns brought about also the increase in the prices of nearby housing projects. Residents became estate property owners of an average premium of 10 million Yuan.

Next, it also benefitted the disadvantaged groups by the redistribution of land revenue by the government. Government spent part of the revenue meant for upgrading shantytowns on low-rent housing, gave subsidy to poor residents, and constructed more infrastructures. Liaoning in upgrading the shantytowns provided appropriate support systems to the extremely poor residents. Those who could not purchase their houses were temporarily settled in low-rent housing. The properties of original land owners were granted to residents, while the remaining property could be obtained after full payment. Due to the low income of most squatters, the government gave them subsidized heating and property fees as a result of increase in cost of living after moving into the new residence. There was an improvement in the standard of living due to the judicious use of some of the land revenues collected, and which the government used for reconstruction and building of municipal facilities, land, and public services for the residents.

De Soto (1989) studies have shown that bureaucratic red tape is an important reason that prevents the poor from owning legitimate housing.[17] The Liaoning province was able to develop appropriate policies in land supply, development, and settlement which made the upgrading processes of these shantytowns proceed smoothly. Local Taxation Bureau of the province formulated preferential tax policies of upgrading shantytowns in 2005, 2007, and 2010, and the policies were effectively implemented. For example, no deed tax for land use rights was required during allocation. Land listed in the upgrading shantytowns' projects was exempted from urban land use tax. Since 2005, Liaoning's land tax system's total relief of the local tax was 330 million Yuan. The Land department also set up a series of corresponding preferential policies, for example, the provisions of some commercial housing development to raise funds and payment of land registration fees, state-owned land use tax, and other administrative fees. There are also appropriate land policies to promote the smooth process of upgrading shantytowns in all cities.

With Liaoning Province shantytowns' projects in the affordable housing construction plan, its demands and relevant procedures were given priority. This helps to effectively simplify and speed up the reconstruction procedures and processing plans. The Provincial Department adhered to the so-called Sun Operation and opened the "green channel," which facilitated upgrading of the shantytowns with the fastest speed and best service. Benxi City opened "green channel" for purposes of land use approval, which simplified procedures and shortened the approval time. For qualified projects, personnel were required to immediately investigate the scene and thus ensure that land use approval procedures were completed within 3 working days.

Shantytowns in the province have made great achievements due to the promotion of the provincial government. Since 2005, when large-scale upgrading of shantytowns began, 523 contiguous shantytowns of the province were totally improved, with a demolition area of 29,100,000 m^2 and vacant land area of about 13,400 ha. The supply land for shantytowns' resettlement reached 3,260 ha, with 2,900 ha

[17] De Soto (1989).

reconstructed by taking advantage of original location and 360 ha outside the original location. New settlement housing amounted to 44.02 million square meters. The living conditions of 2.11 million residents were greatly improved, which is a glorious milestone in the history of China and the world urban reconstruction.

Through large-scale land integration, ample land reserves were recovered. In a fair, open and just environment community bidding, auction, or quotation, these lands entered into the standard state-owned land use market right. By this, the government was able to transform land into assets, and this promoted a fast pace of urban land marketing. The considerable size of the land transactions made shantytown construction possible with a total of nearly seven billion Yuan gained through Liaoning Province land transfer and real estate development. In addition, through upgrading shantytowns, 134 km^2 of land was vacated in the province with total revenue of 2.42 billion Yuan, 1.44 billion Yuan land revenue was collected from the contiguous shantytowns, and 980 million Yuan from city and state-owned industrial revenue. Through land purchasing and listed acquisition of 52 pieces of land of 235 ha, a fiscal net income of 62.19 million Yuan was received by Fushun city, which ensured 500 million Yuan of state-owned land assets was reused.

Through upgrading of the shantytowns, squatters moved from low dilapidated bungalows to spacious and new buildings. A large number of dirty and messy makeshift buildings with poor infrastructure disappeared and chaotic land property rights improved. Community management became more standardized. Nearly 97 % of the residents obtained complete ownership of housing, and more than 98 % of the land was incorporated into the state-owned land. The acquired vacant land by the government was reconstructed into well-equipped roads, hospitals, schools, business, community, and public service facilities. A new addition of the province's 790,000 m^2 was turned into green areas, 1.26 million square meters of road, and construction of 20,000 m^2 of anti-subsidence square, which further clarified the original land property rights and made management more standard.

4.5.1 Home Ownership and Income Gap Reduction

Upgrading shantytowns is a significant project concerning the improvement of livelihood of the people and the housing conditions of low-income families. About 211 million people's housing conditions in the province were improved, and new housing to residents brought premium of assets to them and thus changed them from proletarians to property owners. The residents were equally guaranteed that their basic living and property rights are secured. Before the reconstruction, the average household living area was 36.1 and 10.6 m^2 per capita; when compared to the post-reconstruction, the average area increased to 56.6 m^2 with 16.6 m^2 per capita, significantly narrowing the gap with the provincial level. Around the city, through a variety of preferential policies, the poor masses possessed apartments with prices more than ten million or even tens of millions Yuan without paying money or with very little payment, narrowing the gap between the rich and the

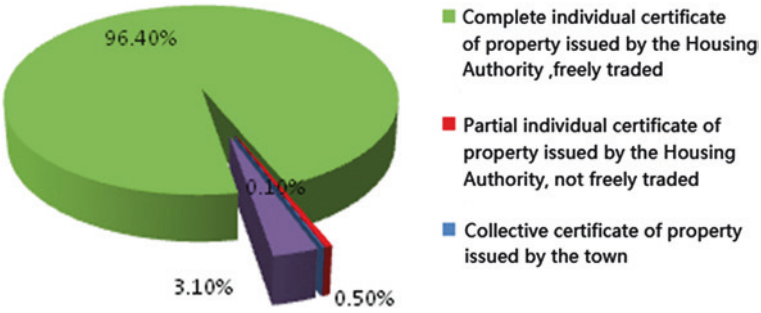

Fig. 4.5 Upgrading of the Shantytowns. Modified from survey data of the research team

poor. More profits were given to residents through heating bills subsidy, property fees, living allowance, and infrastructure (Fig. 4.5).

From the chart above, we can see that through the upgrading of shantytowns, over 96 % of the original inhabitants of shantytowns have complete individual ownership of housing, with less than 1 % without certificates. The upgrading of shantytowns is a major livelihood project of the people.

The efficiency of land use in the project improved a lot by increasing plot ratio. Since the original one-floor shantytowns were changed into high-rise buildings, with the total land area remaining unchanged, the total construction area was greatly increased, which resulted in high plot ratio, and more vacant land for land reserve.

Before reconstruction, shantytowns were mostly located in the remote industrial and mining areas or the edge of the city, coupled with the poor environment, inadequate infrastructure, and low value of the land. After the reconstruction, the surrounding environment improved a lot and continuous improvement of infrastructure greatly increased the value of the land leading to investment in real estate and increase of fiscal income. The general finance budget revenue of Beijiao which was 130 million Yuan earlier rose up to 1.53 billion Yuan in 2011, an increase of 11 times. From 2006 to 2008, the average price of land in shantytowns increased from 500 Yuan per square meter to 2,000 Yuan per square meter in Anshan City. Accumulated land transfer fee amounted to more than 14 billion Yuan, ten times more than the past.

4.5.2 Optimal Allocation of Land Resources

The Liaoning provincial government combined the upgrading of shantytowns with urban development and resources integration. Taking the cities' construction and development into consideration, the reconstruction provides the cities, with a broader development and better urban infrastructure and the impetus to the city's

functional and sustainable development. Through shantytown reconstruction, the land was revitalized and the structure of land for construction was improved; land allocation and utilization efficiency were greatly enhanced, and scarce land resources were used more effectively. After the reconstruction, an extra 134 km^2 of land provided valuable land resources for the sustainable development of the city. Also, the originally scattered small plots of land were integrated into a large piece of land, improving the function of the city carriage. For example, the upgrading of the shantytowns in Fushun provided the government with an ample vacant area for it to plan and construct three industrial parks, namely Fu Hua Mountain, Wanghua Hexi, and Donggou Fine Chemicals. There was still remaining 471.44 ha of land which would provide a broader space for urban development. The city carrying capacity has been enhanced significantly with the basic infrastructure system.

4.5.3 Increase in Housing Supply, and Stabilized Housing Prices

The Liaoning shantytown reconstruction ensured housing supply, improved the supply structure of the local real estate market, and eased the housing supply and demand, which was beneficial to the stability of the market prices. Since the massive upgrading of shantytowns in the province in 2005, the province's total construction area reached 44.02 million square meters, which improved the living conditions of 2.11 million residents, increased housing supply, and eased the contradiction between supply and demand. Also, a large number of small-size and low-price apartments and move-back resettlements kept prices of real estate steady effectively.

Since the implementation of the project of upgrading shantytowns, real estate sales price of Benxi has been effectively controlled. The average price of apartments per square meter of Benxi was 1706 Yuan in 2004 and 2712 Yuan in 2008. The average annual growth of apartment sales price was only 8.5 %. Upgrading shantytowns effectively adjusted the housing supply structure and at the same time played an effective role in regulating the overall urban housing prices.

The great success achieved by Liaoning Province in shantytown reconstruction is a wonderful experience, one which is worth emulating by other cities around the world. It provides a fresh case and a mode of learning for the world to solve the problems of the poor residential areas. Advantages of public ownership of land: China's land system is owned by the public, including state ownership of urban land and rural collective land ownership. Due to the nature of the land ownership, flexible and efficient measures were taken in Liaoning shantytowns to demolish, allocate, transfer, and develop the land. Also the land revenue allocation, resettlement compensation, and other areas reflected the advantages of socialism in concentrating power.

Preferential land policies and efficient administrative execution: Liaoning provincial government promotes shantytowns as "Number One livelihood Project."

The local tax bureau, the land department, and the housing and building department formulated preferential policies to promote the upgrading of shantytowns. Simplifying procedures, improving efficiency, and opening a number of "green channels" ensured successful completion of the upgrading of shantytowns.

During the reconstruction process, government maximized the profit sharing, solved the housing difficulties of shantytowns with people-oriented spirit, and made the shantytowns' residents property owners.

Direct free allocation of land for the project, with the government's land revenue, directly helped the people; the funding problems were solved to some extent, and this promoted the smooth execution of the upgrading project. People living in shantytowns became property owners through the land capital gains, housing ownership, and capital premium of land and housing.

The provincial government transferred land suitable for commercial development into the market and gained substantial land transfer fee. Many cities returned all the land transfer income to upgrade shantytowns, and this solved the funding problems encountered during the upgrading process and the housing problems of the disadvantaged groups. The squatters got real benefits.

After the shantytowns were upgraded, subsidy of living services' charges such as property and heating charges was granted to destitute groups by the government. Through the improvement of community infrastructure, the shantytown residents could enjoy better public services.

4.5.4 Driver of Success Combined Government and Market Dynamics

Shantytown reconstruction is the government-leading livelihood project. Focusing on a market mechanism, all levels of government fully play a leading role at the same time, which attracted a wide range of social forces to participate in the shantytown reconstruction. Flexible use of the mode of government-leading and market-operating financing and demolition process, adoption of allocation, and transfer of land supply in the shantytown land operation and the land development mode of government and market development promoted the successful completion of upgrading shantytowns.

Tieling adopted the government-leading and market-oriented approach, when upgrading its shantytowns, and this resulted in unified planning and rational distribution of land resources. This flexible way has a combination of advantages of the government's organizational strengths and developmental financing, which enabled manpower, material, and financial resources in the underdeveloped city of Tieling to do what housing developers were not willing to, or dared to do, or are afraid to do. Through a combination of government-leading and market-oriented operations, government's macroeconomic regulation and control of project implementation were achieved and policy support and supervision were set in process.

4.5.5 Governance and Planning of Land Resources

Upgrading shantytowns is a major systematic project concerning broad interests of the people, economic restructuring, and urban development. Liaoning Province planned the upgrading process of shantytowns from the strategic height of the city upgrading, combining the upgrading of shantytowns with land resource integration, promoting economic restructuring, urban development, employment and reemployment, and enhancing urban functions. Taking overall consideration of urban planning, land use planning, and construction of affordable housing, the government made scientific and efficient progress in the upgrading project.

In reconstruction, overall consideration was given to the interests of the state, collectives, and individuals, the squatters' tolerance level, the government affordability, and the needs of developers' profit. Social security, employment, health care, culture, and law and order of residents were also given special consideration. The reconstruction principle of "four combinations" was adhered to; this entails combining the contiguous shantytowns with scattered shantytowns, combining urban finished areas with rural and urban mixed areas, combining the upgrading of shantytowns with the renovation of dilapidated buildings, and combining the upgrading process with urban functions.

Comprehensive reconstruction was adopted to guarantee basic rights for residents. When Vice Premier, Li Keqiang (secretary of the Liaoning Provincial Party Committee in 2004), visited the Fushun squatters, he pointed out that "We will move people out of shantytowns with all efforts," and thus promoted the upgrading of shantytowns as "Number 1 livelihood project." The 14 cities throughout the province took action, and further large-scale comprehensive reconstruction followed as well.

Property recognition ensured the shantytowns' resident's property rights. Focusing on the most difficult thing, the people, the province solved the housing problems of low-income families and the most direct and most pressing problems of shantytowns. The confirmation of Liaoning shantytown land use right and building property right showed the government's ruling concept of "people first." Before modification, part of the land use rights of private illegal buildings and shacks were identified and people's basic living rights were respected; after the reconstruction, land rights were given to the people including those of settlement housing on transfer land, which completely solved the difficult housing problems of urban homes. In addition, the regional, municipal, educational, medical, and public service facilities were also improved, and this was beneficial to 2.11 million shantytowns' residents. This "people-oriented" policy of the government and the obvious improvements seen by the people saw the return of squatters who had gone away from the shantytowns to the rural areas.

4.6 Summing Up

In the governance of the worldwide problem of poor settlements, land operation is undoubtedly very important and difficult. How to allocate land property rights and provide appreciable income are the keys to the success achieved in upgrading the shantytowns. Liaoning's success provides an instructive case for land operation in the governance of poor residential areas. The successful experiences of upgrading shantytowns' show that the government's policy to distribute some of the income generated from the sales of land and other gains from the real estate was a great benefit to the people as it helped in the success of the reconstruction project. Secondly, the key to solving land problems of shantytowns is to use the government-leading, market-operating approach of land operation. Thirdly, the main aim of reconstruction is to respect people's basic living and property rights in shantytowns. Fourth is the guarantee of successful land operation in the overall land resources planning. Liaoning's shantytowns provided a new operation mode for governing the poor residential areas. The main measures and experiences of land operation in upgrading shantytowns in the province deserves global reference and learning to solve the problems of the poor residential areas.

Evidently, in the reconstruction of shantytowns, land operation still needs some continuous improvement, for example, the building of settlements on the allocated construction land. According to Article 39 of China's real estate administration provisions, the assignee can obtain the complete property right after payment of transfer fee in land allocation by housing transfer; therefore, there may be some remaining problems in the transfer process of the resettlement. The relocated residents of Liaoning almost possessed complete property rights, which is a breakthrough. The subsequent system and related laws also need to be further improved upon, and shantytowns' resettlement exit mechanism still needs to be regulated, in order to guarantee residents' rights and interests, and develop economic, social, and environmental benefits to its maximum.

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Chapter 5
Upgrading Shantytowns in Liaoning: The Challenge of Sustainable Housing Development

5.1 Introduction

Housing development and construction in poor neighborhoods has always been a problem faced by countries all over the world. At the end of 2003, a UN report claimed that there were 1 billion people living in the slums, which accounted for 1/3 of the world's urban population and 1/6 of the world's total population. The same report predicted that this number would double to 2 billion in 30 years. Given such a large number of poor population, the management of housing development and construction in poor neighborhoods has become an inevitable problem to every city in the world. As the most populous country in the world, China is at the stage of rapid urbanization, where a large number of people flood in from rural areas to urban areas every year; there is also the need for fundamental reform within the urban areas. In this case, housing development and construction has become a problem that Chinese cities must solve. This chapter puts forward the problem of sustainable pay ability of shantytown residents in Liaoning and constructs the analytical framework to solve this problem. On the basis of understanding the basic conditions of shantytown residents, Liaoning has solved the problem of sustainable ability of shantytown residents through common security, social relief, training, promotion of employment, employment services, and other means to "increase income and reduce expenditure." Eventually, the employment situation of residents has improved, income has increased, and the burden has reduced simultaneously; it also gives a good explanation of the income distribution of social justice.

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_5

As quasi-public goods, the development of indemnificatory housing in poor neighborhood has always caught the attention of scholars. The early thoughts believed that quasi-public goods with the nature of public benefits should be provided by the government. In his book, "A Treatise of Human Nature" in 1793, David Hume mentioned that public affairs that were beyond individual interests could only be handled through collective action, which actually brought about the concept of market failure. In his treatise, "The Wealth of Nations," Adam Smith pointed out that those public facilities that would benefit the whole society must be completed by the monarch. Samuelson mentioned in his "The Pure Theory of Public Expenditure" that market could not solve the problem with public goods supply. The institutional economist, Coase thinks that a market based on individual choices cannot automatically provide public or quasi-public goods effectively. These thoughts have considered market failure of quasi-public goods, but have not mentioned the limit to the power of government, that is, government failure.

Afterward, with the development of institutional economics, there was deeper understanding about quasi-public goods. Meanwhile, a large number of scholars believed that as quasi-public goods, the supply of habitation in poor neighborhoods "reflects the nature and integrity of economic institutions," which should not rely only on the government (Tang Shaotang 2007). Indemnificatory housing in poor neighborhoods, as quasi-public goods, "should not totally be the government's responsibility to supply"; instead, there should be a mixed supply from the government and the market, which brought about the complexity of supply mechanism. Some scholars believed that the public–private partnership (PPP) model was the effective way to supply indemnificatory housing in urban poor neighborhoods and have introduced "three levels" and "eight expanded models"(the eight expanded models include service agreement, leasing agreement, contracting agreement, BOT agreement, BOOT agreement, package agreement, BBO agreement, and BOO agreement) (Hou Jun 2008) (Tables 5.1 and 5.2).

Table 5.1 Three levels of cooperation between public and private institutions

Objective levels	Between institutions		Inside the institutions
	Public institutions	Private institutions	
Lower level objectives	Increase investment, enlarge the scale of infrastructure service	Gain effective return on projects	Allocate responsibility and earnings
Higher level objectives	The effective or long-term use of capital	Increase market share	Supply of effective service facilities
Management-level objectives	Innovate management method and improve management efficiency	Seek more cooperation opportunities with the government	Sustainable guarantee of effective service

Modified from *On the Application of PPP Model in Urban Public Goods*, Hou Jun, Modern Cities Research, 2008(6)

Table 5.2 Model and features of PPP of various infrastructure areas

Type of infrastructure	Suitable PPP mode	Features of the applying area
Existing facilities	Service contract	Strong public nature and externality
	Operate maintenance contract	
Expansion of existing facilities	Lease-build-operate	Medium public nature and externality
	Buy-build-operate	
	Wraparound addition	
Newly built facilities	Build-transport-operate	Weak public nature and externality
	Build-operate-transport	
	Build-operate-own-transport	
	Build-own-operate	

Modified from *On the Application of PPP Model in Urban Public Goods*, Hou Jun, Modern Cities Research, 2008(6)

5.2 Housing Trends in Emerging Economies—India, South Africa, Mexico, Brazil, Chile, Colombia, and Philippines

The recognition of housing as a key social and economic policy is being consolidated around many of the emerging economies of the world. Middle-income countries like Brazil, Mexico, and China have launched specific programs to deal with housing problems; the urban poor setting new paradigms on policy level in a world context of urbanization; high levels of informality; and poverty in the cities. Whether housing is seen as a commodity or a social welfare mechanism, or even a combination of both, what matters most is the concept of the need to provide housing in a country as a mechanism to promote economic growth.

In *Mexico*, the housing reform took place in the second half of the 1990 decade and was focused on the provision of new homes by the private sector on a large scale based on a combination of up-front subsidies and finance targeting, the lower income brackets. Although the housing production increased significantly and the private sector clearly expanded down markets, the massive production of "new towns" on the periphery of cities without a proper revision of the cities' master plans, the lack of integration through a comprehensive transportation system, and the absence of a broader social and economic development plan have generated a sustainability problem that now requires a huge effort from the government in rethinking the housing programs in relation to land use planning and the social component. The basis for the new policy improvements is symbolized by a triangle of sustainability: social, economic, and environmental, and this is behind the new strategy called "Integral Sustainable Urban Development" (DUIS). The DUIS concentrates on new development areas with integrated housing plans, infrastructure, services, commercial and industrial areas, leisure areas, and so on, on a joint partnership of the federal government, state government, municipal government, landowners, and developers. The idea is to promote and coordinate intelligent planning, maximizing the use of land already connected with existing

infrastructure and services, combined with the private sector's economic interests for new production of commercial areas, and adding capacity for municipalities through concession schemes for the implementation of public services and infrastructure. The strategy for DUIS was born due to the serious sustainability problems faced by the first large-scale housing development located in far areas, without proper access to public services, transportation network, jobs, and facilities.

In Mexico, during the low-income housing boom, there was a clear lack of involvement of local governments and communities; this generated poor-serviced developments with low levels of social capital and feeling of ownership. As a result of these loopholes, the main challenges that were identified for future purposes are to promote better located, low-income housing development (even if implementation costs are higher) and involve beneficiaries at an earlier stage of planning and design in order to match their needs and strengthen communities for future maintenance, and to guarantee the basis for a long-term social and economic development approach. In addition to government's efforts in promoting sustainable developments, some private companies like HOMEX are implementing integrated post-occupation programs, which include the structuring of community centers and offices with the aim of providing and promoting post-sales assistance, community organization strategies, capacity and training activities, and income generation programs, among others. The objective is to leave strong organized communities and a robust social network to guarantee proper maintenance of the housing complexes and also the continuity of government support on implementing needed social facilities and infrastructure connecting the new settlement with cities and employment opportunities.

In 2009, *India* launched the Rajiv Awas Yojana (popularly called "RAY"), in order to address the needs of the urban poor in the country, especially slum dwellers who represent 50 % in cities like Mumbai. The main target is to overcome urban poverty through the provision of housing and improvement of existing informal settlements and slums. The program has a four-axial approach:

1. "in situ" development programs with basic amenities and an enabling strategy for affordable housing in the case of "tenable" slums, with reconfiguration to the extent possible based on town planning norms of the State/UT concerned;
2. development in "relocation" sites with affordable housing and access to all basic amenities, including easy access of public transportation to commute to jobs for rehabilitating the "untenable" slums; efforts will first be made to re-examine the issue of so-called "untenability" and whether the untenable slums could be settled in tenable slums with densification based on a city-wide slum-upgrading approach;
3. housing and civic development programs in peripheries of existing cities and towns to accommodate the urban poor including migrants, with a focus on public–private partnerships (PPPs) and requiring/incentivizing developers to adopt inclusive zoning and reserve land/houses for the poor; and
4. integrated-and-inclusive new townships around emerging hubs of industry, trade, and commerce, including special economic zones (SEZs) with adequate space for housing the poor and informal sector workers as part of the location policy for those entities (Government of India 2009: 5–6).

The program is also built on the concept of planning inclusive cities, and the right of the city, recognizing the need to reserve space in the urban areas for low-income housing, and tools to provide land tenure regularization and infrastructure upgrading to existing slums and informal settlements in general. India also launched *The National Rehabilitation and Resettlement Policy* in 2007, with a more "advisory" nature, which was later on followed by some states that approved specific state policies. Currently, there is a law to regulate involuntary resettlement under discussion in the National Parliament, and the main objective is to improve process in terms of planning, community participation and transparency, ensuring fair compensation mechanisms (Sinha 2012).

Colombia has set up a benchmark for slum-upgrading strategies, considering the concrete cases of struggling, crime, and violence through urban renewal of slum areas and integrating poor areas to the urban tissue in Medellin and Bogota. The slum-upgrading program of Medellin was a model for a similar program implemented in Brazil, especially in Rio de Janeiro, where organized crime and violence was a common feature in urban slums. Bogota has issued very progressive legal framework to regulate resettlement, recognizing the rights of resettled families to receive compensation for housing and income losses, through a planned process with strong community participation emphasis, social and legal support for the affected families in case of resettlement due to risky living conditions (river banks, sloping area, etc.) and public works (Correa 2012). In 2007, a national law introduced the concept of the "Macroproyetos," where the government identifies locations (land) for large-scale mixed-income housing development, expropriating private land if necessary, with the objective to reduce the housing backlog in the country. The concept is based on a PPP system for the creation of "new neighborhoods." Colombia has a long tradition of progressive laws to guarantee the "social" function of the land, as the land value capture, known as "maisvalia" and to promote community and society participation. The partial plans (30 plans only in Medellin) provide a view of how to use spaces in the city and are a basis for a broader "compulsory negotiation" among property owners, investors, government entities, and the society as a whole. On the housing context, the so-called "Habitat Centers" are the conduit for community participation throughout the whole process of planning, executing, and delivering housing projects; those centers are supported by local NGOs.

In the *Philippines*, the housing policy is based on two main axes: (i) community-based housing projects, and (ii) government-driven resettlement, through the private sector. In situ upgrading through self-help mutual approaches by the communities is a common practice in the country that counts on a broad network of people's organizations highly specialized in conducting community census, profile, and building new houses with government subsidy. Although government resettlement can have a larger scale reach, community schemes are well structured and they have a higher potential for long-term sustainability.

Chile has a long-term history of stable policies for low-income housing; the country provided massive low-income housing production through the private sector under a scheme of combining upfront subsidies, private savings, and credit to access affordable housing when it was launched in the 1970s. Despite the financial

innovation in terms of subsidy design, one of the main critics of the Chilean model is the urban segregation promoted by large-scale housing developments for low-income families. More recently, in 2006, the national government launched the "200 Barrios" program with the aim of revitalizing and integrating the cities' old housing complexes. Promoted by the government through the subsidy schemes, these settlements deteriorated over a period of time, creating zones of social exclusion and violence in urban areas. The focus of this program was to promote social and economic development actions aimed at the integration of marginalized territories into the urban tissue. In Chile, a strong focus is given to community engagement and participation, on improving neighborhoods through the so-called "neighborhood contracts," one for construction and works and a second type for social purposes. Another interesting innovation in Chilean housing policies is the compulsory legal mechanism that obliges private developers to earmark 5 % of every housing development for social or low-income houses.

Brazil, after 20 years of lack of a central-based national policy, and based on fragmented experiences at municipal and state levels carried out especially during the 1990s, launched the Growth Acceleration Program in 2007, a broader economic development program where slum upgrading was considered a high-level priority for the country. This program represented a major scale up on existing isolated slum-upgrading programs, with a significant leverage on investment levels to consolidate existing precarious settlements in the urban areas. In 2009, the government launched a major subsidy program, called "Minha Casa, Minha Vida" (My House, My Life) in order to improve the supply for new low-income housing and access the crescent housing needs in the country. Brazil's policy reforms were preceded by a very progressive national law, called "City Statute," that recognizes the right of the poor residents to the city, foreseeing a series of tools to improve planning for social housing, land regularization, and funding mechanisms for the cities. The main worries in Brazil now are related to the sustainability of these large-scale developments in terms of creating a comprehensive integration with the city and the promotion of long-term social and economic development.

In 2010, *South Africa*, having recognized the need to address existing settlements and gradually improve living conditions, instead of having a strict housing supply policy created a Ministry of Human Settlements to replace the former Ministry of Housing. Since then, South African government has been making efforts to implement decentralized slum-upgrading programs, highlighting the importance of local government in managing housing and infrastructure programs even in a non-federative country. The private sector took the lead to promote the first mixed-income housing development that is now being replicated in the country. "Cosmo City" was a pilot project based on a PPP, where government facilitated the access to land and provided subsidies for low-income housing; the market houses were carrying out development costs for the whole area.

The lack of housing policies had promoted the rapid increase and spread of slums and informal settlements in poor and middle-income countries, especially in the last four decades. The United Nations estimates a global slum population of

approximately 1 billion people demonstrating a huge failure of these countries in facing their housing challenges. Some of these countries are being more aggressive in facing this challenge and creating benchmarks for a global scale up and replication of successful experiences. Nevertheless, the basis for successful experiences is the recognition of the urban poor as key pieces of a fast-moving urban engine; in this sense, promoting physical integration of degraded areas to the city, parallel to the implementation of strategies for long-term social and economic development stays at the core of a housing policy that intends to overcome existing inefficiencies and backlogs. The big challenge even for the large-scale and recognized "successful" experiences in all the countries is how to promote sustainable policies and programs in the long term, without promoting more segregation and therefore social exclusion.

Regulations and policy guidelines to improve resettlement procedures are also common denominators in recent progress in the international agenda; India and Colombia have progressive and innovative legislation that should be a reference for other countries like Brazil and South Africa. A common trend observed in the countries mentioned in terms of housing policies is that they maximize society and private sector participation, giving the clear message that the government alone is not capable of carrying out large-scale and sustainable housing projects, although high investments are needed in order to overcome the historical negative legacy generated by the lack of robust policies and programs over decades in the emerging countries. Another important challenge is the need to maximize existing infrastructure like roads, sewage system, transportation systems, and public service facilities; an intelligent and agreed land use planning system is therefore crucial for long-term social, economic, and environmental sustainability.

5.3 A Comparative Examination of Brazilian Housing Policies

5.3.1 Recent Trends in Housing Policies

Brazil has been designing its housing policies since 2000 and for a decade based on a combination of concepts that consider the right of the poor to the city and to access land; the economic return of investments on low-income housing is in form of (i) economic growth and wealth creation, in the short term, and (ii) in the long run, a broader economic development for lower income segments of the population. Finally, there is need to promote long-term social development and the effective integration of low-income territories into the city tissue and dynamics.

Under this concept, important institutional benchmarks were achieved in the last decade:

- The approval of the City Statute by the National Congress in 2001: mainly recognizes the right of informal dwellers to remain in the land they already occupy and gives instruments for municipalities to enable the regularization process and to reserve vacant land in the city for low-income housing.

- The creation of the Ministry of Cities to deal with housing, sanitation, transportation, and urban planning from a federative perspective, considering the fact that all these issues are municipal and state attributions.
- The public debate and launching of the National Housing Plan from 2006 to 2008: projections for housing needs till 2023, typology of subsidies and targets.
- The launching and implementation of the Growth Acceleration Program in 2007, establishing slum upgrading as priority investment area for the country.
- The launch of the subsidies program for low-income housing in 2009, with clear income segmentation, connecting up-front subsidies and credit.

These institutional changes marked the beginning of an era where slum-upgrading and low-income housing eventually became subjects for high level of investments from the federal government, being an attribute of local governments to implement the projects and put aside matching funds.

In a context where 12.4 million people or 3.2 million households live in slums, with a deficit backlog of approximately 6 million houses and increasing housing needs due to demographic growth of the country, the federal government made budgetary allocations of *US$13.1 billion* in slum upgrading, sanitation, and housing construction projects from 2007 to 2010, and forecasts investments of approximately *US$17.9 billion for the period 2011–2014.*

The main guidelines for these slum-upgrading projects are to maximize existing houses and implement water and sanitation systems, drainage system, roads, electricity, and public service facilities such as schools, day cares, health units, and leisure areas.

An important component of a slum-upgrading project is the social support for the beneficiaries. The main priorities are to: (i) strengthen community organizations; (ii) leverage community participation at the planning and design phase, through the execution and post-occupation phases; and (iii) promote social and economic integration of the territory into the city. A high level of investment goes into: the social component (2.5 % of each project total cost) and there is a mechanism to interrupt construction works if there is any delay in the social support activities.

While the slum-upgrading programs, under a major economic growth strategy in the country, deals with the urban deteriorated areas, the deficit, the subsidies program called “My House, My Life” was launched in 2009 as a countercyclical program to face the international financial crisis that emerged at the end of 2008. The idea was to promote rapid construction of houses and to leverage employment rates, also addressing a clear social need of the country. This program had an initial target of building a total of 1 million houses till 2014, but later on expanded to 3 million.

The economic results were very positive:

- Increase in Brazil’s GDP: In past years, civil construction sector contributed increasingly to GDP; in 2010 it represented 5.3 %.
- Employment generation: There were 2.6 million formal workers in 2010.
- Expansion of housing finance markets: The participation in the GDP increased from 1.6 % in 2003 to 4.1 % in 2011.

It is important to highlight that this happened in a context of expansion of domestic markets: In the last 8 years, 40 million Brazilians moved above the poverty

line due to a combination of economic stabilization and social inclusion programs implemented on a large scale since the end of the 1990s.

On the social side, there is still a long way to go as inequalities in urban areas are still large. For example, comparing urban poor families in Brazil from the period 1999–2001, the monthly average income was approximately US$180, while in non-slum areas, it was US$355; in terms of education, the percentage of the population over 25 years old that completed high school in slums was 18 % in contrast to 32 % in non-slum urban areas. In Brazil therefore, although many barriers were broken in terms of recognizing the right of the poor to the city, and effectively improving their life conditions, the future slums are still a priority and the challenge is to promote long-term social and economic development ensuring that those resources are being invested in a sustainable way. This task will require integrated actions from the three levels of government, civil society, and private sector. There are already interesting on-going programs but the challenge is how to scale up those experiences and keep them running in the long term, improve planning, and take the opportunity that the economy is robust following a stable growing pace.

5.3.2 The New Proposed Framework for Resettlement

The Government of Brazil, with the support of the World Bank, is working on a new regulatory framework on involuntary resettlement for construction and infrastructure works funded with resources from the Ministry of Cities (transportation, sanitation, urban infrastructure). This framework is currently on the internet for public consultation. The concept behind this new regulation is the need to implement urban infrastructure in the cities of Brazil in order to keep up with the pace of the economic growth in the country and the idea that implementation of large-scale infrastructure investments will certainly cause the need for relocation of socially vulnerable families and communities. Since 2008, Brazil has been experiencing a peculiar diverse growth trend when compared to that of developed economies. This was mostly affected by the international financial crisis in this same year and the following ones. This growth initiated in the second half of the 1990s happened after a long-term recession and was characterized by the lack of planning, in general, and especially the absence of a national-centralized housing policy. Now the cities face the challenge of improving its infrastructure and services, provide low-income housing to overcome the spread of precarious, and informal settlements and address future demographic needs. This is happening too fast and due to the lack of planning, some resettlement procedures were focus of concerns by civil society representatives, such as community-based organizations, NGOs, universities, public attorneys, and by the UN Special Rapporteur on Adequate Housing. In addition to that, the World Bank, on a review of policies and practices in Brazil also highlighted the lack of a national policy and guidelines to address involuntary resettlement in the country.

In order to respond to these worries and understanding the importance of proper planning on relocating poor communities, the Ministry of Cities proposed

a first legal instrument to regulate resettlement procedures in construction works funded by transfers to local governments. An international workshop took place in March, 2012, where international stakeholders from India, Colombia, South Africa, and World Bank experts debated with national key stakeholders such as local governments, authorities, and civil society representatives on the need to improve regulation from the national government perspective and to structure and consolidate a national policy on resettlement. This draft regulation foresees the need of compensation for formal and informal tenants, based on the physical conditions of the house and the right of tenure, even without formal property titles, the affected families should be compensated for:

- investments on existing housing structures;
- land, in cases of formal ownership or for cases where the national law recognizes the right for tenure (according to the City Statute in urban areas for dwellers living over 5 years in the same location);
- rent, formal, or informal situations;
- business, formal, or informal.

The compensation for housing can be in kind or fiduciary, or a combination of both. In the cases of in kind compensation, the family can be offered an existing property from the secondary markets (including properties with informal tenure situation) or a new one isolated or in an integrated housing development, but in all the cases, proximity should be guaranteed in order to keep existing social and economic networks.

The regulation also establishes high parameters for planning, community participation, and monitoring of the process as a whole. Affected families must be consulted and informed about the planned physical interventions, their rights, and alternatives of resettlement and compensation. The participation can happen at individual or collective levels, but priority should be given to collective negotiations. A strong emphasis is also given to conflict mediation and social support. Communities must receive adequate social support in order to: (i) strengthen community organization and social capital; (ii) promote social and economic development; (iii) capacity building for property management and maintenance. The main idea of this regulation is to leverage levels of planning and community participation during resettlement process, so that affected families have a full understanding of the reasons for relocation, alternatives, and consequences in order to mitigate negative impacts generated.

Box 5.1: **World Bank Resettlement Policies**
The World Bank, through its regulations, established policy guidelines and procedures to be considered under involuntary displacement situations. The Operational Policy known as OP 4.12 and the Bank Procedure, BP 4.12 set up guidelines and procedures for clients (governments) to deal with involuntary resettlement.

The main philosophy behind the rules are: (i) involuntary resettlement should be avoided whenever possible; (ii) if necessary, displacements must occur under an approach of sustainable development; (iii) extensive consultation with affected families must be carried out, and they should participate in the whole process from planning to execution; and (iv) displaced families should be assisted in their efforts to improve or at least maintain their original living conditions.

The bank also recommends that comprehensive census and diagnosis be carried out, with information about income sources, occupation, social aspects, housing and infrastructure conditions, availability of services, and community organization, among others. This information must be updated and must be the basis for a resettlement plan. The resettlement plan must have: (i) a full description of relocation alternatives; (ii) feasibility studies for housing and social services; (iii) institutional contracts and agreements; (iv) related costs; (v) clear mechanisms of compensation for property and income losses; (vi) participation strategies, including consultations, dialogue, negotiation, and conflict mediation with affected communities and in the new relocation site; (vi) support on transition phase in order to enable the restoration of living conditions and employment; (v) assistance on the moving process; (vii) assistance for social minorities. The bank also sets up standards for the local management of the resettlement process with strong supervision from bank staff in order to check the feasibility of the plan and related measures, existing risks, the availability of funding sources, convergence of the plan and construction works, criteria for identifying families to be relocated, and the levels of participation. The bank also foresees the establishing of a high-level committee inside the bank in order to address critical issues, if need be.

For the World Bank, there is need to minimize resettlements, since this process usually has an impact on the living conditions of the affected communities. If it is unavoidable, it must be planned in a participatory manner such that people can be aware of existing alternatives and mechanisms of compensation, also conflicts must be immediately and properly mediated; otherwise, they can incur delays for the whole intervention. It is crucial to promote resettlement in a sustainable perspective and ensure that communities are strengthened and qualified for a high-level participation process and to ensure the sustainability of eventual new resettlement sites and its neighborhoods, economic integration must be prioritized to avoid decrease of income and the needed social support must be offered in order to guarantee long-term development for affected families and communities.

5.4 China's Resettlement Policies—A Comparative Analysis

In 2011, the Government of China issued a new regulation on resettlement procedures, replacing an old legislation of 2001: "The Regulations on Expropriation of Houses on State-owned Land and Compensation for Expropriation."

One of the main shifts proposed by the new legal framework is the empowerment of juridical authorities at the detriment of administrative authorities (land developer) on driving demolitions and compensation procedures. This legislation foresees specific compensation for: (i) existing houses—expropriation; (ii) costs for moving and transitory shelter, if need be; and (iii) losses of income generated by the interruption of production and business. The amount of compensation should be indicated by real estate appraisal agencies (according to government parameters), and for the case of loss of income, an estimation must be done considering the profits made and the period of ceasing business. The regulation also assumes the possibility of expropriation for families without registration, including illegal and temporary houses built within a given cutoff (HHP Attorneys-at-Law: 2011).

5.4.1 The Liaoning Experience

As a consequence of a labor-oriented policy carried out in the past, between 2000 and 2010, the province of Liaoning faced in the beginning of the 2000 decade a huge problem in terms of numbers of families living under precarious conditions related to dilapidated housing units on vulnerable locations leveraging the risk of disasters and health problems incidence. These neighborhoods are known as "shantytowns," a different concept from the slums phenomenon, which is characterized by spontaneous or self-organized occupations rather than caused by the deterioration of public housing.

Inhabitants living in shantytowns represented in 2004 approximately 200 million people in 2004, about 8.8 % of the total population in the province, a situation caused by inefficiencies of public housing supply and market unaffordability after the collapse of industrial and mining activities in the region. In the same year, the context was of (i) economic growth, with rates above 10 % for three consecutive years as a result of the 2003 "Revitalization Strategy of Traditional Northeast Industrial Base" pushed by the Central Government; (ii) increase of fiscal revenues; but (iii) increase of unemployment, as resulting from the transfers of workers from state-owned enterprises to the private sector and flexible working models (Center for City and Competitiveness 2012b: 164–165).

The first step toward an urban renewal that aims to solve the precarious living conditions in shantytowns was taken in 2004 with the public announcement of a provincial authority, Li Keqiang—Party Secretary, of a comprehensive resettlement program targeting all shantytowns located in the Liaoning Province (Table 5.3).

Table 5.3 Resettlement program of shantytowns in Liaoning Province

Period	Target areas (m^2)	Estimated number of households
2005–2006	>50,000	345,000
2007–2009	10,000 > 50,000	54,000
2009–	<10,000	–

Modified from Overall Report of Center for City and Competitiveness (2012a), Ni Pengfei

The program had three implementation phases:

The results were impressive; within a period of 5 years, from 2005 to 2009, the completion of approximately 400,000 relocations was achieved. The process was entirely driven by the local governments, or municipalities, under a financial engineering that included: (i) budgetary funds from the three spheres of government; (ii) development loans; (iii) tax incentives; (iv) private savings; (v) land transfers; (vi) social contributions; and (vii) market operations. It must be noted that although the priority was to set up PPPs making use of valuable land, in locations where market valuable land was not available, the government bore the costs of the interventions.

The PPP model implemented in Liaoning was strongly based on land concession and construction licenses; since land belongs to the state in China, this was the most attractive ingredient in order to leverage market forces toward the production of social housing, as a counterpart to access land for more profitable real estate investments.

5.4.2 Liaoning Resettlement Program: The Economics of Housing and Resettlement

The investments converged to the national economic development policy based on the expansion of real estate business and housing (see Fig. 5.1), the fiscal revenue in Liaoning increased by 400 % from 2004 to 2011, from approximately US$82.7 to 412.6 billion. Considering the financial engineering of the program (see Table 5.4), the returns of government investments on shantytowns were fully recovered by increase in fiscal revenues, even though a direct correlation cannot be proven yet.

These outcomes are in corroboration with the findings of Park and Zheng (2002) who pointed out the existence of a co-integration between housing investment and GDP; this study also suggests that during the analyzed period, 1981–2000, housing construction was the most important sector of China's economy and that the increase in investments on housing will generate a growth in GDP on a short term. However, the authors highlight the risk of a non-planned process of leveraging investments on housing disconnected with the effective demand (affordability for families and enterprises); this might cause instability for China's economy.

Fig. 5.1 Proportion of residential investments in GDP in China (modified from China statistical yearbook (2013, 2012, 2011, 2010) and China compendium of statistics 1949–2008)

Table 5.4 Investments on shantytown resettlement in Liaoning 2005–2011

Investments	US$	US$ billion %
Government	44	39
Market	64	56
Society	6	5
Total	114	100

Modified from the People's Government of Liaoning Province

Although there are risks presented to the economy, one positive aspect of China's resettlement policy is the fact that cost recovery issues were not constraints as is present in many countries but as an integrated component of a broader economic growth strategy and urban transformation model. This approach is the same in Brazil and Colombia, where the government is making high investments in upgrading slums in an effort to generate economic growth with high-level urban projects promoting a physical integration of these precarious areas to the city.

Nevertheless, since the Government of Liaoning is counting on market revenues to cross subsidize resettlement housing, a possible national mismatch between supply and demand in the housing sector might occur and affect the financial engineering for the planned PPPs and disturb the model therefore generating a burden for government's budget. Although the study mentioned above was published in the year 2002, recent evidence demonstrates that the risk of non-affordability of market houses for the average Chinese family is still high and threatening government's strategy for the housing sector as a whole, having direct impact on the

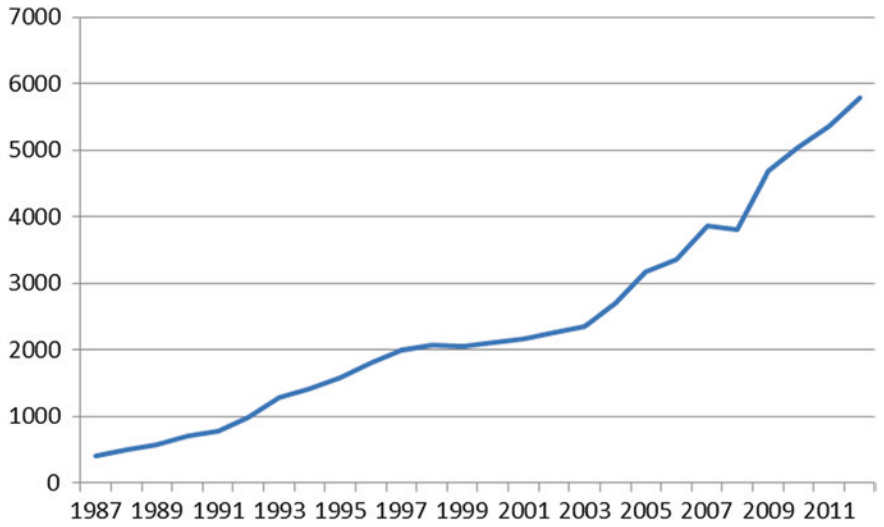


Fig. 5.2 Unit price of residential housing (¥/m^2) 1987–2012 (modified from China statistical yearbook (2013, 2012, 2011, 2010) and China compendium of statistics 1949–2008)

resettlement program of the Liaoning Province. Figure 5.2 demonstrates how prices are on rise historically and more recently again in other provinces in China.

In a context of rising housing prices, and in comparison with other cities in the world, on the average, the ratio prices x income in China is still high, demonstrating the difficulties for the average Chinese to access market houses. This gap in affordability is also highlighted by the Overall Report as an incidence in the early stages of the housing reform.

The problem here is that a high percentage of the population is eligible for affordable housing, generating a big demand for these kinds of houses; looking at the gap between income and house price at commercial level, there is a clear mismatch in supply and demand. For the government of Liaoning, it is important to monitor housing markets in the country and understand the potential of PPPs considering that the Chinese housing markets are still in formation, with a housing finance system that is been consolidated, and the limitations in terms of payment capacity of the average Chinese family.

Although the financial engineering of Liaoning PPPs is very innovative, it has a high degree of complexity and uncertainty, leveraging the risk for the private sector to enter in. This might generate extra burden for government's accounts, considering the development loans taken by the municipalities to complement funding. A failure on the PPP model might also reverse the expectancies of tax revenues and have a strong impact on municipal and provincial budgets on a medium and long-term basis. Some municipalities such as Fushun and Tieling are already showing signs of difficulties on repaying debt, which might be related to the depletion of land transfer revenues and/or on the slowdown of economic growth in the country

as a whole. The PPP model to deal with affordable housing is still being "tested" in the emerging economies: The city of Mumbai in India has implemented an interesting model of land sharing and slum reconstruction with the private sector; in São Paulo—Brazil, the first PPP model for social rental housing was announced in the beginning of 2012; in Johannesburg—South Africa, there are some PPP rental housing developments in the central area, but still on a very small scale. Most PPP experiences are still on a minor scale and not sufficient to carry the main costs to deal with the housing needs in the country. In Mexico, Chile, Colombia, South Africa, Brazil, and even India, it is still the government that incurs the major financial costs for implementing infrastructure on slums and subsidizes low-income housing.

Nevertheless, like the Brazilian model, investing in "social liabilities" such as infrastructure and housing for slums or shantytowns is extremely important for the society as a whole, and its benefits will also come in terms of economic expansion for the city and for the country at all. The point here is the risk of counting on a market still in consolidation to pay this bill; it might be a burden for the government's budget and might also affect the dynamics of the whole real estate market, generating imbalance and eventual bubbles that might scare private investors and contaminate the non-housing markets and the national economy. Considering the risks involved, it is important to highlight the positive outcomes of the program. According to the research report of the Chinese Academy for Social Sciences, as a result of several government policies, that include the improvement of shantytowns and an integrated policy approach to promote development—pushing the market economy, attracting investments, and improving efficiency of state-owned enterprises—the economic annual growth rate increased from 10 to 13.5 % from 2005 to 2011 with leverage of per capita income (2.4 times) and reduction of unemployment rate from 6.5 to 3.7 %.

The best lesson to the world from the Liaoning resettlement program is the promotion of a mixed approach of social and economic development, putting an urban renovation process as a core intervention of economic and social measures that leads to a virtual cycle and generates investments, growth, and reduction of inequalities.

5.5 The Social Dimension of the Liaoning Resettlement Program

In international comparative perspective, China's resettlement's legal and institutional framework is very advanced, while Colombia has innovative mechanisms of compensation, which are still limited to municipal levels. In India, there is a national policy and some state regulations, but no clarity on institutional responsibilities. China's national regulations give clear directions on the attributions for implementation and operational purposes, policy guidelines, and compensation mechanisms for loss of houses and income. In Brazil, the proposed regulation is

still limited for infrastructure works funded by the Ministry of Cities only and there are legal restrictions at the local level to implement compensations for loss of income. The Liaoning Province also set up its own regulations to deal with compensation and housing design issues, which is very progressive from an international perspective in terms of recognizing the rights of the urban poor even if they are informal dwellers without registration. So, in terms of recognizing the right for fair compensation for house and income, even in informal situations, China and Liaoning are a step ahead of other emerging countries in the world. Nevertheless, World Bank regulations and most available legal framework on resettlement recommend or require extensive consultative processes at the collective level, added to strong social support, highlighting the role of the communities in the decision-making, planning, design, implementation, and post-occupation processes.

The positive aspect in Liaoning is that, although there was a certain degree of mobility, residents have been living together, as neighbors, for a long time, since communities were formed by enterprise workers. However, the mobilization strategy was made under an individual, rather than in a collective perspective and in a more informative way. The social mobilization and support was led by party and union members, since community-based organizations—CBOs still exist, but due to lack of funding and capacity, they no longer have an active role to mobilize and organize communities.

Empirical experiences worldwide demonstrate that the lack of "ownership sense" might incur deterioration in the long term. In India, the management and maintenance of the housing complexes are fully taken by the community; the "Housing Societies" dwellers take the lead in managing the common area with their own savings and some initial financial support from the government. Brazil and Chile have some bad history of producing massive public housing that years later became deteriorated neighborhoods characterized by social problems, crime, and violence. In Brazil, it is clear that the government lacks the capacity to assume the management of new housing complexes for a longer period. In São Paulo, a research proved that self-managed houses tend to be more sustainable in the long term, but the precondition is to have a mobilized and organized community (Sanches 2008). In Liaoning, cities are working on programs that give some sort of social support for resettled families in terms of connecting them with available social services, employment, or entrepreneurial markets, but the final responsibility for maintaining the new housing developments still remains with the government. A challenge for the future exists in strengthening community bonds to assume management and maintenance, serving as a pillar for planning and implementing improvements in the new settlements in a context of transition from welfare to autonomous social and economic development.

Another challenge for the cities in the Liaoning Province is avoiding the creation of new shantytowns or "urban villages," since the shantytowns represented an interesting market for the poorest families who could not afford a house in the markets, so historically, there was an informal market in these areas. China's rate of urbanization is continuously growing (Fig. 5.3); some sources even state that

it exceeded 50 % for the first time in 2011; in contrast, urban employment is not increasing at the same pace, as it showed a declining trend in 2010 (Fig. 5.4).

The disparity between levels of rural–urban migration and urban employment rates, associated with the so-called Hukou system (where only officially registered

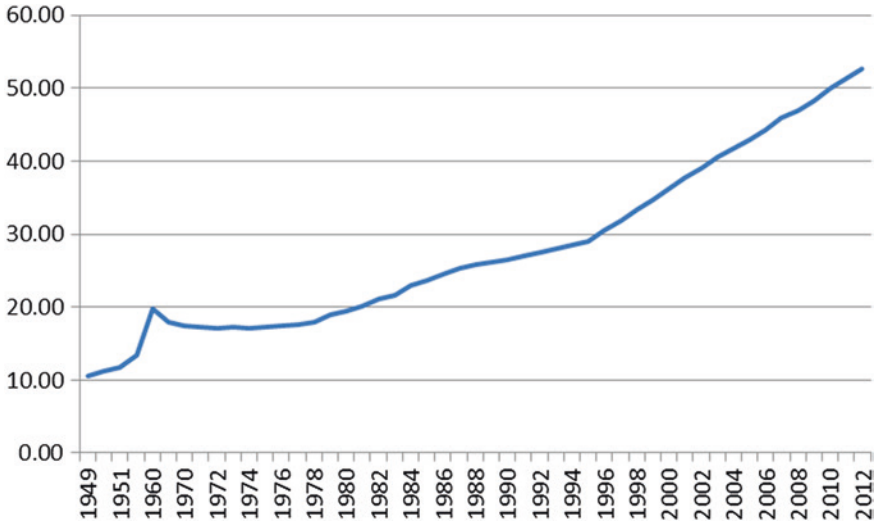


Fig. 5.3 Urbanization rates in China 1949–2012 [modified from China statistical yearbook (2013)]

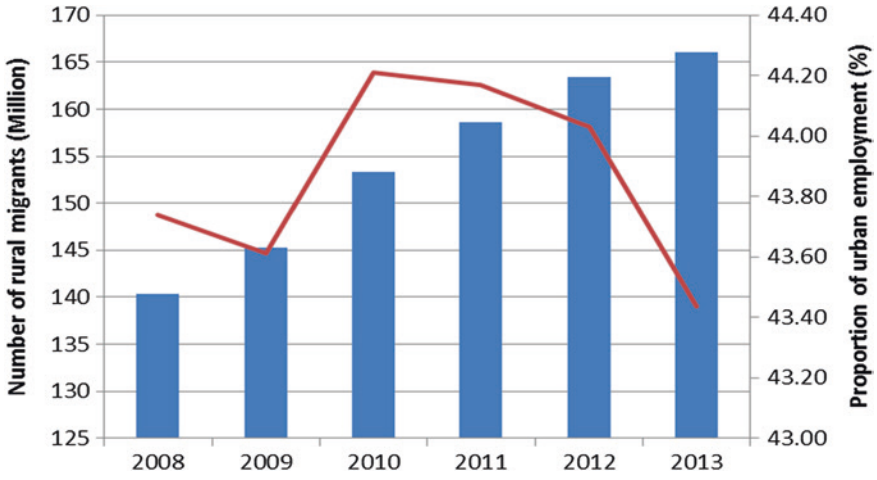


Fig. 5.4 Rural–urban migration (modified from the Web site of National Bureau of statistics of the People's Republic of China, http://www.stats.gov.cn/)

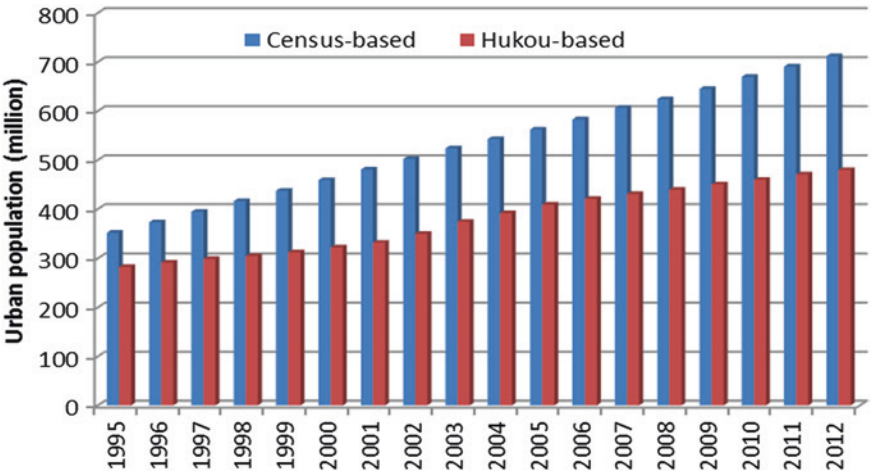


Fig. 5.5 Different realities: Hukou × census [modified from China statistical yearbook (2013) and China population statistics yearbook (1996–2013)]

and recognized urban dwellers have access to social services, insurance and housing), generates a context of income and social inequality in the urban centers, opening space for the spread of informal housing in shantytowns or urban villages, where shelter is affordable for the urban poor.

Figure 5.5 shows a clear distinction between the reality from the census and the Hukou registration in the urban areas, and although income per capita is much higher in the rural areas (Fig. 5.6), migration to cities is very dynamic and generates high degree of inequalities on social coverage for urban residents (Fig. 5.7).

China is at the same risk level of increasing the number of precarious or informal settlements as less urbanized countries like India, South Africa, and Philippines, while the Latin American countries stay at a more comfortable situation with higher levels of urbanization, for example, Brazil with 84 % of the population living in cities. The challenge for Liaoning in this context is to ensure the sustainability of the new low-income housing developments due to the pressure of the new comers in the city and the spread out of new shantytowns or informal settlements. While it is crucial to provide communities better living conditions, it is now very important to promote social and economic development parallel to a well-targeted housing policy, the only way to avoid future degradation of the urban spaces.

As a final remark, Liaoning's policies are in tune with international trends, recognizing the social problems and joining efforts of different actors to identify a solution. Considering the magnitude of the problem, it is realistic to expect high level of public investment, while the housing markets are still gaining maturity with the evolution of the finance and land regulatory systems. It is important to ensure the three pillars of sustainability taking investment decisions: social, economic, and environmental, therefore improving effective planning tools and seeking for proactive community participation.

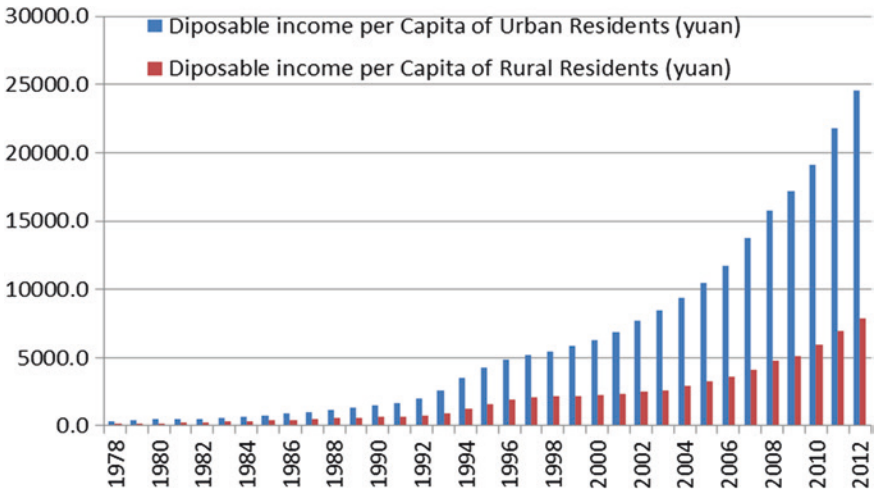


Fig. 5.6 Per capita income urban × rural [modified from China statistical yearbook (2013, 2012, 2011, 2010) and China compendium of statistics (1949–2008)]

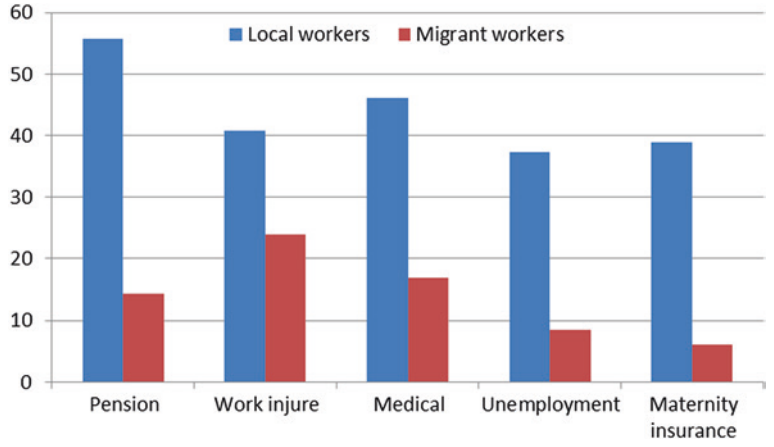


Fig. 5.7 Low social security coverage for migrant workers in the Chinese cities of 2012 (modified from the Web site of National Bureau of statistics of the People's Republic of China, http://www.stats.gov.cn/)

Due to the Great Depression in the 1930s and the destruction caused by the Second World War, the western countries (mainly European countries) started the movement of updating the cities on a large scale after the war, as they started to clear the ghettos. At that time, the method of "eliminating the ghettos" was employed, that is to say, all the ghettos were destroyed and all the original residents were removed so that new buildings could be constructed at city centers

where the original ghettos were once located. However, on one hand, the residents could not afford the rent of the new buildings due to their low income; on the other hand, it took time to develop new buildings; the shortage of housing during the construction time could not be effectively solved. As a result, Jacobs believed that this kind of city updating "is only transporting the ghettos from one place to another; the worse part of it is that it has destroyed the existing relationship within the neighborhood and community."

After the recovery period at the end of World War II, the developed western countries and part of developing countries in South America and Asia entered the phase of rapid economic growth in the 1980s. During this period, the reconstruction of poor neighborhoods centered more on thorough and comprehensive planning. Instead of considering solely the economic factors, social factors like employment, education, social equality, and so forth were all taken into consideration. However, the high development cost brought about by the large-scale reconstruction of poor neighborhoods has also made them difficult to develop. From the end of the 1970s to the early 1980s, the major developed countries experienced the difficult situation of "stagflation" (high level of inflation and unemployment, low level of economic growth) with the oil crisis as the starter. In this light, many cities experienced the worst economic crisis of the twentieth century (Gaetano and Klemanski 1993). Instead of focusing on large-scale reconstruction, focus was on small-scale community reconstruction in poor neighborhoods. A new orientation of partnerships among public, private, and the community started to take the place of the old government-leading style. In this period, the reconstruction projects with long renewing cycle and large capital requirement were harder to implement so that the problems with habitation in poor neighborhoods could not be solved once and for all. Meanwhile, developing countries like Brazil and India had also started part of the reconstruction projects in ghettos. In particular, as a typical Latin American country, Brazil started to try a new development mode with the government taking the lead. In this mode, both the ghetto and its residents were legally recognized by laws, and new comprehensive communities were built on the site of the old ghettos through central legislation, local implementation, comprehensive planning, and rotated development. However, only a small amount of ghettos were reconstructed due to the extremely high costs.

In the late 1990s, the movement of updating cites in western countries integrated with the thoughts of sustainable development were popular at that time, so they began to pay more attention to residency environment, ecological environment, and the sustainable development of the community (Roberts and Skyes 2000). In June 1996, the "HABITAT II" meeting held by the United Nation in Istanbul established two themes to fight for in the twenty-first century: "Everyone has appropriate housing" and "sustainable human habitation development in the background of urbanization"; this has also directed the value orientation of policies regarding the current habitation reconstruction in poor neighborhoods in the city. However, the difficulties encountered during large-scale reconstruction have not yet been solved.

5.6 Challenges of Housing Developments in Poor Neighborhoods

5.6.1 Resistance During Large-Scale Demolition

Due to the fact that there is a scale effect in demolition, a large-scale demolition will help to lower the cost. As a result, scaled demolition should be carried out in poor neighborhoods. However, due to the complicated components of residents in poor neighborhoods, it is hard to reach a demolition agreement; this will lead to immense resistance during scaled demolitions. For example, there were some cases in Brazil where residents of the ghettos resisted the demolition. In addition, in countries where land is privately owned, demolition has to go through complicated negotiation at considerably high cost, so it is hard to finish a large-scale demolition within a short period of time.

5.6.2 Lack of Conditions for Marketized Construction

Ghettos are always located at the edge of cites, where there is a large number of poor population with low incomes; at the same time, there is a lack of infrastructure, such as pipe borne water and electricity. With developing areas like these, the developing enterprises face two kinds of stress: On one hand, the large number of low-income residents brings about high risk and stress; on the other hand, rebuilding infrastructure means less or even no profit for the enterprises. As a result, it is not feasible to solve the housing problem in poor neighborhoods through completely market oriented way.

5.6.3 It Is Hard to Remove Poor Neighborhoods

There are indeed situations where cites in western countries reconstructed poor neighborhoods by allocating large sums of money to them. However, because the original residents are of the lower income class, most of them could not afford the rent for the higher end buildings after the reconstruction. Hence, they were forced to move to other poor neighborhoods, this did not solve the housing problem of the poor population thoroughly.

5.6.4 Origin and Reasons for Shantytown Development in Liaoning Province

From the 1950s through to the 1960s, the country was in a recovering construction period. In order to support the country's construction, Liaoning Province

invested heavily to enlarge the scale of resource exploration under the ideology of production first, life later; accumulation is superior, consumption is inferior. In this case, the mining enterprises in Liaoning seldom developed new residential areas except expanding work sheds occasionally in order to accommodate more workers. There was a peak of birth in China in the 1950s and 1960s, which in turn brought about marriage and birth peak in the 1970s and 1980s. A lot of residents in the shantytowns began to build around the ghettos in order to meet the housing needs of their children, which brought about chaotic housing situations in poor neighborhoods.

In the mid- and late-1990s, factors like resource depletion and system transformation led to the closure of state-owned mining enterprises. A lot of workers in these enterprises were laid-off, which worsened the situation in the shantytowns. Meanwhile, the mobility limit between rural and urban areas was loosened and a lot of rural residents moved into urban areas as a result of the development of market economy and urbanization. Since their income was limited, the new poor population had to choose to live in shantytowns where rent was lower. With the exception of very few shantytowns that had drawn the attention of real estate developers because of their location, most shantytowns were developed by the residents themselves, and this led to a lot of chaos.

First, there were many shantytowns to be developed and they occupied a large area. Statistics have shown that as at the end of 2004, there were 55 shantytowns of various sizes in Fushun, with the area to be demolished being more than 3.5 million m^2. In Anshan, there were 34 patches of shantytowns, which covered an area of about 3.28 million m^2; in particular, 577,000 million m^2 of the land was to be demolished, and the number of households involved was more than 15,000. In the whole province, patches of shantytowns covered an area of more than 10 million m^2, with the number of households greater than 350,000 and a population of over 1.2 million.

Second, the shantytowns were far from city centers, which make them hard to develop. For example, the shantytowns in Dandong City are mainly located in the mountainous areas in the northern part of the city; most of the shantytowns in Fushun are located in the mining areas, which are far away from the city center. As a result, lands in shantytowns have little potential and are given out for rent at low prices. Of particular note are the shantytowns in Gangue mountain areas that have no developmental value at all.

Thirdly, the lack of public service facilities in the shanty neighborhoods has made it unattractive to real estate developers. There are no infrastructures like roads, water supply, heating supply, or drainage system in a large number of shantytowns; in some of the shantytowns, hundreds of households share only one public toilet, and there is no water, heating system, gas, or sanitation system. The Medicare system is also incomplete; in many neighborhoods, there is only one clinic of less than 20 m^2 with several beds. Where the medical expertise is very limited, the equipment is shabby and most of the doctors are graduates of Medicare vocational schools. Lastly, shanty neighborhoods lack educational facilities and teaching personnel.

5.6.5 Reasons for the Initial Stagnant Development in Poor Neighborhoods of Liaoning Province

Most of the shantytowns in Liaoning Province evolved from the resource-based cities and the reasons for the stagnation in development of habitation in poor neighborhoods are complicated. However, they can be divided into the following points from the standpoint of history and reality:

They failed to plan strategically for the future development after the original sheds were built. During the construction period after New China was established, the scale of resource exploration was enlarged and more workers had to be employed in order to support the country's construction. Housing at that time was mainly the transitional affiliated buildings, which did not consider buildings suitable for longtime habitation, not to mention having completed service facilities.

The planned economy era and the policies focused heavily on accumulation. Under the ideology of "production comes first and life comes later," investment in fixed assets in the province focused mainly on the easy productive projects, with the productive investment in fixed assets accounting for 88.4 % of the total amount, which decreased the non-productive investment in fixed assets. Meanwhile, resource depletion in Northeast China had shown its trends since the 1980s, but due to the planned economic systems, it was hard to correct within a short time during the transitional period; therefore, the redevelopment and construction of habitation in poor neighborhoods stagnated.

The lagged reform of state-owned enterprises also led to the lagged local economic development. The coal enterprises in the mining areas was owned and controlled by the central government before the reform; most of the profits were remitted to the central government. After the economic reform as well as the ownership reform of the state-owned enterprises, there was insufficient capital for the local governments. Thus, in order to solve the problems faced by the shantytowns, local governments needed to raise large sums of capital within a short period of time; this made large-scale upgrading of shantytowns became a difficult problem.

5.6.6 Strategies of Development in Shantytowns

Demolition in poor neighborhoods has been a problem bothering many cities in the world for a long time. Management Science School of Organizational Behavior believes that equal and general rules, effective and feasible behavior mode, and a proper motivation system are important solutions to problems with collective actions. The demolition of the shantytowns of the province benefited most of the residents while the method of "pushing-in" was employed to ease the pressure of demolition. At the same time, reasonable compensation mechanisms were made to provide incentives to the residents who cooperated with the demolition process, and this evidently improved the efficiency of the process.

In order to finish the demolition tasks efficiently and quickly, the province employed a method of "demolition as a whole, persuasion household by household." On one hand, the cities conducted thorough demolition in batches to eliminate the potential dangers and solve the problems with the shantytowns once and for all. On the other hand, in order to make sure that demolition went smoothly, the cities conducted a household survey on the situation of residents in the shantytowns. This survey at household level was helpful to know the detailed situations in households that were experiencing difficulties and also know the specific difficulties in different families, different compensation items, and standards that could be set in order to improve the efficiency of demolition.

Due to the large size of the demolition area and its ensuing population, there would have been difficulties in moving and paying rent if a large number of residents were moved out of the neighborhoods within a short time. In order to ease the pressure brought about by the integrated demolition, the cities employed the model of pushing forward by batches and encouraging early leavers. During the process of demolition, these cities demolished the shantytowns by batches, which meant that only the houses on which new buildings were to be constructed would be demolished. Next, all the residents moved to the new settlement buildings at once, so that the number of demolished houses only accounts for half of the total. This was a useful approach to give the cities enough time and space to deal with the population. Meanwhile, the residents who moved early enjoyed the rewards of demolition; that is, the rights to choose future apartments first that helped to push the demolition process smoothly.

Demolition is a major problem for shantytown reconstruction. However, to improve efficiency, the province adopted a policy of reasonable compensation to guarantee equality; a policy in which the size of the demolished house will be traded for the size of the newly built movement houses. In addition, the governments helped the residents to solve their specific problems in order to win their cooperation and support. According to the survey, 72.5 % of the residents were satisfied with the demolition compensation, 73.5 % of them were satisfied with the equality of the demolition compensation, 84.2 % of them thought that the governments managed to honor completely or largely their promises to the demolition, 73.3 % of them strongly agreed or agreed to some extent that government provided reasonable and fair compensation conditions during the process of demolition, and that government at all levels had played by the rules (Fig. 5.8).

5.6.7 Strategies and Case Study of Housing Construction in Shantytowns

The situations in shantytowns were complicated, so in order to finish the task of housing reconstruction in shantytowns, many cities in the province adopted the housing development mode of scaled construction and development according to categories. On one hand, these cities were determined to stick to scaled

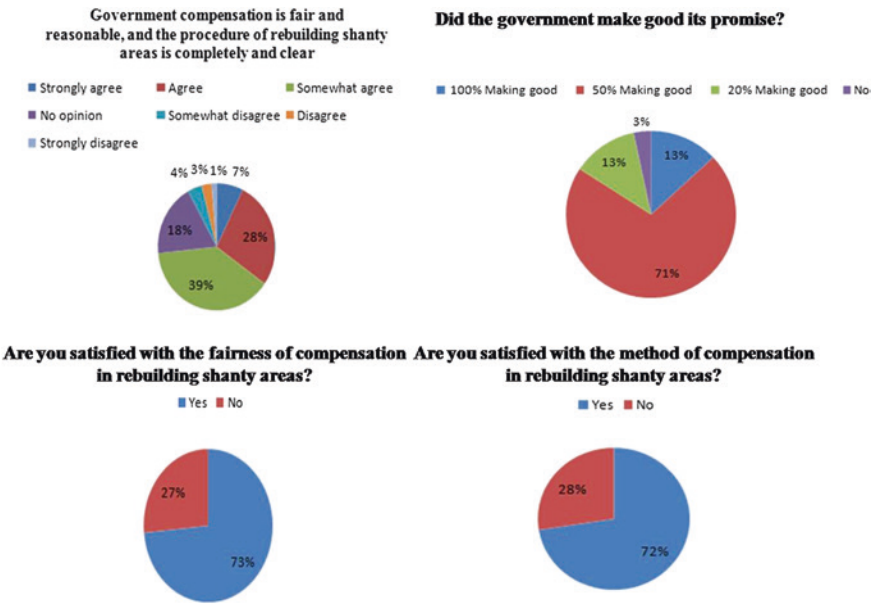


Fig. 5.8 Survey on demolition satisfaction (modified from survey data of the research team)

construction, and conducted large-scale construction with high efficiency. On the other hand, according to the different conditions of different shantytowns, the governments and the market cooperated in different ways to develop these shantytowns. Here are some details:

Given the features of large areas of shantytowns with large number of population, the province decided to develop the larger shantytowns first with higher efficiency and then deal with the smaller ones later. As the shantytowns cover a larger area and the locations were more focused, it was easier for the developers to construct so that the efficiency of the construction was effectively improved. The scaled reconstructions of shantytowns could accommodate a larger number of residents who could assist later with development. Meanwhile, the scaled construction could help with unified purchase and supervision, which not only lowered the cost of raw materials, but also provided convenience to supervision and control over various steps of construction to make sure that the cost of the movement housing is at the lowest level, while the quality is at its highest.

Due to the fact that the shantytowns of Liaoning Province covered a large area and a large number of population was involved, the government adopted the PPP model, which had been widely recognized by scholars. The PPP model is a model that encourages cooperation between the public sectors and private enterprises, which includes service agreement, leasing agreement, contracting agreement, build-transport-operate agreement (BOT agreement), build-operate-own-transport agreement (BOOT agreement), package agreement (wraparound

addition agreement), buy-build-operate agreement (BBO agreement), and build-own-operate agreement (BOO agreement). Different shantytowns were developed by various means based on their own features. For those with great development potentials, contracting agreement, BOT agreement, BBO agreement, and BOO agreement were used; a situation where the enterprises took the lead in construction while the governments provided assistance, so that shantytown construction problems could be solved through the market. However, for those shantytowns in disadvantaged locations and little development potential, service agreements were used; in this case, the governments took the lead, and the residents provided small amounts of capital while the enterprises had the sole responsibility to implement the construction program. This kind of development model, consistent with the features of the shantytowns, solved the housing problems of the poor neighborhoods with flexibility while taking full advantage of the market.

5.6.8 Reconstruction in Shantytowns—A Case Analysis of Benxi City

As the coal mines had existed for almost 100 years, Benxi suffers a lot from coal-mining-caused subsidence. The coal-mining-caused subsidence area of Benxi covers an area of 50.6 km^2, accounting for 6 % of the total area. After analyzing the historical reasons as well as the features of the coal-mining-caused subsidence in this area, Benxi City required a unique development plan during the housing reconstruction of shantytowns; in particular, the Chengjia Community.

5.6.9 Cooperation Between Governments and Enterprises

Benxi City adopted the development mode, which consists of the cooperation between governments and enterprises; however, different locations of the shantytowns employed different policies and operational models. For those shantytowns located close to urban areas with evident development values, the government provided policy support and land allocation and various taxes cut to ease the business of the developers. For those shantytowns with relatively low development value, apart from providing policy supply, the government also provided part of the capital and the state-owned enterprises conducted the specific operations. For shantytowns with no development value, the government provided all the capital needed for the construction; the land is basically vacant, the only asset on which the Construction Committee would operate with.

In order to make sure that the living standard of residents in shantytowns was improved appreciably, the government insisted on the equal standard of housing to that of commercial housing in terms of planning and design. Related technical

regulations had been obeyed strictly to guarantee the quality of the housing. All the reconstruction projects in shantytowns met the energy-saving standard of 50 %, which improved the quality of the housing.

The construction materials that are closely related to the daily lives of common people were all provided by a third party, and the relevant departments authorized the commissioned companies to organize public bid for the purchase. In adhering strictly to the protocols of the bidding process, external construction teams were employed, and external capital, equipment, and managerial experience were introduced; in this way, so that fair competition was created in the construction process.

5.6.10 Strategies and Case Study of Residents Settlement in Shantytowns

The housing settlements in the shantytowns are crowded quasi-public goods that are classified in the category of social security. Given the nature of social security and exclusivity of quasi-public goods, the purchase of housing in Liaoning Province had been with discount and the exclusivity of the housing allocation so that the housing could be affordable to residents. In addition, given the crowdedness of the settlement, residents of shantytowns in the province were settled in batches, to ensure efficiency of settlement and to realize the original goals. Table 5.5 shows the size and price of settlements per m^2 in the upgrading process of shantytowns.

Due to the fact that crowded quasi-public goods also have the nature of low price and exclusivity, the purchase of settlement housing in shantytowns must be with discount, and the usage of the housing has to be guaranteed. In order to realize the three major objectives of "affordable, convenient, and stable," Liaoning Province offered great discount to residents in shantytowns, which reduced to a great extent the economic burden of residents. First, the residents had to pay only a small amount of the cost for part of the settlement building, which is as large as their original housing, and the extra size will be charged by cost of production, which kept the cost of settlement building to 20,000–30,000 ¥—that is way below the market price. Secondly, there are policies regarding the lowest living security households or quasi-lowest living security households in many cities, where low-income households will be offered multiple assistance: There will be no extra charges for the lowest living security households. In addition, the costs of

Table 5.5 Survey on settlement of residents in upgrading shantytowns

Size of the within-standard housing _____ m^2	Average (m^2)	51
Size of the extra-standard (self-afforded) housing ___ m^2	Average (m^2)	11.6
The construction price per m^2 of your current new apartment is ____ ¥	Average (m^2)	1,105
The price of extra-quota per m^2 you purchased is ___ ¥	Average (m^2)	945

Modified from survey data of the research team

the reconstruction of shantytowns will be shared by the original residents, and the settlement housings can only be purchased by original residents, which made it impossible for non-original residents to purchase the settlement housing.

5.6.11 Case Analysis—A Case of Benxi City

Benxi is a resource-based city majoring in coal and steel, with 32,715 households in shantytown reconstruction areas. During the process of reconstruction, the city formed a settlement mechanism, which was fair and equitable; public, transparent; and suitable to local conditions.

In Benxi, there were five policies regarding purchasing settlement housings: "Change the old to the new at zero costs, guarantee the affordability of settlement housing with discount, change the small housing to a bigger one at production cost, benefit common people with limited price, and pay the market price if you want better and larger houses." To be specific, the residents could exchange their old houses with new settlement housing of the same size for free; they will have to pay for the extra size of the new houses at production cost. For households with financial difficulties, the settlement housings could be leased to them as low-rental housings for a certain period of time until the residents pay off all the costs. A few settlement housings could be sold as commercial housings to provide subsidies to residents to further lower the cost of settlement.

The location of settlement housings will be different according to the features of different shantytowns, as the new housing will be located both in the original place and in other places. The shantytowns in Benxi were divided into two categories: shantytowns outside the coal-mining area, which is located on the southern part of Taizi River. Shantytowns in this area enjoy a better location; the housing price is higher as the service infrastructure is relatively better, and the residents are more willing to live here for a long time. A "local settlement" plan was made to guarantee the interest of the local residents in this area. The other categories of shantytowns were in the coal-mining areas, which are mainly located on the northern part of Taizi River, where it was impossible to settle locally due to serious geographic problems. Alternative housings were therefore provided in other places where the environment was better. Settlements were done step by step and in batches so that the efficiency of reconstruction could be guaranteed, and the housing pressure of residents could be eased. This way, there would be adequate time and space to deal with the housing needs created by upgrading shantytowns.

As regards settling in different places, two methods were adopted: "choosing according to your own will" and "determining through lottery." Similar to the entrance examination in China, residents could apply for different locations according to their own preferences, and these applications would be submitted to the central office for shantytown reconstruction. If all the first-class applications can be satisfied, all residents can move in as they wish; if not, a lottery will be

held according to the first-class application. Those who win the lottery can move into the settlement area, those who lose can enter for another round of lottery, until they win the lottery. Since there are plenty of houses, there will not be a situation where some residents have no houses to live in.

In order to make sure that the settlement was open and transparent, Benxi City adopted the "sunshine operation": mode so that the legal rights of the residents would be properly protected. With regard to the allocation of settlement housings, everything was done to avoid "opening the backdoor." The settlement housing allocation was based on the principle of open, fair, and equal; and the plan, procedure as well as the results of allocation would be published and made available in the public domain. As to the supervisory bodies overseeing the settlements, there were checks and balances in departments; besides, the municipal Committee for Disciplinary Inspection, Supervision Bureau and the Notary Office, the sub-district office, representatives of the communities, and residents of the demolition areas were involved in supervision. In this way, the transparency of settlement was strengthened, and the legal rights of residents were fully protected.

5.6.12 Management Mode of New Settlement Areas

The management of settlement areas is an important part of the shantytown development, which is also a significant element influencing the stability of the system and comfort of the residents. In his "On the Application of PPP Model in Urban Public Goods," Dr. Hou Jun mentioned that the "Operate Manage" Contract between the public and private sectors could achieve better results than unilateral public action. In order to achieve the objective of providing residents with better and stable housing conditions, Liaoning Province adopted the property management mode of self-service management, with the government laying the foundation.

After the completion of the settlement areas, the residents will organize how to manage the communities all by themselves while the costs of property management and maintenance will be covered mainly by the government, with the residents paying only a small fraction (about 0.1 ¥/m^2). Meanwhile, certain amount of capital was reserved for maintenance. According to the requirement of reconstruction of shantytowns, a proportion of the extra-sized cost paid by residents during the process of settlement will be used as the seed capital; this belongs to all the residents and will be saved in a particular account and used for particular purposes. Housing can be constructed or reserved in certain communities for commercial purposes, to meet the needs of the community. The operating profits can then be used to supply the costs of community management and maintenance, or to subsidize the property management fees of residents in financial difficulties. With the government as the last resort, the

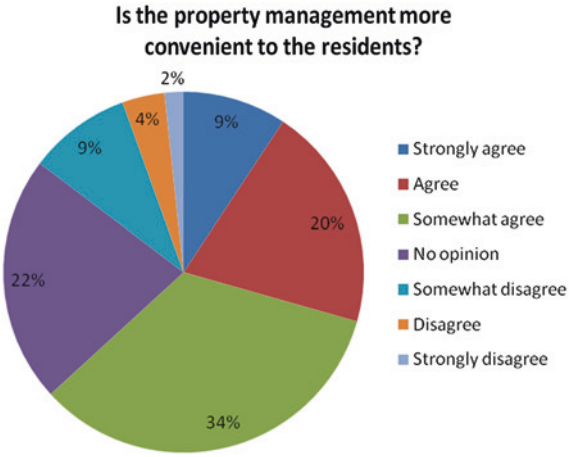


Fig. 5.9 Property management survey in new settlement areas (modified from survey data of the research team)

self-service property management mode has greatly lowered the daily cost of residents in the new settlement areas and provided jobs for some of them, which helps to guarantee that the residents live well and comfortably. Figure 5.9 shows that 63.2 % of the residents were of the opinion that the property management style was more convenient for the residents, and they have therefore approved the self-service property management mode with the government as the last resort.

5.6.13 Case Analysis of Community Property Management

The Modi Community in Fushun City was built during the reconstruction of shantytowns, and its developer was Fushun Zhongmei Company, with a local name No. 19 Branch of Zhongmei. This community mainly consists of disadvantaged people and households in financial difficulties. There are 106 buildings in the community, which means 6,400 households were meant to be living there, but statistic showed that only 5,900 actually lived there. There were only 13 property management staff that carried out the sanitation and daily maintenance work of the community.

The property management jobs were positions concerned with the public maintenance and welfare of residents, and the salary for the management staff is about 950 ¥ per month; out of which, 200 ¥ comes from the urban area subsidy. The costs of property management of the community are part of government finance that will be covered by the district government. Most of the property management staff are residents of neighboring communities who can

quickly find their way into Modi community in cases of emergency. Usually, they come into Modi during the day and travel back at night when their job is done for the day.

In order to ease the financial burden of the residents, all their daily needs are supplied free of charge, and the only fees the residents need to pay is the service fees for public facilities, which is only 0.1 ¥/m^2. Given the fact that the construction size of an ordinary family is between 45 and 60 m^2, the service fees for public facilities for a household will be between 4.5 and 6 ¥ per month, which is not a burden to most families. The service fees for public facilities will be handed to the district finance department at the property management office where funds will be allocated for the daily cares of the community.

Property management jobs are concerned with how to take care of the environment, including sanitation, security and daily maintenance. The management team can also assist residents when they encounter difficulties. Although the repair of water pipes, electric circuit, and electronic appliances are not tasks to be handled by the management team based on the nature of these jobs; the property management team still endeavor to solve these problems as residents of Modi Community are used to turning to their property management team whenever there is a problem, so that the staff are busy all day long.

At present, there are some difficulties encountered by the community. First, there is the issue of lack of staff. Presently, there are 13 property management staff altogether; these include 6 for maintenance work and 7 who cater for other services. This therefore means that on the average, each staff will have to serve approximately 1,000 households; and in cases of clogged drains or power outage in the community, the property management staff will have to contact and liaise with the Water Company and electricity authorities to solve the problem. Although the property management staff are working very hard, they are yet to meet the daily needs of residents as there are a large number of them in the community. Secondly, there are some technical and financial problems in carrying out maintenance and repair. Due to geographic and weather reasons, mud–rock flow is likely to happen after heavy rain in this area. This becomes a problem for some households whose roofs are leaking. Situations like these are hard to deal with especially since there are no spare construction materials or professional construction technicians.

Housing development is the core step in shantytown reconstruction of Liaoning Province. Since 2005, the project has involved the demolition and reconstruction of 29.1 million m^2 of shantytowns, 44.02 million m^2 of settlement housings have been built, and 2.11 million residents of 706,000 households have moved from the shantytowns. During the large-scale reconstruction that took place between 2005 and 2008, the province adopted a development mode of "government gives away interest, multi-participants, demolition and construction with integration, and settlement at low cost," and the shantytown reconstruction tasks were finished with high efficiency within a short period of time. In this way, the objectives of making the settlement affordable, comfortable, and stable to the residents were achieved.

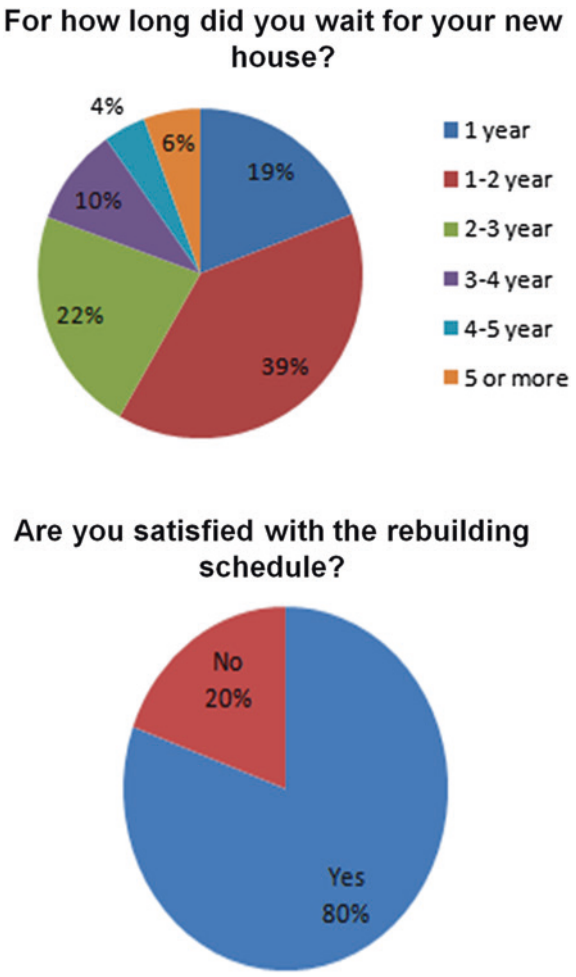


Fig. 5.10 Survey on efficiency and satisfaction of housing development (modified from survey data of the research team)

Various methods were employed during reconstruction of shantytowns to improve the efficiency of development. There were projects in Fushun, which have efficiently achieved demolition, construction, and settlement within 1 year. According to the survey in Shenyang, Fushun, Benxi, Tieling, Fuxin, and Chaoyang, 58.2 % of projects took less than 2 years from demolition to settlement, 80.5 % took less than 3 years, and more than 80 % of residents were satisfied with the housing development (Fig. 5.10).

The reconstruction projects in shantytowns have improved the basic conditions of residents as well as the quality of housing. In the survey in Shenyang, Fushun, Benxi, Tieling, Fuxin, and other cities, the research team found significant increase in the size of housing: from 39 m^2 before the reconstruction to 57 m^2 after construction, with an increase of 46.15 %. In addition, the size of housing per

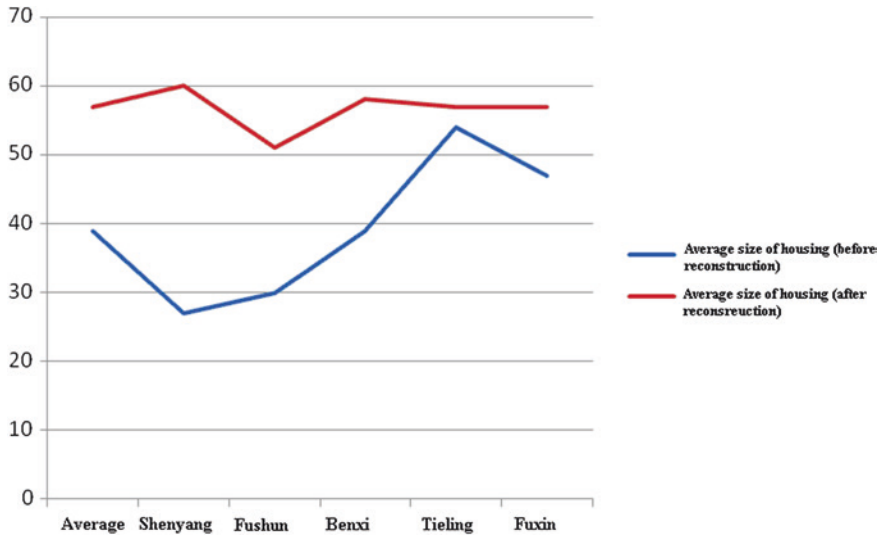


Fig. 5.11 Average size of housing before and after construction (modified from survey data of the research team)

capita has also risen from 10.6 m^2 before the reconstruction to 16.6 m^2 after construction with an increase of 56.6 % (Fig. 5.11).

In order to ensure that the living environment of residents has completely improved, the design and construction of the settlement buildings share the same standard with the current commercial buildings. National technical standards were strictly obeyed, and the project quality was well under control. All the reconstruction projects in shantytowns have reached a 50 % energy-saving rate, which has improved the quality of housing. The construction materials in shantytowns were all purchased by the government. In addition, both residents and the society were allowed to participate in construction supervision, and the quality of housing changed completely. In relation to housing, the settlement buildings were all equipped with toilets, shower rooms, living rooms, and so forth, which was a great improvement compared to the old houses in shantytowns, which had only a bedroom and kitchen. There were now many types of rooms with the size ranging from 35 and 45, to 55, 65 and 75 m^2, suited to meet the needs of different residents. According to the survey, 90 % of the residents are of the view that the settlement housing was comfortable, and 93 % of them believe that the settlement housing was more comfortable than the original buildings (Fig. 5.12).

During the process of housing development, the government has, on many occasions given incentives to people in demolition, house construction, settlement, and property management; meanwhile, many actions were also taken to lower construction cost and improve house quality, and this has solved many problems for the residents. In addition, residents were allowed to participate in the supervision

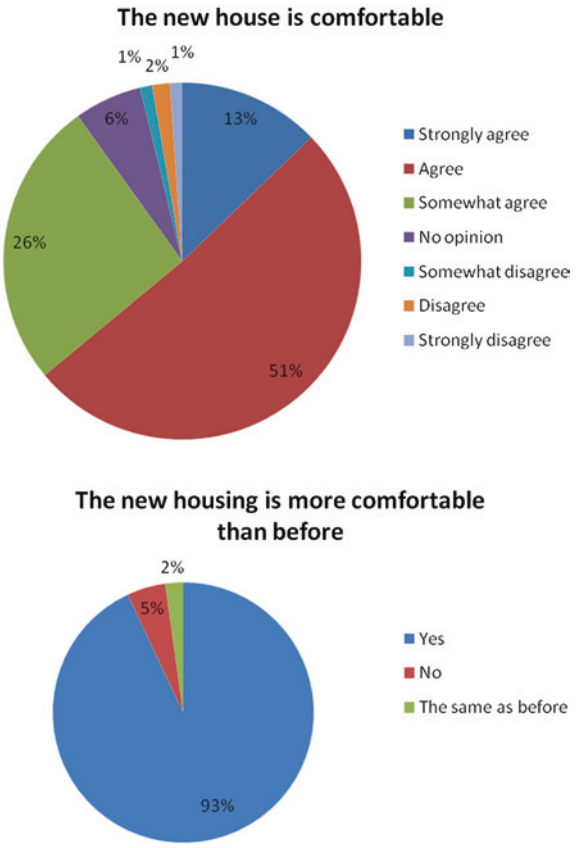


Fig. 5.12 Survey on the degree of comfort of housings in settlement areas (modified from survey data of the research team)

process, which has effectively improved the image of government and the satisfaction of residents. According to the survey, 80.3 % of residents are of the opinion that the allocation of houses during the reconstruction process was fair, and 46.3 % of them are now more satisfied with the government (Fig. 5.13).

5.7 Upgrading Shantytowns in Liaoning: The Ability of Resident to Pay

Low-income housing is a worldwide problem.[1] Various countries have done a lot to solve this problem; for example, Brazil has passed the law called "Profavela," Mexico has also established bank housing financing funds (FOVI)

[1] Aspects of this chapter were contributed by Zhang Zhanli.

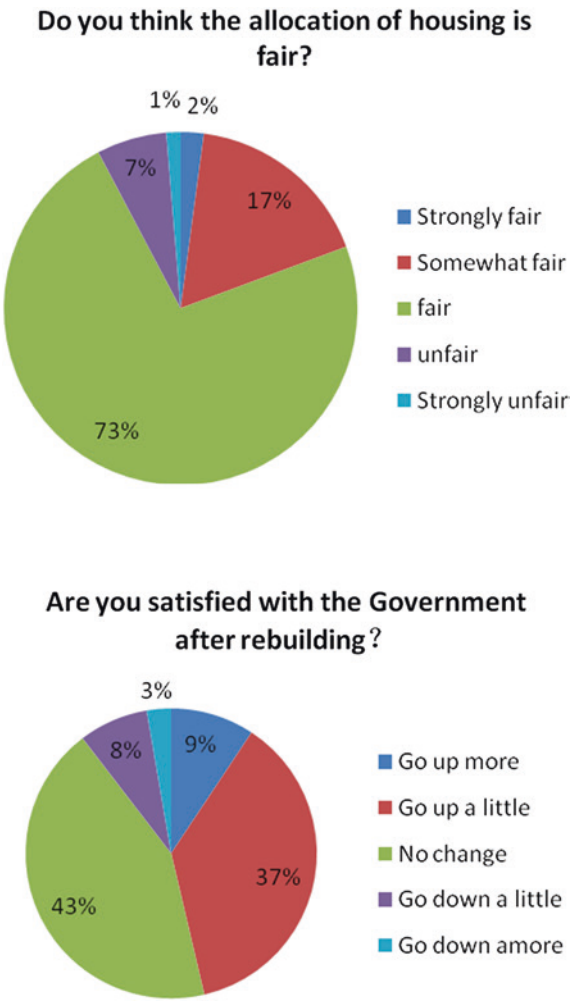


Fig. 5.13 Fairness in housing allocation (modified from survey data of the research team)

with the hope that these sources will help low-income families solve their housing problems. South Africa enacted laws to provide 200 L of safe drinking water for each household daily in order to ensure their health and safety (UN-Habitat 2006) and also try to provide basic protection for the lives of the disadvantaged groups. Efforts made by these countries help to ameliorate the conditions of people living in slums, shantytowns, and other low-income areas. Though housing problems eased initially but as one problem is solved, another emerges. In China, by the end of 2008, there were 11.48 million families, 7.44 million in urban shantytowns, 2.38 million in the state-owned mining shantytowns, and

1.66 million in forest and reclamation shantytowns. Of these families, there were 6.81 million low-income households in hardship, and 4.67 million lower-middle-income households. It can be said that despite efforts made to address the sustainable pay ability of shantytown residents, China still faces many serious challenges.

To a certain extent, there are resemblances in the level of income between residents of shantytowns and those people living in slums in other countries, they all belong to the low-income class. To this end, governments have taken many positive actions; the USA has attached importance to the education of low-income groups; France and Argentina have helped the low-income group to increase their income through tax cuts; Brazil through the improvement of infrastructure has provided better conditions for residents' income growth, it has also increased employment opportunities for youth living in slums. Despite all these, slums still exist widely in many countries and regions; in Brazil, Rio de Janeiro alone has 250 slums, large and small and Bombay has nearly 2,000 slums. The average monthly income of people living in Dharavi, Bombay, is only $10. Improving the living standards of people living in slums remains a global enduring challenge and the key to transformation of shantytowns or slums.

From Friedrich Engels in the nineteenth century to Jacob Riis in the twentieth century, and then to the twenty-first century UN-Habitat report: "The Challenge of Slums," the research content on slum has enriched our knowledge and has become an important branch of City theory. With the increasing acceleration of urbanization, urban "informal housing" and growing slums have become a global problem. It has been analyzed from various angles, such as social polarization theory, economic restructuring and socioeconomic transformation, low-income residential housing, etc. With regard to issues of sustainable and stable pay ability of shantytown residents, conducted research on "a weekly earnings pay a monthly rent" in the nineteenth century. The literature shows that more studies were conducted subsequently on the causes/formation of low-income slum groups, housing needs, and so on, compared to studies on how to improve the residents' income after transformation. The pay ability of shantytown residents is a field that needs in-depth research.

Theories about the ability of sustainable pay of shantytown residents are rare; even in practice, due to the social stratum polarization, caused by increasing unemployment, unequal opportunity and lack of income security.

This section of the chapter draws on a research work that investigated the problem of sustainable pay ability of the low-income group through transformation of shantytowns in Liaoning, and provides reference for other areas of China and other countries in the world. This research concludes that Liaoning shantytowns transformation is not only a housing renovation for low-income groups, but also a significant social innovation for increasing incomes. Increasing income and reducing expenditure is the core; this is through training, employment, social assistance services, and so on. Liaoning realized increasing income and reducing burden, not only solve the housing problem, but also resulted in the sustainable pay ability (see Fig. 5.14).

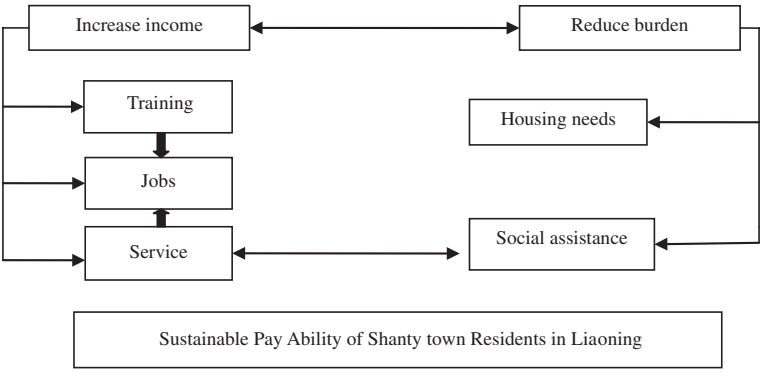


Fig. 5.14 Sustainable pay ability of shantytown residents in Liaoning: a framework

5.7.1 Conditions of Shantytown Residents in Liaoning Before Transformation

Looking at the vocational structure, Fig. 5.15 shows that a larger percentage (43 %) of shantytown residents works for the state-owned enterprises, followed by the private sector workers; less than 7 % (6.7 %) of them are laid-off workers. Vocational distribution shows that with Liaoning as an old industrial base, the state-owned enterprises, especially the coal enterprises were more wide spread. As a result of the enterprise reform and resource scarcity, the social status of residents who work in state-owned enterprises experienced a decline; workers who were once in the relatively high class became a set of vulnerable people. With regard to age distribution, shantytowns are mostly occupied by older people as more than 85 % of shantytown residents are above the age of 40.

In recent years, the national housing prices rose sharply. This affected practically everywhere in China. As an old industrial base in northeast China, the real estate market equilibrium in the province was also broken. From the second half of 2009 to the first quarter of 2010, the real estate market prices of Shenyang, Dalian, and other central cities in Liaoning have all risen sharply. On an annual basis, the growth rate of real estate in the province from January to June 2010 was 31.5 %, and year-by-year growth rate of real estate sales was 48.7 %. While for low-income people, in 2009, the lowest earners' income compared to house prices was as high as 29.67 (the ratio of house prices and income is used to measure whether there is a bubble in China's housing market. It is one of the important indexes to measure whether the housing price is reasonable). Basically, many do not have the ability to buy houses, as the housing prices were too high and the income was low.

The survey as shown in Table 5.6 reveals that the annual income of families in shantytowns is below 25,000 ¥, and this accounted for about 75.1 % of the total number of respondents, less than 11 % (10.6 %) have incomes between 25,000

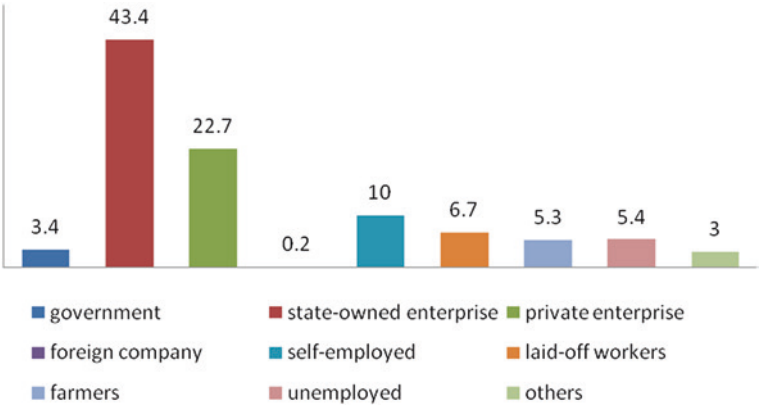


Fig. 5.15 The composition of shantytown residents in Liaoning Province (percentage) (modified from survey data of the research team)

Table 5.6 Income statistics of shantytown residents in some areas of Liaoning Province

Income(¥)	Mean	Shenyang	Fushun	Benxi	Chaoyang	Tieling	Fuxin
≧10,000	16.6	6.8	30.6	6.3	7.4	15.0	35.7
10,000–15,000	18.5	18.4	25.4	8.7	9.9	20.9	30.5
15,000–20,000	23.6	40.1	22.0	14.5	18.8	31.6	16.7
20,000–25,000	16.4	18.4	11.5	35.7	12.1	13.1	9.0
25,000–30,000	10.6	11.6	4.8	15.0	15.8	11.7	3.3
30,000–35,000	5.8	3.9	0.5	11.6	13.2	1.9	1.4
35,000–40,000	5.1	0.5	3.3	7.2	12.5	3.4	1.4
40,000–50,000	2.4	0.5	1.0	1.0	7.0	1.9	1.9
50,000≦	0.9	0.0	1.0	0.0	3.3	0.5	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Modified from survey data of the research team

and 30.000 ¥, while very few (less than 15 %) earn incomes more than 30,000 ¥. Statistics shows that most shantytown residents are low-income earners. In addition, a survey of four urban squatters in Fushun shows that 75.5 % of shantytown residents earn monthly incomes of less than 500 ¥.

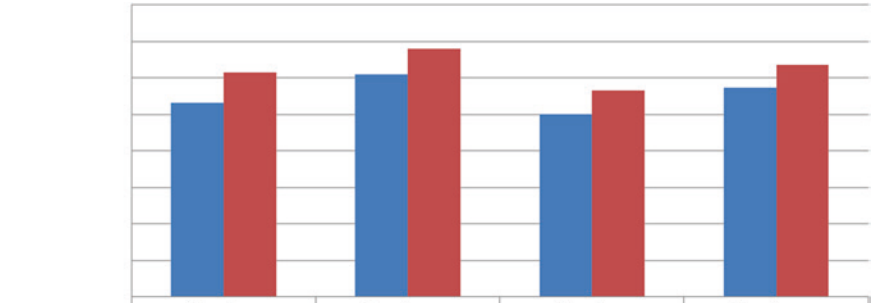
China established some new big unit enterprises in the suburbs far away from downtown or in the urban fringe and constructed living quarters on a large scale for workers around the factory. From 1953 to 1957, while China established key projects, it began to imitate the Soviet model, that is, building factories and at the same time building living quarters for workers. It is a way of making life convenient, but more importantly, it reflects the principle of superiority of socialism over capitalism. With the collapse of the enterprises, subject

to limited government finances, it became difficult to meet the needs of the residents. Similarly, Liaoning Province had difficulty resolving the needs of the residents living in the shantytowns as a result of limited financial capacity. In 2003, the GDP in the province was 600.25 billion ¥ and 1.344993 trillion ¥ in Guangdong, which is also lower than the national average. Previously, shantytowns were mostly transformed and developed by property developers. The developers did so from the market management angle, with the purpose of making profit. The shantytowns without development value are difficult to transform through the market investment activities, thus using a real estate development company to solve the shantytown housing problems. However, in the blank market area, government intervention is insufficient; in a place where there is market failure, the government fails too, leaving the demand for housing in shantytowns unresolved.

5.7.2 Measures for Raising Living Standards and Impacts

After the establishment of new China, the government has been dedicated to solving the income problems of low-income groups, though there has not been a significant change. As at the end of 2004, the province still had concentrated contiguous shantytowns of more than 10 million square meters, 350,000 families, and more than 120 million people. From 1978 to 2005, that is, in 28 years, transformation of Fushun city was just over 70 million square meters; most were low-income households, and shantytowns gradually reduced to the "proletariat" of the city. According to statistics, by the end of 2003, 75,434 people in Fushun had enjoyed subsidies from the government, with 46 % of the total number of subsidies being enjoyed by residents of shantytowns. The number of low-income shantyown residents is 113,400, 47.68 % of the total population living in shantytowns, and 69.2 % of people benefitted Dibao. The income levels of the remaining shantytown households are only slightly higher than their minimal needs and most of them are in the "low edge." The reasons for these areas as follows:

First is the transformation of the economy, the increased unemployment of the laid-off, and the lack of sources of income. With the establishment of the economic system, which is compatible with the market economy, enterprise restructuring and adjustment of economic structure, the depletion of coal resources, decline in coal enterprise efficiency and economic inefficiency, shantytown residents became low-income people, with poor living conditions, low social status, and poor ability to pay. From 1996 to the end of 2001, 828 enterprises in Liaoning had gone bankrupt, involving 13.27 billion ¥, and with 870,000 workers. The bankruptcy of state-owned enterprises and resource depletion therefore resulted in some workers being laid-off, and this caused the unemployment of many residents in the shantytowns, such as the unemployed miners in Fuxin XinQiu shantytowns. Low-income households make up 90 % of shantytown population and rely mostly on government relief as they cannot afford



	Liaoning	national average	Liaoning	national average
	family total income		disposable income	
March, 2002	533.04	609.09	499.81	573.55
March, 2003	615.09	681.25	566.79	635.05

Fig. 5.16 The comparison of family income in Liaoning and the national average level (¥) (modified from the People's Government of Liaoning Province)

to buy new houses, and they lack the necessary funds for housing transformation. Figure 5.16 compares the family income in Liaoning with the national average level (¥).Generally, the overall income in Liaoning Province is below the national average. In March 2002, the average family income in the province was 533 ¥; in that same period, the average national level was 609 ¥. The same trend was observed in March, 2003. These financial problems cannot be solved by families alone. Secondly, financial assistance from the government is limited and therefore plays a minimal role in improving their pay ability. This also means that it was difficult to achieve sustainable income security, and sources of income by the social transfer payments, social security, social assistance, and other initiatives to help low-income people in shantytowns were difficult to come by.

5.7.3 Specific Measures for the Transformation of Shantytowns in Liaoning

In the transformation of shantytowns, Liaoning adheres to the principle of unity and flexibility to ensure that shantytown residents can live in the new house to realize the dreams of housing. First of all, the person who has better economic conditions, and who can pay all the appropriate dues will have the first access to live in the new house. The government, as quickly as possible, handles the real estate license and other procedures for the new accommodation. Second, the poor people whose income and assets condition can pay part but not the full money for extension of the construction of new houses can live in it and pay the money at

regular intervals, and when the money has been paid-off, they would have their housing ownership certificates. Finally, for the destitute families with poor economic situation, residents have only part of the housing property rights. The area of the expanded property is owned by the government, with the rent charged in accordance with the low-rent housing standards; for the groups who cannot afford the rent, the government's property management department keeps record and pays the rent for them. In order to help and care for the low-income people, Fuxin city, for example, introduced measures such as the preferential policies of the minimal needs of destitute families and guaranteed the welfare of poor households. A reasonable expansion area to the destitute families who have the housing property rights can have a subsidy of 200 ¥/m^2. Special needy families were allowed to move into the new houses or manage the houses as low-rent houses; with 0.5 ¥/m^2 paid as rent per month. There would be no subsequent increase in house rent or house price. People with serious illnesses, say husband and wife who have lost the ability to work and are enjoying Dibao subsidy, can pay 19.2 ¥ per month to rent houses indefinitely.

The transformation of shantytowns involved about 121,007 households, and 17,606 households close to Dibao, to make a total of 138,613 households. More than 70 % of residents in shantytown are unemployed families with husband and wife being unemployed, household income is very low, and they live difficult lives. In transforming the shantytowns, the relief was strengthened also, including long-term aid and temporary relief, in order to achieve the goal of stabilizing the lives of the residents.

First, temporary special assistance was rendered. Liaoning Province solved the difficult problems of low-income groups through medical assistance, education aid, poverty relief, helping the poor, funeral relief, temporary relief, and other forms of special assistance. For example, Benxi City gives the Dibao target of the shantytowns interim relief, with the subsidy standard not less than 200 ¥ each time to ensure that the households with temporary difficulties can receive timely assistance. During the 2011 New Year's Day and Spring Festival period, the government released temporary relief of not less than 500 ¥ to each household. In 2012, during the same festive period, government issued one-off living allowance for urban and rural poor people of 300 ¥ per person.

Second, long-term relief mechanisms was set up; relief standards was enhanced and aid efforts increased. Since January 1, 2012, the Dibao standards of urban and rural residents were improved in the province, and the low standards have been improved by 15 % on the average. In principle, the increase of the monthly standard is not less than 50 ¥, this is done in order to effectively guarantee the basic living conditions of low-income groups of the shantytowns. Security mechanisms was innovative as the aid station and the union supermarket was made to play more important roles. In the new house area in Fushun alone, 13 aid stations were established by the Municipal Federation of Trade Unions, and an accumulative total of nearly 60,000 people in need was helped. The relief funds paid and the materials used were valued at 11.16 million ¥. The federation of trade unions in BenXi introduced a new "integration" supporting mode, which consists of the

trade union supporting stand and union Huimin supermarket, which sells goods to low-income people at relatively low prices. The union set up a real family supporting account for almost 5,000 shantytown residents close to enjoying Dibao, issued them a "Huimin supermarket card," recharged with 100 ¥ per quarter for free; with the card, residents can buy goods below 10 % market retail price of homogeneous commodities. Organizational innovation makes the security work more effective in helping the poor.

Social assistance is an important part of the social security system, and an important mechanism to the disadvantaged groups. By combining long-term relief and interim relief, strong assistance is guaranteed for shantytown residents, which gives them an equal opportunity and personal development opportunity to share the socioeconomic development achievements.

Training is meant to improve the vocational skills of workers, and it is an important means to become gainfully employed. Employment is a way to increase one's income; the main way to realize sustainable income. For sustainable income to be realized, training needs to be strengthened, and an information platform should be set up so as to pave the way for employment. In the transformation of shantytowns, in order to help the unemployed obtain jobs again, the province paid special attention to vocational skills training for low-income earners; in Benxi City, residents of shantytowns who move back enjoyed free skills training from more than 50 training institutions with training qualifications in order to improve the quality of their professional skills and enhance their employability.

In addition to training, the public employment services make full use of the community work platform that actively provide employment and reemployment services, free information on employment, provision of jobs to laid-off workers, and they also carry out labor and employment skills training. Fushun City has organized job fairs 30 times, providing information forever 30,000 jobs which led to the employment of 9,200 people; as a result of this, the laid-off residents were able to move into new houses, and at the same time obtain re-employment. There was also the need to promote employment and reduce the number of families where both husband and wife have no job. Liaoning combined employment with the transformation of the shantytowns. The government attracted back enterprises supported the shantytowns through preferential policies and built a new set of labor-intensive enterprises, job markets, and so on, with the hope of promoting employment for shantytown residents especially for families where both husband and wife have no job. The government took several measures to get at least a few low-income residents employed, provided free education for their children in vocational technical schools and helped them obtain employment as a means of increasing their income.

Training and employment can meet the demands of human capital, enhance the level of human resources, and promote the living standards of shantytown residents. These are important means for achieving sustainability.

Financial support (small loans and venture funds): In order to facilitate the residents to get venture funds, Liaoning specially supplied various kinds of provisions; for example, "venture capital management measures for the shantytowns'

residents," for them to start their own businesses. Firstly, there are the preferential policies of microfinance in which self-employed small loans of at most 20,000 ¥ can be borrowed and the community can provide guarantees. Secondly, government has its own fund-supporting policies. Shantytown residents who move back were given a capital support of 5,000–10,000 ¥ for self-employment. Business capital for self-employed shantytown residents who moved back was a leading fund not necessarily for the purpose of making profits, but to provide business security. In this process, People's Bank of China, Shenyang branch, successfully developed the "credit community + entrepreneurship training + small loans" mode, which effectively supports the shantytowns' project. By the end of 2008, Fushun City had established five credit communities, involving 16,780 people who moved back, with the total loans issued to them being up to 10.34 million ¥.

Technical support: In order to ensure that shantytown residents live in stable houses and have sustainable income resource, their entrepreneurial skills were improved. Therefore, the Locals all took training measures to provide technical support and services, and this created the new wave of shantytown business market, which enhanced the employment ability of the shantytown residents. In 2007, Fushun City spent 11.5 million ¥ on the construction of employment training centers, opened 78 training courses that involved 3,325 people, and at the same time, created seven new job markets that employed more than 500 people.

The allocation of land to build markets: During the reform process of Liaoning Province, most urban lands was vacated for industrial parks or business markets, in order to provide employment or entrepreneurship opportunities for the new city residents. For example, Fushun City, in an attempt to encourage the entrepreneurship of shantytown residents, specifically introduced this policy; it made use of vacant lands in shantytowns to plan and construct three industrial parks and seven venture markets, which gave rise to 1.3 million job placements, thereby supporting shantytowns' reform. There are more than 100 entrepreneurial leaders who supported the shantytowns' reform and encourage the creation of "no fence factory" and small micro-enterprises, so that part of the people at home would be able to have gainful employment.

5.7.4 Effect and Evaluation

The transformation of shantytowns in Liaoning Province is not only an important initiative to solve the problem of low-income housing, but also has a significant effect on large-scale employment projects. It solved the problems of 19,347 families with no jobs and helped 80 % of laid-off residents to be re-employed. In the transformation of shantytowns in Beipiao City, in the peak period of construction, 10,000 persons were directly engaged in construction and management, and more than 3,000 people rendered services indirectly for shantytown reform. In the new residential districts, through the use of residential property management for the

development of community service industry, laid-off workers were re-employed; lands vacated by the shantytowns were put to maximum use by construction of small labor-intensive businesses, entrepreneurial markets, farmers' markets, and so on. In this way, the combination of employment in and after the transformation of shantytowns achieved good results. In Fushun alone, the employment rate of shantytown reached 95.7 %, a situation where residents can basically get a job as long as they are willing to work. Residents could move into new houses because they could afford it. These ensured that residents of the sheds live comfortably in the new houses.

With increasing entrepreneurship, the employment situation improved; the income of shantytown residents' also improved greatly. Household income after the reform of the shantytowns increased from the original 20,828–31,035 ¥, and the residents' income also got a lot better too. In the different levels of income distribution, Fig. 5.17 shows that the proportion of people who earned income under 25,000 ¥ dropped from 75.1 to 37.6 %; the proportion of those whose income ranges from 25,000 to 30,000 ¥ increased from the original 10.6–22.3 %, and the proportion of those who earn more than 30,000 ¥ rose from 15 to 40.2 %. The increase in income improved the purchasing power and is fundamental to the solution of housing demand. The survey also found out that some residents that are currently living in the new houses (7.4 %) already have other housings, and some of them now have the financial ability to purchase new houses (3.7 %).

Through a combination of long-term and interim reliefs, increase in household income and reduction in cost of living have been achieved. This has helped shantytown residents to solve the practical difficulties in life, and many of the residents now live comfortably. In addition, with social assistance, the society significantly

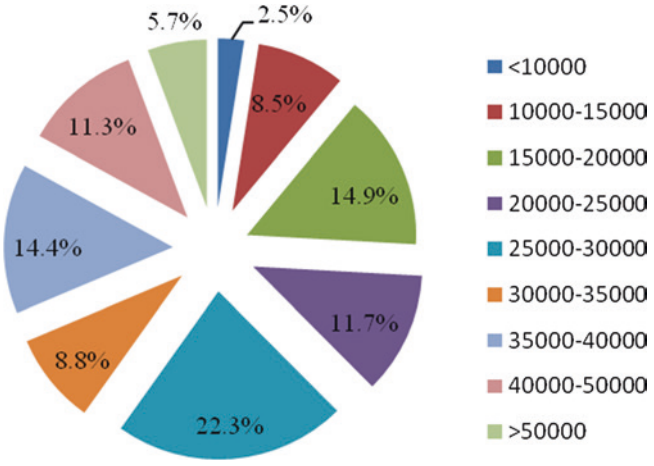


Fig. 5.17 Income distributions after the transformation of shantytowns (¥) (modified from survey data of the research team)

improved the living conditions of shantytown residents, thus narrowing the housing gap between them and other residents in the province. The transformation of shantytowns not only improved the living conditions of people, but also made vast majority who initially did not have the economic power to now own housing assets worth hundreds of thousands of Yuan. Take for example, a household that has an housing area of 20 square meters with the market price of 1,600 ¥/m^2 before the transformation, will only pay 17,500 ¥, and they can then obtain a 45 m^2 replacement housing valued at 72,000 ¥, which can be added to the income of the residents.

5.7.5 Experience and Enlightenment

To address the issues concerning the sustainable pay ability of low-income persons, the upgrading of the external factors and internal forces must be combined; that is convergence of social assistance and individual employment. Due to limited personal capacity and low resource endowment, low-income people often find it difficult to meet their own needs (such as housing and other big purchases) through market forces; therefore, the intervention of external forces is needed to improve their pay ability. Although social relief can temporarily solve low-income difficulties, however to improve their capabilities will involve long-term measures. Thus, along with social assistance, there is also need to promote employment of the population and emphasize lifelong personal improvements to improve the sustainable pay ability of residents.

China's per capita GDP was more than $4,000 in 2010, indicating that China has officially entered the ranks of "middle-income" countries as China's modernization process entered a new stage. In 2011, China's urban per capita disposable income was 21,810 ¥, a 14.1 % growth per year. Rural per capita net income was 6,977 ¥, and a year-by-year increase of 17.9 % (CNBS 2011). However, due to many reasons, as a representative of the residents in shantytowns group, their income growth is low and with time the gap between the rich and poor has also widened. Thus, diversification of housing security mode or combination of relief and employment should be measures taken to increase the incomes of low-income persons.

Distributive justice or social justice, and economic justice require the state to ensure the distribution of property to the whole society, so that everyone can get a degree of material means (Samuel Fleichacker 2010). To solve the problem of low income in order to achieve sustainability, there is need for redistribution of income; this points to the pursuit of social fairness and justice. China's reform and opening up have outstanding achievements, but the future will face new, severe challenges; one of which is how to achieve a new leap forward for everyone in the society. To achieve a new level of social fairness and economic stability, there is need to improve income distribution, improve the income of low-income groups, expand the moderate income group, namely "enlarge the proportion of average income, and improve the income level of the low-income earners," alleviate

anxiety of people, reduce the social contradictions from the source, and maintain social stability.

5.8 Summing Up

During the process of demolition, based on the principle of human rights, the government established effective compensation mechanisms that solved the disputes which occurred during the compensation process in a way that gained the trust of the people. The challenge of demolition was largely about demolition compensation; as a result, appropriate compensation proportion was set so that the size of the old housing and settlement housing could be exchanged. In this process, the government also permitted self-built housings, and this option was given a certain proportion of the compensation. If the scale of demolition is large, the proportion of demolition was set at a reasonable level and demolition was arranged in batches. During demolition, residents were given subsidies to rent temporary houses and large-scale demolition within a short period of time in order to avoid paying too much on house rents.

In order to guarantee the quality and efficiency of the housing construction, Liaoning Province adopted a series of policies, which included the following: first, unified bidding management. The scale of shantytown reconstruction is large; and large quantities of resources are involved, so the unified bidding is organized by the related departments to make sure that the construction enterprises compete fairly and eliminate to a great extent the intermediary that helped to lower the cost. Second, in order to make the living conditions of residents in shantytowns significantly better, the planning and construction design of settlement housings are the same standard as that of commercial buildings; the national technical standard is strictly obeyed to guarantee the quality of projects. Third, in order to strengthen quality management, apart from the professional quality supervision offices, residents' representatives were also employed as quality supervisors. This was done to guarantee the quality of the projects.

The income of most residents in shantytowns was low, so discounts were offered in order to make the settlement housing affordable. The experience of Liaoning Province is as follows: First, residents could change the old house for the new one. It will be free of charge if the new house is the same size as the original one. There will be an extra charge or below production cost if the new accommodation is bigger. Also, the property rights was given to the residents themselves. Second, those residents who have difficulties with outright purchase were made to rent the house first, and the real estate certificate was issued after the completion of payment of funds. In this way, the residents can move to the settlement buildings quicker. Third, the allocations of the houses were made publicly and settlements were conducted in specific order based on residents' relocation and payment. The order of settlement was made public. If there was any disagreement, the issue would be looked into and dealt with to guarantee the transparency and fairness of the housing allocation.

The self-service management by community residents means that the residents themselves constitute a committee that coordinates with relevant departments to develop positions in the area of public welfare and employ the laid-off workers in the community to provide service in security, sanitation, and maintenance. This kind of self-service management has a lot of advantages: First, it has effectively lowered property management expenditure and eased the financial burden of the residents, apart from the payment of 0.1 ¥/m^2 per month, there are no other fees; second, it has made the scaled management of the community possible and helped to lower management cost; third, the self-service management has created some job opportunities that have helped the residents increase their income.

Compared to staged, small-scale demolitions, the large-scale demolition of Liaoning Province had great advantages in average cost. However, the success of the large-scale demolition is closely related to the features of the province. First, the shantytowns in Liaoning cover a large area and are densely situated, which was helpful to demolition. Second, residents in shantytowns showed a strong will as regards the demolition process and were disposed to cooperate with the demolition actively. Third, the housing price in shantytowns is low, which lowered the demolition cost. Fourth, compared to other cities in the world, the land in China is owned by the state, which made the demolition relatively easier. A lot of cities in China and other countries of the world do not enjoy the four advantages mentioned above, so the demolition experience of Liaoning is worth promoting throughout China and other countries of the world.

From the end of 2005 to the end of 2006, Liaoning Province completed the task of reconstructing 12.12 million m^2 batches of shantytowns, which covered an area larger than 50,000 m^2; it had built settlement housings of 19.315 million m^2, which improved the living conditions of 1.2 million residents of 345,000 households in the shantytowns. In 2007, the province reconstructed 2.994 million m^2 batches of shantytowns, which covered an area bigger than 10,000 m^2 but smaller than 50,000 m^2. Housing construction of such a large scale will need large amount of resources including capital and construction materials, and it is also very demanding in terms of the quality and efficiency of the construction. For other cities in China and other countries in the world, it is worth considering whether they have the financial power as well as construction capacity to finish such large-scale construction within such a short period of time.

For the settlement areas, property management is a difficult issue that can be seen from the following points: First, the maintenance charge is too low; second, it is very difficult to collect these charges; third, professional maintenance is not on time and the funds for such maintenance are not ready; fourth, it is hard to report for reparation after the completion of the project. The settlement areas of Liaoning adopted a property management mode with the government as the last resort. Government involvement entails subsidizing the management and maintenance costs of the community through government finance. Although governments at all levels in Liaoning Province are at present financially capable of supporting these costs, this kind of property management mode depends too much on government finance, which might encounter some difficulties in cases of government financial

problems. Meanwhile, governments of many cites in China and around the world may not have the capacity to finance the property management and maintenance fees, so the issue of "who will be responsible for the management of the settlement areas after the reconstruction?" should be given proper consideration.

There have been significant changes in living conditions, as residents used to burn coal for heating and cooking in shantytowns before transformation; but after transformation, they changed to the use of gas or central heating system that costs a lot of money. The survey shows that expenditure of the annual water, electricity, heating, and property costs is 2,337 ¥ on the average. After the transformation of the shantytowns, water charges rose by 130 ¥ per household, heating costs by 749 ¥, and property costs by 116 ¥. According to the statistics by the Liaoning Provincial Civil Affairs Department, for the residents who moved into the new buildings, the cost of gas, water, electricity, heating, and property management, the monthly fees increased by about 170 ¥. A long-term mechanism needs to be set up in order to solve the problem of additional living costs for residents.

How to further promote the income of shantytown residents and improve the standard of living and consumption pattern will continue to be a major concern. The research data show that the structure of consumption has changed a little; food expenditure is still a large proportion of the consumer spending, with an increase from 64.5 to 64.7 % in 2012.

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Chapter 6
Economic Impact of Development

6.1 Introduction

Liaoning Province has had exemplary success from 2005 to 2011, with large-scale reconstruction of 29.1 million m^2 of land that was formerly a shantytown. The reason for the formation and existence of shantytowns in the province differs from other countries owing to its unique historic and economic environment. However, there are similarities such as the role played by rapid economic development in shantytown reconstruction. Economic development ensures increased government revenue and family income, allowing for a smooth reconstruction process. Shantytown reconstruction plays an important role in improving urban environment and city image, accelerating economic growth, and promoting industrial development. Increased emphasis has been placed on the interaction between economic development and shantytown reconstruction.

In large part, literature has focused on the effects of economic development on the creation and perpetuation of urban slums. Harris and Todaro (1970), a development economist from the USA, explained the formation of urban slums to a certain extent with a model focused on rural–urban migration. He introduced the concept of employment probability in the model and found that the rural populations that already live in the city and those willing to migrate there make their decision based on the comparison between the rural income and the expected income in the city. Todaro's model implies that the migrating population will likely suffer severe unemployment due to factors such as occupational skills' shortages and discrimination once in the city or have to engage in informal jobs with very low income. And thus, it will be difficult for these immigrants to bear the high housing prices of the city, forcing them to live in slums with poor conditions. This model also indicates that urban economic development will influence the employment opportunities of this impoverished population and affect their income status and choice of housing. Economic stagnation and rising

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_6

inequality will increase the number of urban poor, and changing industrial layouts will exacerbate the cases of poverty (UN-Habitat 2003). The level, speed, and mode of economic development also affect the formation and governance of urban slums. Shanty areas in the Liaoning Province of China were formed mostly due to the decline of the mining areas and less so because of rural–urban migration. The strict urban–rural laws in China has reduced rural migration to cities and restricted the formation of urban slums through the household registration system. In contrast, the system of private ownership of land in India and in Latin American countries coupled with free migration and a lack of household registration has driven large numbers of the rural population to urban areas. This has resulted in rates of urbanization that largely exceed the rate of industrialization, leading to a large increase in unemployment and the low-income population. The increasing poor population therefore has led to more slums, with their ensuing problems. For example, the formation of slums in Mexico was largely due to its economic development mode. Under this mode, more attention was paid to economic growth and less to income distribution, which has led to large income disparity between different groups and the creation of more slums. The excessive rate of urbanization has increasingly heightened the cost of solving the problem. However, some positives can be drawn from rapid urbanization with regard to the poor, if slums are properly governed, as they can aid in economic development and job creation. For example, the national industrial recovery plan of the USA during the crisis of the early twentieth century transformed a large number of urban slums and aided in the building of many public houses (Li Yanling 2001).

In summary, economic development and slum governance have the following theoretical relationship:

6.1.1 Economic Development and Slum Governance

Economic development can affect the capacity of public finances, particularly tax revenue, which is an integral part of the national income. Under certain tax systems, the level of economic development will directly affect the government's ability to levy taxes, thus impacting on the level of fiscal revenue and investment capacity of slum governance. Additionally, economic development affects the appreciation of land. Land price is the capitalization of future land rents, and the appreciation of land will be affected by land rents. Also, land rents will be influenced by city size, economy of scale, income level, and other factors. In this way, the economic development level will profoundly affect land revenue. Those cities with state ownership of land will be able to access land value-added income.

Economic development can change the employment opportunities of the residents. Okun's law describes the relationship between economic growth and unemployment rate. The law states that there is a negative correlation between unemployment rate and GDP growth rate. High economic growth rate is accompanied by low unemployment rate, while low economic growth rate is accompanied by high unemployment rate.

Economic development can affect the demand for housing. The faster the economic development is, the higher the per capita income level. This will increase the need for more quality housing for slum dwellers and reduce their overall numbers.

6.1.2 Slum Governance and Impact on Economic Development

Slum governance can stimulate economic growth. It can increase effective demand and stimulate economic growth. The investment in slum governance, decoration, and furniture expenditures, as well as increased marginal propensity to consume due to rising wealth, all contribute to increased output. Slum governance can promote investment by improving the business environment, thereby stimulating economic growth at the same time.

Slum governance can affect urban industrial structural adjustment. Additionally, it can increase the proportion of secondary and tertiary industry through the building of industrial parks and commercial facilities, located on the land vacated for slum clearance, and then turn the resource-based city into a manufacturing and service city, promoting intensive land use and urban growth.

Slum governance can affect the mode of economic development. It can solve the housing problems of poor residents and improve their living environment, which favors the people-oriented approach to development.

6.2 International Comparison of Economic Development and Slum Governance Practices

The success of slum governance in the world mainly depends on the following two factors. The first is the attitude of the government toward slums, which determines governance policies; and the second is the status of economic development, which determines the capacity of the slum governance. Early practices, the government saw the slums as a problem, and the role of slum governance was solely to eliminate the negative impact of slums on the city in order to promote the urban environment and economic development.

Developed countries have of recent, eliminated urban slums. Countries such as the UK and USA were once faced with problems brought by urban slums, especially in the period of rapid urbanization. Early slum governance was mostly conducted by non-governmental organizations or other social organizations in these countries. However, due to the lack of government's support and funding sources, the scale of slum upgrading was generally small and the action was mostly ineffective. With economic development and revenue increase, the government began to take more responsibility for slum governance, with more attention attached to the slum dwellers in these countries, and slum governance considered under the overall framework

of housing policies and urban development plans. In 1919, the UK enacted the Housing and Town Planning Act, which stated that the housing problem was a public affair, and therefore, public housing should be supported by the state. However, local governments were encouraged to develop leasing markets and sales market to meet the housing needs of the working population. Later, a series of bills were passed to ensure the achievement of these objectives. From the 1950s to the 1970s, a large-scale urban upgrading campaign was conducted in the USA mainly against the degenerated downtown areas, setting slum governance as an important goal. Initially, slum clearance and district redevelopment were the main forms of slum governance, and then, a Model City Plan was made to mark the beginning of more attention being paid to the social and economic developments of the poor. This plan exerted some effect on slum governance before being suspended because of the huge budget deficit caused by changes in the social and economic environments. With the enhancement of economic strength and the end of urbanization in these countries, there was a growing ability to build a unified social welfare system including housing security. The housing security system of the UK features the avocations that all citizens should be entitled to housing benefits, and the government has the responsibility to safeguard this entitlement. As a result, urban slums decreased gradually, and the remaining slums existing in old downtowns had essentially different features from the early slums, which were transformed by promoting investment and employment through the old downtown recovery plan. The USA also established a better housing security system. Especially after the 1970s, an era marked by the enactment of the Housing and Community Development Act, the USA launched the "voluntary" neighborhood recovery program to create more investment and employment opportunities in order to steer the declining city center toward revival and upgrade the slums at the same time. The achieved results have been positive.

There is greater pressure on slum governance in the over-urbanized countries. In the 1970s, Brazil began to pay attention to urban slums, and then, some slums were upgraded or rebuilt, but the scale was small and little success was achieved. In the 1990s, Brazil began to admit the legitimacy of the slums and changed the prevalent expulsion policies, incorporating a series of different measures. In Sao Paulo, Favela Upgrading City Program was initiated with the aim of maintaining settlements and improving urban infrastructure, water and sewage services, and the collection and final disposal of garbage. Urban slums for the first time became the target of widespread action. Later, this program was replaced by another program based on new housing and large construction projects. Currently, a new action program, which is in its implementation phase, aims at reaching more slum dwellers through upgrading projects, land tenure legalization, and networking with different social programs. However, the latter two programs were limited by small scale and narrow scope. In order to promote slum upgrading, Brazil has attached more emphasis to the role of churches and other NGOs and actively seeks World Bank funding. These efforts have reduced local government financial pressure and made achievement certain. Since 2007, a new slum upgrading program has been implemented in Brazil. According to this program, land should be provided by local governments and the funds can be obtained through the central

government's annual budget. The bidding is invited publicly to upgrade the urban slums, and the newly constructed or upgraded houses should be sold to the relocated dwellers at a preferential price. The ownership of houses can be obtained by the residents paying installmentally. In order to improve the living conditions of these slum dwellers, much effort will be made to increase their employment opportunities. What the effect of this program will be is still a result which will be tested by time. Brazil's income level is relatively high, but it shows a characteristic of over-urbanization with 86.5 % of the total population living in urban areas in 2010. Moreover, the income distribution gap is excessively large, making slum governance more difficult. High inflation for more than 20 years has undermined this country's financial order and led to excessive household consumption and less savings, which has resulted in a serious shortage of residents' housing affordability. Hopefully, Brazil will probably see a better solution to the urban slum problem due to increased public revenue and fewer new immigrants in the future.

There is much to do to deal with urban slums in the future for those countries with a lower level of economic development. India has long been faced with a serious problem of slums, which is a result of too many rural–urban immigrants mainly caused by the privatization of land. Many cities have embarked on various forms of slum governance, but the results are not so good. Mumbai, for example, has adopted a public policy, which has seen a shift from the role of controller and provider of housing to facilitator of housing. Initially, the government adopted the policy of slum clearance, but many new slums appeared in peripheral areas. Later, the policy of slum renovation was adopted, but the routine maintenance fund was not sufficient. In 1971, with the enactment of the Maharashtra Slum Areas Act, the infrastructure in the slum areas was improved with the support of subsidies from the central government, but less than one-quarter of slum dwellers was reached. Later, Mumbai began to accept the idea of international slum governance and turn to the overall upgrading and reconstruction of the slums and communities. As a follow-up to this, the Prime Minister's Grant Project, Mumbai Urban Development Project, and Slum Upgrading Program funded by the World Bank were carried out one after another, but the scale of slum dwellers being reached was still too small. Later in the Slum Redevelopment Scheme and Slum Rehabilitation Scheme, public–private partnerships actively participated, but the results were still far from reaching the desirable goal because most of the proposals were initiated in affluent areas and significant numbers of tenements have changed hands. Although through such continued efforts, it could be said that there is a remarkable improvement on the living conditions in urban slum areas, especially for infrastructure and housing security. But on the whole, the achievement still falls far short of the governance goal. This is mainly because the level of economic development in Mumbai and most of India is still low, thus there is no capacity to establish a sustainable housing security system covering the entire society or to offer adequate financial support for a large-scale slum reconstruction. Even though such efforts as lobbying for World Bank funding, introduction of market forces and admission of the legality of tenure could help to raise more funds and improve efficiency, but the effectiveness is still very limited. The continued urbanization, which is bringing new

poor immigrants into India cities, also makes the urban slums more difficult to deal with. Since 2009, India has begun to implement a special city program constructing more houses in the next 5 years with the aim of eliminating urban slums totally. According to this program, the central government will provide financial support to the local governments for urban slum reconstruction, but the plan still faces enormous difficulties.

From the practices of slum governance in the world, it can be inferred that the agglomeration of new poor immigrants has caused urban slums to continually expand whenever appropriate measures are not taken during the urbanization period. The slum problems are usually not appreciated until the urbanization process has neared completion. Most of the time, higher levels of economic development ensure better housing security systems and comprehensive recovery plans of old city downtown areas as witnessed both in the UK and the USA. However, in both places, such as Brazil and India, various forms of slum governance plans have been implemented, but the results were not satisfactory, although on the whole some achievements have been made. This lesser impact on slum governance can be attributed to limitation of public revenue and economic development. However, these countries could improve their slum conditions by raising funds widely, enhancing the support of government and by giving priority to economic development and employment promotion.

The difficulties encountered in the international practices can be summarized as following: First, the cities with lower levels of economic development, especially those experiencing over-urbanization with little financial capacity and weak economic strength to support slum governance. Second, the incentive is weak for many local governments to develop their economy due to the lack of economic assessment and low fiscal revenue retention ratio, which affects the effectiveness of the slum governance. Third, routine maintenance and sustainable housing affordability after reconstruction can become more serious problems because of the general poor skills and weak employment ability of most slum dwellers. Fourth, private ownership of urban land in some countries will incur more cost in slum governance and also increase the difficulty of coordinating the layout of urban and industrial spaces.

6.3 Economic Background of the Shantytown Reconstruction in Liaoning Province

There are four economic reasons for the formation and existence of the shantytowns. First, insufficient housing investment in the past period of planned economy system led to the poor conditions of the residential housing. Notably, from 1949 to 1978, the proportion of total housing investment to gross domestic product had only been about 1.5 %, making it difficult for enterprises to obtain housing finance to renovate or build new houses. As a result, there was little improvement in the housing conditions of workers for a long time.

Second, market-oriented economic reforms have weakened the residents' housing affordability. After the reform and opening up, the old industrial base in Liaoning Province experienced a difficult period of struggling to survive and develop. Many industrial enterprises went into bankruptcy or closure, and the competitive advantage of many industries gradually weakened and even lagged behind. Under such circumstances, a lot of state-owned enterprises went out of operation while somewhere forced to undertake institutional reforms such as staff reduction. Many workers not only lost the opportunity to welfare housing, but they also faced higher housing rents brought by the market-oriented housing reform. This led to further deterioration of the shantytowns.

Third, the adjustment of the economic structure caused more unemployment which reduced the housing demand of the residents. Liaoning Province had seen rapid development, caused by state-owned enterprise reforms and economic structural adjustment. However, as a result of this, the labor demand structure also underwent a significant change. Some dwellers of shantytowns had difficulties in finding new jobs, and thus, the falling income impaired the demand for housing.

Fourth, less municipal finance revenue led to an insufficient supply of affordable housing. With the restriction by a low economic development level, the financial capacity of many cities in Liaoning Province was weakened, and they could neither afford to establish a perfect social security system and housing security system, nor afford to launch a large-scale shantytown reconstruction program. The shantytown problem became a somewhat long-term difficulty.

In 2004, there were about 2 million people living in the low, dirty, and messy shantytowns, accounting for 8.8 % of the total urban population of the province. In Fuxin, this proportion was as high as 29.0 %.

Therefore, the large-scale program of shantytown reconstruction should not only include huge investments, but also create a large number of jobs for residents in shantytowns to increase their income and enhance their housing demand capability as well as sustainable affordability. All of these depend on the rapid economic development of Liaoning Province. In fact, at the start of shantytown reconstruction, the province was facing many favorable conditions such as higher economic growth rate, reasonable economic development procedures, and effective economic management system.

Since the Eighth Five-Year Plan, industrial enterprises in the province have survived the weak market, experienced the escalation and clean up of the "triangular debts", and withstood the test of economic decline. Afterward, it began to launch a "second venture" campaign to accelerate the pace of state-owned enterprise restructuring by undertaking reforms of the large-sized and medium-sized companies, increasing the vitality of these enterprises and attracting more investments. These measures have ensured the introduction of market economy in Liaoning Province. In 2003, the Revitalization Strategy of Traditional Northeast Industrial Base was put forward by the central government and the economy of the province began a new round of takeoff. Up until 2004, the economic growth rate of the province had been maintained at above 10 % for three consecutive years, and GDP

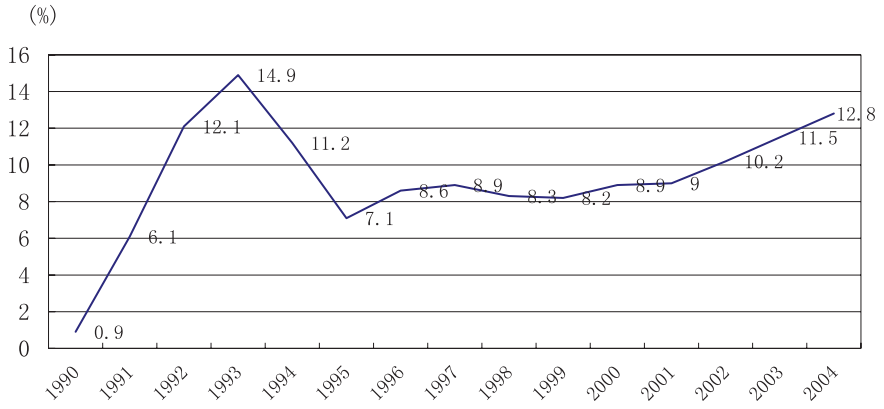

Fig. 6.1 Change of GDP growth rate from 1990 to 2004 in Liaoning Province. Modified from Liaoning Statistical Yearbook (2005) edited by Statistical Bureau of Liaoning Province, China Statistics Press

also rose to 68.73 billion Yuan. Figure 6.1 shows the change of economic growth from 1990 to 2004 in Liaoning Province.

While experiencing rapid economic growth and improvements in its process of economic restructuring and enterprise reform, Liaoning Province also made progressive strides in per capita disposable income, employment status, public revenue, and public expenditure. Between 1995 and 2004, per capita disposable income had increased by 2.5 times, rising to 8706.5 Yuan, this helped to improve housing affordability for the residents. The number of laid-off workers caused by the enterprise reforms rapidly diminished to 1.44 million in 2004 from the peak at 2.25 million in 1998, with the process making rapid gains since 2000. However, the registered urban unemployment rate in the province had risen from 2.6 to 6.3 % between 1995 and 2004. The rise of registered urban unemployment rate was partly due to improvement of the social security system and the reduction of hidden unemployment to a certain extent, but the main causes of the high unemployment rates were the economic reform and structural adjustment in the province. An increasing number of workers left the state-owned or collectively owned enterprises and transferred to foreign-funded enterprises, private enterprises, and individual economic units, resulting in a reduction of long-term fixed labor and an increase in non-fixed flexible labor, which then pushed up the registered urban unemployment rate. The higher unemployment rate had produced an adverse impact on the shantytown reconstruction in the province, but the breaking of the rigid labor relationship promoted employment flexibility and then helped to offer more employment opportunities for the shantytown dwellers. From 1995 to 2004, the general budget revenue of the province had increased by 2.87 times, and general budget expenditure had increased by 3.40 times, including the transfer revenue from the central government. The rapid growth of public revenue enhanced the ability of financial support for shantytown reconstruction.

The system in China where the local government officials are assessed by higher level of government has made these officials to pay special attention to economic development. The system of tax division between central and local governments has enhanced the enthusiasm of the local government for economic development. The system of state ownership of urban land also stimulates local government to develop their economy in order to obtain the revenue from appreciated land. The governments are also inspired to improve industry layout by making full use of the vacated land obtained from shantytown reconstruction. In addition, China is in the transition process from a planned economy to a market economy; therefore, the government still has significant influence on economic regulation and resource deployment. These advantages are what many other countries do not have. Under this circumstance, the local government in Liaoning Province has a strong incentive to develop the economy, increase the fiscal revenue and promote social employment, and pay more attention to the role of shantytown reconstruction in the economic development. The advantages of such initiatives as the Revitalization Strategy of Traditional Northeast Industrial Base include rapid economic development, strong motivation and ability for economic development, and a system of state ownership of urban land, which helps underline the chances of success for the shantytown reconstruction program launched by the province.

6.4 Experiences and Methods of Promoting Shantytown Reconstruction

Recognizing the important role of economic development in shantytown reconstruction, Liaoning Province emphasized economic development and restructuring to guarantee the smooth progress of the large-scale reconstruction process since the end of 2004. The province has utilized the opportunity of the Revitalization Strategy of Traditional Northeast Industrial Base to attract national support. They have promoted the transformation of economic structures by replacing low-level redundant investment and extensive production with high-level, intensive, clustering development, with the aim of accelerating economic growth and tertiary industry development. Additionally, the province has made massive investment, encouraged private sector participation and as well reformed state-owned enterprises to improve enterprise efficiency and the employment environment. It has maintained an annual economic growth rate average of 13.5 % from 2005 to 2011. Accordingly, the scale of fiscal revenue and expenditure has increased by 5.0 times and 4.1 times, respectively, from 2004 to 2011, with per capita disposable income of urban residents increasing by 2.4 times, per capita balance of foreign currency saving deposit of urban and rural residents increasing by 2.6 times, and the registered urban unemployment rate falling to 3.7 %. The rapid economic development has built a favorable environment for shantytown reconstruction and improved the housing supply capacity of local governments. At the same time, many municipal governments have also taken measures to improve the economic condition of citizens as part of the reconstruction process.

6.4.1 Investment Industrial Agglomeration and Reconstruction

Great importance is attached to the introduction of external project funding, promotion of new industrial structure, and the transition of economic development, thereby stimulating investment and expanding the production capacity through industry clustering in the industrial parks. For example, Fushun actively implemented the strategy of "Building a Powerful Industrial City" and promoted the transition and upgrading of the original industries and resources through the "retreat the secondary and advance the tertiary" program. Moreover, Fushun also made efforts to introduce investment and tried to stimulate the industrial development through huge projects. As at the end of 2010, 94 projects had been introduced in the Fushun Petrochemical New City, including 23.4 billion Yuan of external investment and 49.8 million dollars of foreign investment, propelling the development of the petrochemical, high-tech, and chemical industrial clusters. External investment has accelerated economic development and industrial agglomeration, increasing public revenue and creating many jobs, which have helped address the problems of urban shantytowns. The tax revenue paid by these enterprises in the new industrial park helped raise investment to 1.715 billion Yuan in 2011 from 0.134 billion Yuan in 2004, accounting for 21.12 % of the total tax revenue relative to 10.23 % in 2004, helping shantytown dwellers to the increasing job opportunities in the park. External investment has also propelled economic development. For instance, Fushun maintained an average annual economic growth rate of 15.0 % from 2005 to 2011, and relative to 2004, the scale of fiscal revenue and expenditure increased 6.0 times and 4.2 times, respectively, with the per capita disposable income of urban residents increasing 2.6 times.

6.4.2 Private Economy, Employment Opportunities, and Shantytown Residents

In the past, Liaoning Province was a traditional industry-oriented province with a large proportion of state-owned enterprises. With the advance of the economic reform and the adjustment of industrial structure, the province began to attach increasing importance to private enterprises as vehicles for reviving the economy; this played an important role in its economic development. In Fushun, the private sector economy has been expanding and has played a prominent role in the transition of the urban economy with the increase of urban fiscal revenue and employment opportunities. Fushun adhered to the policy of "underline the big and support the small" by encouraging the admission of market, promoting the docking of banks and enterprises, and supporting the collaboration of SMEs and large enterprises. At the same time, Fushun also actively integrated social service resources to improve the system of business counseling, financing, guarantees, technical

innovation, credit evaluation, personnel training, information consultation, and so on. In addition, the private sector economy was supported by park-based, cluster-based, and project-based networks. In 2010, the industrial value added contributed by the private economy increased to 51.6 billion Yuan at an annual growth rate of 22.0 %, accounting for 58.0 % of total gross domestic product, with an increase of 22.5 % points relative to 2004. The private enterprises through their flexible system and greater demand for labor have played an important role in promoting the employment of and increasing the income of the shantytown dwellers and also helped in the growth of the whole urban economy in the province. Survey of the relocated shantytown dwellers in six cities of Shenyang, Fushun, Tieling, Chaoyang, and Benxi shows that 7.4 % of the respondents above the age of 60 who retired from private sectors are now self-employed, while 71.4 % of those under the age of 40 are in this category. The data suggest that the role played by private enterprises in providing jobs and encouraging self-employments has become very vital for the shantytown dwellers.

The state-owned enterprises had always played a prominent role in the province, but had experienced a decline. In order to revert back to its earlier position in the economy, the province started a "second venture" campaign and tried to restructure its enterprises by reforming large- and medium-sized enterprises and increasing the vitality of the small- and medium-sized enterprises. For example, Fushun made efforts to reform the state-owned enterprises, by advocating a shareholding system and introducing bankruptcy proceedings, so as to assist state-owned enterprises to also be competitive in the market economy. The reform of state-owned enterprises in Fushun made strategic adjustment that injected vigor into the economy, and a large number of local and external investments were introduced through the transfer of property rights. All these helped to revitalize the stock assets, improve the business efficiency, and increase the local fiscal revenue. According to the survey on the relocated shantytown dwellers, 19.1 % of the respondents under the age of 60 were still employed by state-owned enterprises, while a higher proportion of 26.9 % are between 50 and 60 years old. The reform of state-owned enterprises and the enhancement of enterprise efficiency have helped relocated shantytown dwellers to increase their income and housing affordability, instead of many of them remaining unemployed.

The development of community economy in Liaoning Province has made employment more convenient for the located shantytown dwellers. For example, Tieling set up the neighborhood committees in many communities and provided conveniently located occupation opportunities for its members. This was done through the building of numerous commercial stores in the new communities which were sold, rented, or transferred to the relocated dwellers at discounted prices to enhance their business activities. In addition, Tieling labor union established subsidized supermarkets in many communities and gave priority to the residents for jobs in those supermarkets. Preferential selection was also given for jobs such as community cleaning, security for the relocated dwellers, and other public interest jobs. With the support of a series of policies, the community economy has undergone rapid development and has promoted the re-employment of those

relocated unemployed dwellers. Since 2005, Tieling has employed 298 persons engaged in public interest work and 3,205 persons engaged in part-time work, many of whom were in the community economy units. In addition, Fushun also took measures to develop the labor-intensive industries, the cottage industries, and the community economy in the vicinity of new communities to support their re-employment, which has also ensured the success of shantytown reconstruction.

6.4.3 Environment for Economic Development and Entrepreneurial Activities

The province attached great importance to encouraging entrepreneurial activities of the residents by way of free entrepreneurial training and small-scale loans for their own business. Also, a series of related policies to promote private economy and small microenterprises were formulated to help the entrepreneurial activities of the relocated dwellers. For example, Tieling claimed that those relocated residents who had entrepreneurial aspirations but were in difficult circumstances had the privilege of receiving free entrepreneurial training and obtaining prior small-scale loans. In addition, a "one-stop" business service for project recommendation, license agent service, and business site scouting was also introduced. New commodity markets and agricultural product markets were required to reserve about 5 % of their total vending booths to the relocated and trained shantytown dwellers for 2 years free of charge, helping them undertake a "zero input" venture. These efforts of encouraging their entrepreneurial activities had a significant effect. 3,975 people have become self-employed or starting their own business. Recently, Liaoning Province formulated "opinions on supporting the development of small and microenterprises," which clearly stated its commitment to promoting the development of small and microenterprises by tackling the problem of financing, providing fiscal subsidies, and reducing their tax and fee burden. This operation is expected to have a far-reaching impact on the entrepreneurial activities of the relocated shantytown residents in the future.

6.5 The Economic Impact of Shantytown Reconstruction

The province has attached great importance to the close integration of shantytown reconstruction and economic development with the aim of promoting a continuous cycle of development. There are four points that should be highlighted from the practice of shantytown reconstruction. The first is the stimulation of economic growth through shantytown reconstruction. The huge investment made in shantytown reconstruction and the increased consumers' spending after the relocation have helped to spur economic growth. The second is the change of economic growth patterns witnessed through the shantytown reconstruction. Through the

rearrangement of the shantytown land and industrial space, industrial structures became better utilized and promoted the development of the high-end technology and service industries. This aided intensive land use and industry development. Third, this helped to accelerate the transition of economic development. Liaoning Province has placed emphasis on fair income distribution and improved living condition as a result, the income gap has narrowed. Also, a development practice based on people-oriented ideas was gradually adopted. Fourth was the decision to improve the business environment and encourage industry clustering. The province also attached great importance to the improvement of the infrastructure, public facilities, and environment, while promoting the advancement of urban public service capacity, and as a result, rapid industry agglomeration and economic development are being experienced.

6.5.1 Shantytown Reconstruction and Urban Economic Growth

There construction played a significant role in promoting economic growth. According to the estimation, when the crowding-out effect of concentrated investment was not taken into account, direct investment speed up the province's nominal economic growth by 2.85, 1.29, 1.00, 0.72, 0.41, 0.38, and 0.78 %, respectively, from 2005 to 2011. Moreover, in some cities with colossal numbers of shantytowns, the economic growth effect of such investments was more significant. In Fushun for instance, without considering the crowding-out effect and spillover effect, direct investment pulled up the urban nominal economic growth rate by 7.19, 8.53, 5.34, 2.09, 0.9, 0.22, and 0.50 %, respectively, from 2005 to 2011. Moreover, if the pulling effect of increased consumer spending on housing decoration and furniture purchase is taken into account, the economic growth effect of shantytown reconstruction will be much bigger. Notably, large-scale construction activities within such short periods greatly enhanced the demand for construction workers and technicians, thus directly contributing to a higher employment rate.

Many cities in Liaoning Province have established industrial parks and introduced industrial projects on the vacated land made available by the shantytowns reconstruction, which not only contributed to the "retreat the secondary and advance the tertiary" program in the city downtown, but also accelerated the clustering of industries and promoted the development of the tertiary industry. In Benxi, Zhengjia Industrial Park and Caibei Logistics Park were established on the land vacated from the shantytown called Zhengjia, and this has encouraged the development of deep processing industries for iron and steel. In Fushun, three industrial parks were established on the vacated land and have promoted the development of industrial clusters of new chemical materials, construction machinery, and related products, among others. The improvement of the urban environment has also made Fushun more prominent, better known, and attractive to the world as a tourist destination. In 2011, the growth rate of tourism revenue peaked at

20 % in Fushun. With increased residents' consumption inclination and the formation of several new communities, lots of community service shops and wholesale and retail markets have appeared in the neighborhood which propels the development of the tertiary industry.

6.5.2 *Shantytown Reconstruction and Urban Business Environment*

Shantytown reconstruction purified the urban environment. For example, Fushun demolished and removed more than 10,000 little coal-fired chimneys in shantytowns and provided centralized heat and gas in the new communities. As a result, the emissions of coal ashes, soot, and sulfur dioxide decreased by 5,000, 2,475, and 1,441 t, respectively, and the city image has also improved substantially. Shantytown reconstruction improved the affiliated infrastructure and public service facilities. In Tieling, seven high-standard urban roads were built close to the renovated and transformed shantytown areas; thus, the traffic conditions have improved substantially. The shantytown reconstruction enhanced residents' income and improved their living conditions. Criminal incidences such as fights, thefts, and robberies were substantially reduced. In Fushun, criminal cases decreased by 24.0 % to 2,051 cases in 2011 compared with the in 2004 records. Also, shantytown reconstruction improved the public service and administrative efficiency and promoted the urban industrial agglomeration. In Fushun, 48 billion Yuan of investment was introduced, accounting for 60 % of the total fixed asset investment, among which the investment outside Liaoning Province increased by 49.4 %.

Through shantytown reconstruction, more than 134 km^2 of land was vacated, increasing the valuable land reserve for future urban development. In Fushun, there form of state-owned enterprises and the old downtown renovation were coordinated alongside shantytown reconstruction, as a result a total of 800 ha of land were vacated and utilized efficiently. In Fuxin, 4.17 million m^2 of land were also vacated through shantytown reconstruction. Shantytown reconstruction has also promoted the upgrading of the surrounding area and increased the neighborhood housing price. In many cities, efforts were concentrated on the overall land development and large-scale land transfer to promote the rational planning of vacated land. Consequently, the city infrastructure and the urban environment have improved remarkably, alongside the reclaim of appreciative parcel of land.

6.6 Summing Up

After a comparison of the effects of economic development on the practices of urban slum governance in different countries, this chapter distills out some of the factors that influenced Liaoning Province success. The methods and policies

adopted in promoting economic development to support shantytown reconstruction were examined in detail to form certain conclusions. Clearly, the initiatives led to increasing investment, through supportive private enterprises and state-owned enterprises. It developed the local community and economy, encouraged employment and venture that are the key elements to ensure a smooth progress of shantytown reconstruction. Furthermore, the province attached great importance to combining shantytown reconstruction with economic growth and transition, both of which mutually reinforce each other. These findings have some important implications for other cities aiming to conduct a shantytown reconstruction program.

First, efforts should be focused on economic development to enhance the ability of public housing supply and private housing demand.

Second, appropriate measures should be taken to give full play to the role of investment and private enterprises, which will increase public revenue and promote the employment of residents in shantytowns.

Third, great attention should be put on the development of community economy and microeconomic units to promote employment and venture, which will increase the income of the residents in shantytowns.

Fourth, the active role of shantytown reconstruction should be fully combined with economic development so as to ensure a virtuous cycle of shantytown reconstruction.

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Chapter 7
The Social Impact of Transformation on Subjective Well-being of Residents

7.1 Introduction

Our world is filled with slums. Low-income settlement is a universal issue existing in many countries with different income levels. Poverty is a challenge in both the Third world and newly emerging economies and can be found in any country, or any major city. As in other countries, slums or low-income districts in Liaoning Province are residential areas of the urban poor and have similar external characteristics, but underneath that exterior, the causes behind the formation of the shantytowns, the characteristics of the residents, and the manner in which reform has been implemented are all remarkably varied and distinct. Since the Era of reformation and opening up, the largest scale of accelerating urbanization process in human history began in China. Simultaneously, the phenomenon of low-income settlements began to spread in many large cities. A shantytown is a typical representative of Chinese low-income settlements. Until the end of 2008, 11.48 million households lived in various kinds of shantytowns, including 7.44 million middle- or low-income households. In the Liaoning Province, an old industrial settlement in northeast China, the problem of shantytowns was very obvious ast29 million square meters centralized shantytowns held more than 700,000 households and a population of 2.1 million. The state council approved the project of shantytown reconstruction in northeast China in the year 2005, and Liaoning started an all-round, comprehensive, and complete shantytown reconstruction. Official statistics showed that 29.1 million square meters of shantytowns were rebuilt and new houses were provided for 706,000 households and 2.11 million people from 2005 to the end of 2011. The final goal of shantytown reconstruction in Liaoning was to pay more attention to original resident's housing condition and welfare level; thus, the final reconstruction performance showed improved standard of living and better housing and living environment. This chapter focuses on exploring the socio-economic changes of the original residents during the process of reconstruction

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_7

of low-income settlements in six cities of Liaoning. It also seeks to know whether affordable housing engineering reached its expected social effect after 7 years.

The province used the term "shanty areas" and not the international concept of "low-income neighborhood," not because the socialist system seeks to deny the existence of poverty, but rather because the two concepts have fundamentally different implications. First, in order to understand the symbolic significance of the reconstruction of Liaoning's shantytowns, there is need to appreciate what led to the rise of the shantytown communities and their fall, and the subsequent effect on the social positions of the residents. The rise of shantytown communities in China's Liaoning Province was indeed caused by the collapse of industries. After extensive research on the reconstruction of Liaoning's shantytown communities, Chinese sociologist, MengXiangfei pointed out that changes in the organization and makeup of areas experiencing greatest poverty in China's cities are greatly affected by the rise and fall of industry. If slums in foreign countries are the product of "social rejection," then China's urban poverty is the product of the combination of four factors: "system rejection," "social rejection," "industrial rejection," and "work unit rejection" (Meng Xiang and Su 2010, p. 58).

One of the core factors that must be taken into account when analyzing the development and makeup of shantytowns is the characteristic of residents' social class and social mobility. The study of social class occupies a core position in sociology as the composition of social classes is at the core of social structure. The system governing society is determined by "the method of allotment of resources among members of a society," as the allocation of resources truly sets the makeup of social classes. Just as the exact geographic position of a person changes continuously, so does a person's place in the society. The study of social mobility has grasped the composition of and trends in social class mobility through assessing the changes in the position of members of the society. There are two main types of social mobility: structural flow rate (also called rate of directed flow) and circulation flow rate (also called rate of pure flow). Structural flow arises from the changes in allotment among social classes created by shifts in industry. This type of flow does not follow from individually implemented actions and intentions; rather it belongs to the class of forced or passive flow. Circular flow is unrelated to structural flow. It describes changes in social class that arise out of personal effort, such as raising one's education level or changing careers (Junsuke 1999).

In view of the basic knowledge of social class and social class mobility described above, it can be said that the social class mobility of residents of foreign zones of poverty belong to the circulation flow model, as the mechanism of force behind changes in social class is powered by individuals. Areas of poverty can be taken as communities in which there is a high concentration of people with low income. Rapid urbanization brought about by industrialization results in great numbers of people moving to the cities. These people, comparatively weak in terms of their economic and social status, make the decision according to their economic and social means to move into urban zones of poverty. To establish a system for the safeguarding of their livelihood, they decide to live in designated areas, and these areas gradually come to have their own culture and

social organization. Unlike foreign slums, social mobility among the residents of Liaoning's shantytowns fits the structural mobility model. Both the emergence of Liaoning's shantytowns and their reconstruction belong to "structural mobility" type change. The mechanism of force behind social changes is powered not by individuals, but by change in the greater socioeconomic system. The direction of mobility of the social position of residents in Liaoning's shantytowns has gone from rising to falling. After the establishment of the People's Republic of China in 1949, residents of the province held stable jobs as respected workers of state and large-scale enterprises. In terms of social and economic position, they were in the middle of the society. However, following the exhaustion of coal reserves which started in the 1980s and the industrial reconstruction of 1993, most factories closed; workers lost employment and the workers' dormitories changed into shanty rooms. Liaoning's shantytowns broke off completely from mainstream society and the era of booming innovation and prosperity that had blessed the region after economic opening. After expulsion from mainstream society, these shantytowns could not even be counted as belonging to the lowest level of society; they were placed outside the entire social system, stripped of all ability to return to mainstream urbanization or industrialization. Due to strong intervention from the government, the No. 1 Minxin Project that was the reconstruction of Liaoning's shantytowns started in 2005 and it completely changed the makeup and appearance of the shanty areas. In rebuilding the shantytowns, Liaoning province decided to rebuild the community organizations and integrate them into the governmental public service system. It eliminated the difference between average apartment complex communities and the shantytowns, brought them back into mainstream society, re-established the lives of people in those communities and also re-established the communities as the base of the society. The final goal of this project is to ensure that former shantytown residents can fully reenter mainstream urban life. Secondly, in order to understand the mechanism of groups used in the reconstruction of Liaoning's shantytowns, it is necessary to understand the relevance of community groups in this process. In the reconstruction of foreign low-income neighborhoods, more emphasis is being placed on the use of the residential community in an unofficial manner, thus making their use limited. As pointed out by UN Human Settlements Program, "In the past 10 years, governments, international organizations, and the media have all changed their attitudes toward popular society. Now, people believe that popular society can work with the country and the government to improve people's living standards, with democracy at the core of change (UN Human Settlements Report 2006, p. 190)." According to the report, aside from policies concerning individuals and households, the management of a society as a whole is essential in low-income residential areas. Regardless of whether the community is common or unique, whether the community is involved in leisurely activities or not, whether the community is involved in the public sphere and development of the public market or not, whether the community is in opposition to the government or not, whether the community endorses or opposes the goal, everyone needs to be involved in the management and organization of the society. In order to ensure that there is effective and substantial cooperation in the

community, residents will often establish a few basic groups in accordance with the local situation. These groups then work for the good of the residential community. There are many different types of local groups, for example: community theaters, hobby groups, sports groups, residents associations, savings and credit unions, children care groups, ethnic customs groups, entertainment groups, and so on. The makeup of these groups is a reflection of the culture, needs, and interests of residents in the low-income neighborhoods. In some places, these groups are unofficial, completely free from government management; in other places, they are semiofficial. A great majority of residential community groups are nonprofit. These groups are often established by women with the goal of meeting the needs of their respective communities, for example: providing water and electricity, maintaining a sanitation system, keeping up the roads, trash collection, providing education and health care, security and safety, crime control, and so on (UN Human Settlements Report 2006, pp. 193–194).

Of special note is that in the process of rebuilding Liaoning's shantytowns, the government took great initiative in helping to establish strong community groups in a manner unparalleled with that of other countries. The establishment of these groups enabled residents to participate in the administration of their community and thus in the re-establishment of a community which was involved with, and directly related to the lives of its residents. In returning to modern urban society, former shantytown residents needed to re-establish the organizational structure of their everyday life. Following the collapse of state-run enterprise work units and breakup of local society, the Province recreated the social system of rebuilding, providing employment assistance and social security to the residents, using myriad of methods to increase residents' employment rates, incomes, and ability to integrate into and grow in the urban environment. Residents who were once cut off from urban industrialization and modernization were once again given the opportunity to participate in the urban economy. The reconstructed areas are now heading toward the goal of sustainable development and security.

7.2 The Shantytowns Era: A Complete Break from Mainstream Society

The emergence of shantytowns was the result of the combined collapse of a social system and the work units supporting that system. When the work units were still in place, the residential communities were fully part of the work unit system. However, after losing affiliation with their work units, the residents also lost the communities that had provided them with comprehensive support. This led to social disorder and the continuous rise of problems in regard to both health and crime conditions. Although the factors behind the formation of China's shantytowns and their recent reconstruction are quite different from those of slums in other countries, both of those in China and abroad are low-income settlements and as such, share many characteristics in terms of their external appearance and

internal living conditions. All their rooms look dirty, old and dark inside, walls are broken or sagging, the streets have running sewage or filthy water, piles of garbage, the air is unclean and disease is more prevalent. The crime rate among residents is also relatively high as there is little or no enforcement of the law.

First, following the loss of employment with the collapse of industries, residents lost the ability to improve their living situation and began to lose hope in the future. After China established a socialist market economy in 1993, and private businesses rose out of the ashes of state enterprises, the former workers' dormitories rapidly changed into shanty areas—backward and unbelievably dirty residential districts right in the urban city. Not only were the settlements old, the residents were also poor and belonged to the urban low-income bracket. Taking Fushun city as an example, from the 1980s, coal industries started losing their vitality due to depletion of reserves thus resulting to industrial collapse and closures that necessitated large-scale layoffs. According to a survey done in Fushun, there were only 1.34 people employed per ten households and 70 % of shantytown residents received monthly welfare payments from the state. Following an increase in the population of former workers' dorms, residents began to construct cheap buildings within the original dorms, causing the areas to bear more resemblance with shantytowns. Families with insufficient economic resources also pushed their children to live in shanty areas thus the original dorms were in most cases occupied by older ex-employees.[1]

Second, safety and governance of shantytowns continuously worsened over the years, and this led to an increase in crime rate. When employees of government-run establishments and large-scale enterprises lost their jobs, they also lost their access to economic resources and they slide into the pits of extreme poverty. Loss of hope for a better prospect in life led some residents to commit crime, thus creating a "culture of poverty" in the area. The sense of order and moral structures guiding families and the society at large waned. The "culture of poverty" refers to the unique social structure and rationale underscoring a subculture adhered to by a community of low-income people. It is the reaction or adaption of poor people to people of other localities within the context of growing social stratification and individualism. "Culture of poverty" often involves the surrendering of greater social awareness, a lack of hope of expectation for the future, a deficient ability in actualizing plans and ideas, and a questioning of authority (Meng Xiang and Su 2010, pp. 58–59). Modi community in Fushun city was the earliest shantytown to

[1] The characteristics of Chengjia community, Benxi City, Xinming Street can be summarized as "Two Lows; Four Manys": The two lows are low economic income and low levels of education and culture. The Four Manys are: Many poor people; many households are like four-walled prisons, residents but a step from being vagabonds; many sick people, particularly mentally sick; many people who have served prison terms, and rampant disorder in society; many laid-off workers who suffer from loss of all resources. In 2006, there were 1,000 unemployed people, 197 living off an economic minimum, and many very close to extreme poverty.

Table 7.1 Change of divorce rate (in %) in shanty areas in Fushun city, 2004–2008

	2004	2005	2006	2007	2008
Shanty areas	45	57	44	45	45
Liaoning province	25.51	31.00	25.02	29.76	28.76

Modified from Liaoning Province Statistics Yearbook (2009)

evolve out of a high concentration of families living in extreme poverty. In Modi, two people out of every ten households had been to prison.

Third, there was deterioration in sanitation and health. Many of the shantytowns in mining districts were established in the 1930s. As the residences aged, many of them fell into disrepair and the shantytowns were just one big heap of ruins. Shanty areas lacked the most basic facilities, and thus, sanitation became a grave issue. Toilets and washrooms were a huge problem; in some areas, there were more than 700 residents using one dry toilet. Many people in the shantytowns formed unhealthy habits such as binge drinking in order to numb their worries. The proportion of residents with mental illnesses was also very high there, and the mentally ill would often wreak havoc or cause disturbances in the community. In 2004, the population of Beihou district in Fushun was a little over 3,600, with 5.2 % of the population suffering from mental illness.

Fourth, loss of employment and income posed threats to the stability of the family units, leading to lower marriage rates and increasingly high divorce rates. For example, in Modi community, male residents found it difficult to find marriage partners, with just one community having over 100 bachelors and 70 single-parent households (Table 7.1).

In 2004, the divorce rate in Liaoning's shantytowns was 45 %, an extraordinarily high rate compared to the average for the entire Province—25.5 %. In 2005, the year Liaoning started to reform the shanty areas, the divorce rate went up to an astonishing 57 %, far higher than the provincial average of 31 %, it however declined between 2006 and 2008.

Fifth, community groups lost their vitality and dedication to the community. Prior to the deterioration of the workers' dorms into shanty rooms, they were under the governance of the mining industries; in large enterprises especially, the community groups operated under strict guidelines and were responsible for providing the community with a variety of cultural and political activities, social protection and community security, government announcements and they also handled civil cases. However, in the nineties, following the closure or transfer of the industries, all community groups came under the jurisdiction of the city government. After the loss of employment, the only systematic form of economic assistance came from the services provided by the local neighborhood committee. However, Liaoning's city governments did not have sufficient funds to completely improve the shanty areas, and they certainly did not have enough room in their budget to develop community groups and activities for the residents. Facing fiscal restraints, the government could only provide residents with basic economic relief and other primary services. In the process of carrying out reconstruction, Modi in

Fushun became notorious for the difficulty it posed for planners in terms of community management. This was not due to lack of resources, but rather owing to the instability in the community. Project workers had problems working with conviction as few stayed on the job for an extended time; the longest a worker would stay was several months, the shortest was just a day.

7.2.1 Characteristics of Shantytown Residents

After the former workers' dormitories turned into shantytowns, the social position of the erstwhile employees went through a ground-shaking change. Liaoning Province is one of China's earliest-developed industrial areas. It was once home to many older mining enterprises and as such, had a high concentration of industrial workers. Following the development of mining in the 1930s, Liaoning witnessed extensive construction of mines and processing plants. From liberation in 1949 to the 1950s and 1960s, industrial units built large-scale simple workers' dorms in their vicinities. However, in the 1980s, mining industries in the Province started facing exhaustion of resources. Its cities were formed not from natural growth, but rather as residential communities attached to the large state-owned enterprises. Since there was no other economic base nearby, anytime the industries fell into hard times, the development of the urban areas also faced a similar predicament. Liaoning rose from coal and from coal it fell (Table 7.2).

The reason why the situation in the Province's shantytowns continued to deteriorate can be explained by the removal of industries and the former social system. The shanty areas were completely removed from the process of industrialization and urbanization in Liaoning and the rest of China.

In Liaoning, a heavily industrialized area of China, workers held very respectable positions in that era when industries were still booming. At its peak in 1988, Benxi city had 120,000 industrial workers. It was "The city built of coal and iron." Mines esteemed their miners, providing special alcohol and meat ration tickets for those workers who entered the mining shafts. In 1992, Deng Xiaoping's southern tour speeches ushered China into a new era of open economics, and the economy continued to grow at a fast pace. Due to the fact that the prospects for the industry were bleak, and Liaoning was faced with depletion of resources, mines ran at a loss year after year, resulting in large-scale bankruptcy. The government issued a policy which provides for the buying out of senior workers. After receiving about

Table 7.2 Types of former work units of shantytown residents

	Yinzhou, Tieling city	Beihou, Fushun city	Shenyang
State-owned	17.5	22.3	18.9
Large-scale	47.5	47.5	8.7
Private/other	35	30.2	72.4

Modified from the People's Government of Liaoning Province

ten thousand RMB in compensation, the workers ceased to have any relationship with their former employers. Workers who previously held steady and respectable positions in state enterprises became poor shantytown residents overnight; their economic situation rapidly deteriorated as they plunged from the middle class of the society to the bottom rungs.

Economic ability is one of the major factors which affect divorce rates; possession of property and economic power is a necessary condition for marriage, especially in China. As such, the effect of sudden unemployment on marriage stability is much deeper felt than most people would imagine. Following the changes in Liaoning's industry and state enterprises, many people lost their jobs and faced a subsequent increase in economic pressure. The loss of a job can cause worries and anxieties, and the resulting pressures can lead to the weakening of the bond between husbands and wives, causing imbalances that may lead to the collapse of most relationships and marriages.

In the early 1990s, before major changes took place in the mining industry, the workers' dorms were already old and worn out, and there were great differences between their conditions and those of other residential neighborhoods which were occupied by active employees of large or state-owned enterprises. As with the rest of China at that time, most residential communities in Liaoning were formed and managed by the work unit. The residential communities were a major part of the enterprises. They were managed directly by the logistics department, which was responsible for ensuring social security in the community. Neighborhoods were held together by residents' professional relationships and looked after by the local neighborhood committee. The social relationships within the residential communities followed strict guidelines, and the society was characterized by a high degree of social order. After the factories were shut down, management of the residential area's work unit was handed over to the city. In the face of great industrial change, the city government was too occupied to help the residential communities through this transitional period and the communities' social organization began to weaken.

Unemployment is the most obvious factor leading to problems associated with public security. Some shantytown residents took to crime as a result of poverty which arose when they lost their positions and their fixed economic income. The social system once structured by the work unit ceased working; brawls, fighting, theft, robbery, and a number of other undesirable acts cropped up in the communities.

Apart from unemployment, another factor responsible for rise in insecurity issues is the fact that most residents had a fairly low level of education, having only graduated from primary or middle school.

Table 7.3 shows that apart from Shenyang where 70 % of residents had a high-school degree; residents from the other five areas were predominately (60–70 %) middle- or primary-school graduates. On account of their low-education levels, most residents had been employed as skilled or unskilled workmen; this low level of education made it much more difficult for them to reenter the job market.

At the time when the industries collapsed, most public security issues were managed by groups within the community. Each community had a security

Table 7.3 Education levels in six liaoning cities after rebuilding (%)

Level	Avg.	Shenyang	Fushun	Benxi	Chaoyang	Tieling	Fuxin
Primary	13.3	0.5	15.3	19.8	15.1	6.8	21.4
Middle school	53.3	23.7	62.7	61.4	59.2	65.5	45.7
High school	29.5	70.0	21.5	13.5	20.2	23.3	31.4
University	3.9	5.8	0.5	5.3	5.5	4.4	1.4
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Modified from the People's Government of Liaoning Province

committee, composed of volunteers who patrolled the community and generally assisted the police. Even more essential to the security of the community was the fact that residents within the community looked out for each other and ensured that other residents abided by strict community guidelines. After the industries crumbled, the residential communities lost their voluntary security patrol and community management weakened.

The spread of diseases in communities can be through unsatisfactory sanitation conditions, disease-carrying insects, and foul air. Shantytown residents lived in simple single-story dwellings and in the winter, they heated their residence with coal bricks. Since ventilation was not very good, it resulted in heavy coal dust and smoke pollution within their homes. In summer, when the rains were heavy, the houses would leak, and the whole area became a breeding ground and habitat for disease-carrying insects. The residential communities had no system for trash removal, and over time, the areas became encircled by mounds of festering garbage.

In terms of medical care, the leading cause of health problems was the loss of assured medical attention that came with unemployment. In the 1990s, within Liaoning, medical care was always linked to the work unit. Different types of work units provided different levels of welfare and medical care. Large enterprises provided a great variety of social welfare services, such as education, culture, medical care, and sanitation. Thus, loss of employment was not simply a loss of salary—it also meant loss of access to the entire social welfare system (Sun 2003). Among the different types of welfare, medical care was one of the most important services provided. Every mining enterprise had its own hospital and health clinic, with most services and medicine provided free of charge. Workers had regular medical checkups, and doctors took special care to diagnose and treat work-related diseases. Coal mine workers are especially susceptible to incurring lung diseases, such as silicosis, but the mines were responsible for long-term treatment and cure of these diseases. However, after the industries went bankrupt, the industry-provided hospitals closed or were transferred. Former workers lost their access to medical care and since they were economically constrained, they often could not afford medical fees. Treatment of work-related diseases was left unmanaged. Thus, deteriorating health further exacerbated the problems of shantytowns' residents by pushing the inhabitants further into poverty.

7.2.2 Managing Renovation of the Shantytowns and Changes in the Lifestyle of Residents in the Resettlement Housing

The contemporary rebuilt housings are located in green spaces, and residents live in apartment-style buildings. There is no difference between the resettlement buildings and average apartment complexes. Taking Modi in Fushun as an example, by 2009 after 5 years, three stages of project development were completed and these included 106 reconstructed buildings, 6,400 households and a total of 16,300 residents. Shantytown reconstruction in Liaoning cannot be seen as pure reorganization; the project introduced enormous changes in the lives of the residents. Every apartment had an average of 53.8 m^2, with an average of 18 m^2 for every resident. The renovation project was from start to finish, a successful model pushed through by the government. The whole province supported the project through "Five positions, one team," which involved participation from a specially appointed Party Committee leader, government promotion, social participation, industry support, and residential community self-governance (Meng Xiang and Su 2010).

Community groups experienced great change in the course of the resettlement process. A new community service system was established, and managers carefully set up a new platform for party committees to take over the management of everyday affairs, issues, and disputes within the residential community. The creation of a strong administrative system in the community is one of the unique characteristics of Liaoning's resettlement housings. Before the project, the city government decided to do a complete job reconstruction, deciding upon a multifaceted and more effective approach, thus ensuring stability and order in the renovated areas. Apart from the party committee, the residential community also established a neighborhood committee, a resident's representative assembly, and residential community legislative assembly, thus ensuring complete management over community residents. In the reconstruction project, the Province altogether established 290 new residential communities, creating attractive, comprehensive, digitalized layout support by the party. This pattern gave the new districts a strong base for an enduring ability to address welfare issues. Workers within the residential communities consciously worked to actualize "five positions one team" within the community groups. Benxi city instituted a yard head, building head, residential community representative, residential community intermediates, a work committee composed primarily of volunteers, unobstructed access and communication within the community, and a clear channel for services, thus providing reliable services and dependable access to those services for all community members. Taking Xinming Street Chengjia district of Benxi as an example, there are 84 buildings with a total area of 320,000 m^2 of residential space. This was divided into three residential areas: A with 42 buildings, B with 28 buildings, and C with 14 buildings. The community housed 3,428 households and had a population of 8,972 people. In May 2006, after the first set of people moved

in, the party working committee immediately established the residential community groups. There were 154 party members altogether in the community, placed in eleven different party branches in several buildings. This means that for every four to five buildings, there is one party branch. In addition to the party branches, there are twenty-three smaller party groups. In order to maximize the full potential of the party groups, when residents began to move in, the residential community party committee chose a few people among the former residents who were original party members to constitute part of the new ruling party group. This is to ensure that groups within the former communities preserve their existence. After pairing and selecting the members to constitute the community party leadership group, they created the community party committee, the building party branches, and the smaller party subgroups, with the three levels of groups working together under one system. Altogether, there were fourteen people working in the residential community, with five chosen through an election process which is held every four years, and the other nine being employed through the government employee tests; one of the requirements for employment being that applicants must have a minimum of technical or high-school educational background.

After Chenjia community's party committee was established, it immediately started the work of managing the society and doing a complete survey of all residents upon their moving in. The survey recorded information and compiled a community booklet, recording data for every building entrance, for every floor, for every household on their composition, economic situation, whether or not they received insurance, level of poverty, technical abilities, or other special skills. The reestablished community was equipped with everything needed for governing the community in terms of workforce and physical resources and acted as the nucleus for the residents to restart their lives.

All the reformed communities have residential populations of one to three thousand which is much larger than before. The importance and maintenance of public security cannot be over emphasized. The residential communities were established in an open manner, with residents being able to choose the area and floor where they wanted to live. The new residents came from varied social backgrounds, unlike the previous residential communities which composed of old acquaintances and long-standing neighbors.

In order to improve public security and order, Liaoning Province established more local police stations; so, according to construction standards, every residential community had a police workstation and a community policeman. Now, there are daily security patrols through the community and a culture police beat; some residential areas established a volunteer party corps and security patrol team. Some communities also established volunteer positions specifically for the unemployed. Security patrols through the community greatly heightened the community security and overall safety and caused a reduction in crime rate. There were 2,051 accounts of civil and criminal cases and security breaches in Fushun's former shantytowns, 22 % lower than the pre-reconstruction rate in 2004.

After reconstruction, the new community's buildings and range of social services were all installed to be at par with the countrywide construction standards.

The community-used building was designed at the same time with the residential areas, inspected at the same time, and put into use at the same time. The facilities of the new community had a unified appearance, a unified group notification system, a unified system of services, and altogether, they formed a complete set. There was one fixed place for notifications outside the party committee office, a basically complete space set aside for cultural recreation and sporting activities; all funds for the community offices went into financial plans, and community workers received living stipend, medical insurance, and retirement insurance.

In the Modi community of Fushun, the building used by the new community was four stories tall, with a total floor space of 1,200 m^2, far exceeding the province average of 300 m^2. The building had full capabilities and complete facilities. The first floor is a one-stop main office containing an archive's office, police workstation, and aid office. The second floor has offices for community governance, a 365 workstation, a reception room, an exhibit of the entire reconstruction project, and a recuperation office for the disabled. The third floor has childcare facilities, a long-term education information point, a red cross society's office, the women's defense workstation, and a fitness room. The fourth floor has an activity center, library, family planning workstation, and family health guidance station.

Chengjia community in Benxi has a unique characteristic: Resettlement houses and market houses are in the same residential community. Residential areas A and B are reconstructed areas. The city government built the residences in accordance with national guidelines, using very good architectural materials and design. However, the residents came from relatively disadvantaged groups in the society, with many having lost their jobs. Area C has apartments on the market. The environs are better than areas A and B,[2] with classically beautiful scenery. Naturally, residents' income is also higher than that of the former residents, so is their level of education and culture. Areas A, B, and C belong to the same residential community and thus interact in daily life. Area C brought more cultural exposure and more contact with the employment market (including employment information) to the residential community, to share with the residents of areas A and B.

As described above, after the industries collapsed, former employees also lost their access to medical care, leading to a great decline in public health. After shantytown reconstruction, every residential community established a health-care clinic with professional medical care providers. Apart from the improvement in medical care conditions, the medical work unit groups of each city and county regularly go to the resettlement houses, providing health checkups for the populace and bringing medicine to those in need, especially residents with restricted mobility. Each level of work group has medical care work units, with established hospitals and pharmacies. Residents experiencing economic challenges were issued a

[2] The housing price before reconstruction was set at 550 RMB per square meter, while the marketable apartments in area C sold for 1,590 RMB per square meter. Profit from selling the apartments on the market was used in construction of the residences.

discount card to use at the hospitals and pharmacies. This card gives them access to excellent medical attention at a reasonable rate and 10 % off medicine.

Reconstruction has brought about a great change to the former shanty environments. Central heating cut down on air pollution, buses stopped right at the residential community entrance, paved roads led to every entrance, and the overall community was greener, lighter, and more pleasant. There were also improvements in sanitation conditions, and this greatly improved the quality of residents' life through the prevention of diseases that could be spread through an unhealthy environment. After entering their new houses, the former shanty areas' residents claimed that the biggest change in their communities was that the environs were clean and modern. The new communities enjoy a superior and spacious environment, green grounds, beautiful scenery, a clean atmosphere, and complete facilities; there is essentially no difference between the restricted areas and other urban apartment complexes. While moving in, the former shantytown residents were emotionally moved and they embraced their new life with open arms. The unemployed ex-miners once again entered into urbanization; not only were their living conditions better, but the distance between them and other city residents was minimized, allowing them to live with respect and retrieve their self-confidence once again. Looking at Modi in Fushun city, 1 year after reconstruction, there were 21 marriages within the community and not one reported criminal case; life had returned to normal.

The most obvious result of the reconstruction of former shanty areas is the rise in residents' social and economic status. Many residents of the renovated areas were former employees of state-owned or large enterprises who slid into poverty following the large-scale closing of factories after they had experienced industrialization and urbanization. This social group could not reenter contemporary society relying on their own economic abilities; they could only slide further into poverty until they became true shantytown dwellers. It was in the light of this that Liaoning Province decided it was necessary to rebuild shantytowns, seize the opportunity of the economic situation, stick out a hand and help the former miners from slipping further down the abyss of poverty, and give them a chance to return to mainstream urban society. The renovated buildings were beautiful gifts given to the unemployed by the government. Using Benxi city as an example, the shantytown residents originally had residences averaging 30 m^2 and with the value of 30,000 RMB. In 2005, the year of reconstruction, property prices were close to 2,000 RMB per square meter. This means that their residences would have been valued at about 60,000 RMB, which is double the original value. By 2011, the houses were valued at 100,000 RMB, and yet the former residents paid only 20,000 for their new residences.

The construction of the new communities also led to a fruitful rebuild of denigrated character. Apart from the social services provided as described above, community groups also developed many different types of art and cultural activities, thus strengthening cohesion and identity among the residents. The new houses were allotted to residents based on their choices, and thus, the residents came from all directions. Most were strangers to each other, and few were old neighbors. This resulted in a few inconveniences at first, and this led to the need of social

activities that give residents more opportunities to gather together and know each other better. The party committee of Chengjia community in Benxi gathered funds and bought all types of musical instruments, established a dance team, an exercise team, an arts and culture team, and a choir. The community can boast of two cultural squares with an overall spread of 16,000 m^2 and 36 pieces of outdoor exercise equipment. Community members developed the arts and culture program, greatly enriching and enlivening the community's cultural life while encouraging interaction and cooperation between the residents. Every evening, there is singing and aerobic dance, partner dance and other activities which attract residents' attention and participation.

After the new community was established, community workers carried out a survey, dividing households between the city, district, and street. In order to help the resettlement residents solve physical issues, group volunteers helped them move to their new residences. For residents who could not pay the entire housing price, they helped them set up loans. Taking Chengjia in Benxi as an example, after reconstruction, the nucleus of the residential community at the party group level developed every type of activity and created a system of urban community management for the residents. Community group tasks are categorized into three: helping residents gain re-employment, providing services for them, and helping them communicate with the government.

Encourage re-employment and re-establishing: To begin life again, the community employed forty-two residents in community work, such as grounds maintenance, gardening, and security. The monthly salary for community work was 500 RMB, with an added 320 RMB for welfare, thus providing these residents with a basic livelihood. The residential community contacted the government so that they could offer small loans to residents in order to encourage them to set up their own businesses, such as neighborhood eateries, groceries, flower shops, cosmetic shops, and the like. The community also contacted the human resources department, the labor bureau, and some industries in order to provide employment news, recommend positions, and create an overall platform for employment. Within the residential community, the labor bureau set up a market-oriented employment training program under the name "Sunshine Training."

Provision of social services: The community was established with a "10 min service circle" which ensured that residents can get access to services within ten minutes walking distance from anywhere in the community. Apart from the volunteer group that composed of party members, the residential area established eight branches of resident volunteer groups. The eighty core members serve the orphans, widows, the elderly, and disabled, bringing them groceries, giving them haircuts, and fixing exercise equipment and mobility devices.

Develop the "three representation" activities in helping residents communicate with the government: The first representation refers to helping residents obtain documents, such as elderly citizens' IDs and disabled persons' IDs. The second representation refers to legal representation. They established a community legal station, communicating with the government on behalf of residents with suitable cases in order to resolve issues. The third representation refers to helping citizens

write petitions to the district and government petition bureau, thus opening up the path for residents' appeals.

7.3 Low-income Settlement Reconstruction: Social Effect and Subjective Well-being

The final purpose of government public policy is to improve resident welfare (Yew-Kwang 2005). However, in recent years, a number of local governments are more concern with the growth of total GDP, than being concerned with the housing problem or the residents welfare. At the same time, accompanied with economic accumulation and space aggregation since the reforms and opening, house prices have rocketed in some part of the first-tier cities due to the effect of supply and demand. Also, the benefits gained by land finance has made some local governments not to check the soaring house prices. In large cities such as Beijing, Shanghai and Shenzhen, etc., house price is as high as 21 times of citizens' annual incomes, which is far beyond what many citizens' can afford. With the help of CGSS database, Lin Jiang (2012) conducted a practical analysis of the relationship among city house price, house property and citizen well-being. Four conclusions were made as follows: First, The degree of rising city house price has a negative effect on residents' well-being; the higher the house price, the lower the well-being of residents. Second, resident's ownership of house property is notably related to their well-being. For example, well-being of residents owning a unit house is remarkably higher than that of tenants; similarly well-being of residents owning more unit houses is remarkably higher than that of residents owning a unit house. In other words, the higher the number of unit houses owned, the greater the well-being of residents. Third, the increase in house price has negative effects on tenant's well-being and has positive effects on the well-being of residents who own apartments. Fourth, house quality also affects residents' well-being.

In general, the original residents are usually in low-income settlements, with less education and work ability, are usually old, weak, ill, or disabled. The average age is 48.6 years old; about 25 % of them are over 60 years old. Fifty-three percent (53 %) of them have junior middle school education and below, and only less than 4 % of them have university education. Over 50 % of them are state-owned enterprise workers or state-owned enterprise workers who have been laid-off; over 50 % of them are staff of manufacturing enterprises or industries with low profit, or mine enterprise workers. In terms of income, the average income of each original household in shantytowns is about 30,000 RMB annually. With Enger's coefficient as 0.66, it means that all of them belong to the low-income class. Shantytown areas are the sojourn places for low-income people, thus it is impossible for them to change their housing condition and survive on their own without any assistance; in other words, they lack the renewing capability, therefore, the importance of this study on the social effect of shantytown reconstruction.

Bugg-Levine and Emerson (2011) criticized the dichotomy idea of public welfare and business by analyzing a precedent in which Quaker Presbyterians mixed faith, business, and community together in the 1600s. They proposed a concept of "blended value," that is to say, it is not necessary to make one's choice between social benefit and economic interest and at the same time aim to make the maximum of blended value. Investment performance should be evaluated along with the social return investment, which includes comprehensive consideration of the economic, social, and environmental benefits. This is irrespective of government or profit/nonprofit NGO participations, so far the public welfare is satisfied and the expected returns obtained. At the technical level, if the assessment system is implemented, the social effect should be measured scientifically.

So far, a generally recognized method of measuring social effect has not been formed because of different visual angles, ideas, and complex subjective or objective factors. Happiness is not only a standard to evaluate social development, but also a goal and a base for government performance (Zheng Fanghui 2011). In 1972, Jigme Singye Wang chuck, King of Bhutan Kingdom, proposed the concept of citizen happiness index, resulting in gross national happiness (GNH) which consists of economic growth, environment protection, culture development, and government administration; it blended social effect and happiness together. The world values survey, directed by Ronald Ingle hart, a professor of the University of Michigan, announced a generally recognized index system in which interviewees made direct answers to the two-dimension question of happiness and satisfaction in accordance with individuals. In view of demand, the academic field has proposed three kinds of index system: A, B, and C. The A index system relates to the degree of life satisfaction in the field of cognitive categorization, including the degree of survival satisfaction (such as job, income and social security), and the degree of life quality satisfaction (such as housing, health care, and education). B index system is composed of psychology and pleasure in the field of emotion category. C index system is aimed at interpersonal relationships as well as harmonious degree of individuals and society. Therefore, well-being is a key variable connecting closely with social effect in the above-mentioned literatures.

In view of economics, well-being is the utility of goods which satisfies people's demands; so the measurement of well-being is equal to the measurement of utility. "The restoring ancient ways theory of cardinal utility measurement proposed by Yew-Kwang Ng is the fundamental of measuring well-being after undergoing change from cardinal utility measurement to ordinal utility measurement and back again to cardinal utility measurement (Yew-Kwang Ng. 2004. Welfare Economics, London: Palgrave/Macmillan)." Since utility is the relation of subject satisfying object demand, whether to satisfy object demand or not and how to satisfy object demand depends on subjective feeling. It is no doubt that the human being is the direct subject to measure utility (well-being) and is essentially different from measuring GNH as well as well-being examination. Generally, in questionnaire survey, well-being is universally measured by self-report measurement; i.e., the degree of well-being that is provided by interviewees themselves. Perhaps some researchers who have different opinions will indicate that the interviewee's answer is not an ideal way to measure well-being as individuals

have personal measurement standards and an individual's viewpoint might differ from the other. However, researchers who say that it is possible to measure well-being insist that subjective personal experience of well-being is the base of self-report measurement effectiveness. The research exhibits that subjective data are able to show human life satisfaction degree even though deviation exists, and self-report measurement in questionnaire survey is the most effective method to obtain subjective well-being (Lou Lingli 2009).

7.3.1 Factors Affecting Well-being

There are various effective factors of well-being, and the basic starting point is the relationship between income (economic development level) and well-being. Several studies exist that provide evidence that subjective well-being has negative relation with GDP growth after income reaches a certain level, and this called the Easterlin paradox. There are two ways to explain Easterlin paradox. On the one hand, scholars explain income paradox based on the physiological foundation of an individual well-being. A person's well-being is decided by individual emotion, and then, the first feeling of well-being decreases gradually after the person's adaption to wealth increase. According to Lykken and Tellegen (1996), an individual well-being maintains a stable value during a life cycle respectively. Income increase has only taken a small part of well-being increase (Bruni 2007), and the impartation of various short-time conditions on well-being are very limited, as person's well-being will always return to its earlier value.[3] On the other hand, a number of effective factors are also taken into account as they decide to a great extent, the degree of well-being. Except for absolute income, other factors may affect well-being. First, relative income and income gap will affect personal well-being; in other words, a phenomenon of "keeping up with the Joneses" will affect personal well-being. Thus, some researchers often think that well-being has no relation with absolute income, and relative income will affect well-being (Luis and Becker 2007). Second, history and expectation are called time comparison; the change of human physiological indices will affect well-being (Chen Huixiong 2008). Third, hidden factors related to personal life, such as health, family love, and personal relationship play a great role in well-being improvement. Fourth, other macrofactors such as inflation, joblessness, government expenditure and environment, and so on, also influence well-being (Lu Yuanping and Wang Tao 2010). In addition, some researchers think that well-being has to be excited by pulsatile variation, even though high-income people have no satisfactory well-being without pulsatile variation. The less rare the enjoyment is the higher the

[3] Some people critic this option and think it is impossible to return to a certain value after people undergo a certain impact. Since relative study relates to behavior economics and no detail is available here, please refer to Lou Lingli (2009) and other references.

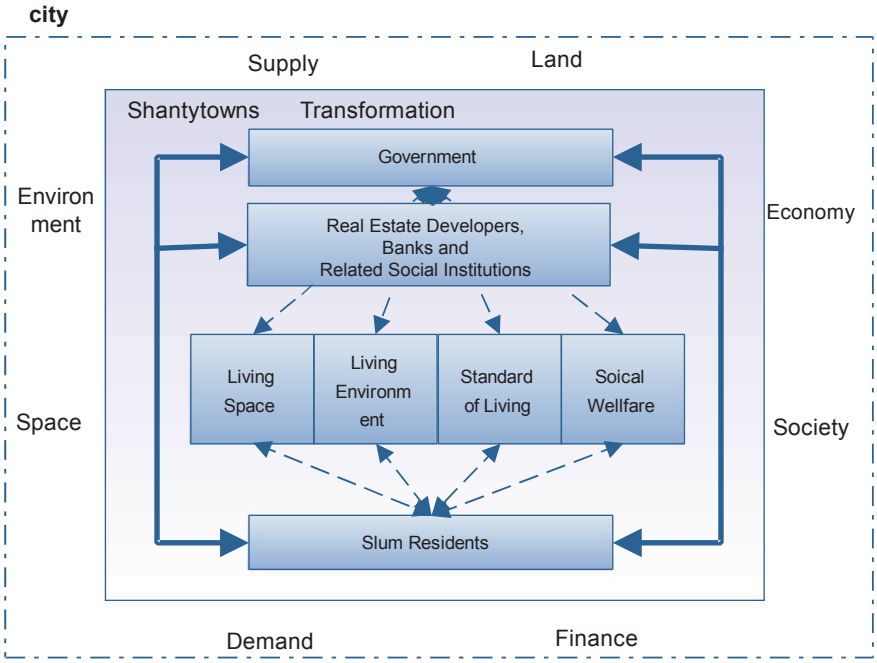

Fig. 7.1 Research framework

well-being is. In general, a number of diverse factors contribute to the well-being of human beings; but it is clear that these factors do not exist independently but that they connect with one another. These factors are strongly collinear and interdependent.

Based on former research, this chapter mainly probes into the influence of the change of family income and expenditure, the change in the quality of community life, and social effect on original resident subjective well-being before and after low-income settlement reconstruction. Research framework and thinking methods are shown in Fig. 7.1. Theoretical model and research framework, data processing (statistical and empirical test), conclusions, and relative policy suggestions are all described in this section. In order to obtain first-hand data on the performance of shantytown reconstruction in terms of resident welfare, the research team along with an authoritative questionnaire survey company, in accordance with standard procedures, selected six cities in Liaoning as survey samples, Shenyang, Fushun, Benxi, Chaoyang/Beipiao, Tieling, and Fuxin, and focused on six aspects, such as living space, living environment, resident economic condition, social welfare, government housebreaking activity, financing, and relief. The problem of shantytowns was more typical and serious in these cities, with over 80 % of the shantytowns located there. Over a thousand (1,011) pieces of typical sampling survey were collected with 95 % confidence and ±3.5 % sampling error. Internal consistency

reliability was carried out, and Cronbach α was found to be 0.936 which means data quality is fully reliable.

7.3.2 Theoretical Model and Research Method

According to the method by Glaser (2001) and ZhengSiqi (2011), a consumer described by Cobb Douglas utility function is analyzed as follows:

$$U = \theta H^{\alpha} X^{1-\alpha}$$

where U is consumer utility function, θ is community life quality, H is total consumption of family house, and X is other commodity consumption, it is subjected to the following budget constraint:

$$W = P_H H + P_X X$$

where P_H is house price, W is total family wage income, P_X is the price of other commodity, standard to 1. According to utility function and budget constraint equation, the first-order condition can be derived as follows:

$$H = (P_H, W) = \alpha W / P_H \tag{7.1}$$

where α is the housing expenditure as a share of wage income, $0 < \alpha < 1$, indirect utility function is defined:

$$U = \frac{k\theta W}{P_H^{\alpha}} \tag{7.2}$$

where

$$k = \alpha^{\alpha}(1-\alpha)^{1-\alpha} \tag{7.3}$$

Equation (7.3) is conducted as the first order of Taylor expansion, getting $k = \omega\alpha$, where ω is constant. Indirect utility function is taken logarithm on both sides:

$$InU = In\omega\alpha + InW + In\theta - \alpha InP_H \tag{7.4}$$

As mentioned above, utility is a relatively a fuzzy concept, so it is difficult to measure precisely in economic field. However, in this section, subjective well-being will be the key index to measure utility.[4] In order to evaluate the change in the subjective well-being and relative factors before and after the low-income settlement reconstruction, three kinds of explanatory variables were induced:

First are the family income and expenditure variables before and after the low-income settlement reconstruction, including family income *inco*, quadratic

[4] President Hu Jintao gave a speech in Yale University: "pay attention to person's value, right, and freedom; pay attention to person's life quality, development potential and happiness index and finally realize human being comprehensive development."

term of family income $inco^2$, the cost of purchasing house before and after low-income settlement reconstruction P_h, the change of family consumption structure *eng*(Engel coefficient). Second are the community life quality variables, such as housing area increment before and after the low-income settlement reconstruction *area*, the improvement of drinking water *wat*, the increase of green land *gre*, the increase of housing comfort *comf*, air quality improvement *air*, installing sewer *sewe*, smooth communication network *comm*, and public transportation convenience *traf*. Third are the social effect variables, including security increase *sec*, the increase of political participation *pol*, harmonious neighborhood relationship *neig*, job increase *job*, job training opportunity *trai,* etc. The basic regression equation is seen below:

$$\text{InHappiness}_i = \Phi\left(\eta' \text{InFamily}_i + \xi' \text{InCommunity}_i + \chi' \text{Insociety}\right) + \varepsilon_i$$

7.3.3 Description of Variable and Data

The descriptive statistics of variables is shown in Table 7.4, where well-being index *hap*, family income *inco*, the cost of purchasing house before and after low-income settlement reconstruction P_h, the change of Engel coefficient *eng* and housing area increment before and after the low-income settlement reconstruction *area* are the real data used. The improvement of drinking water *wat*, the increase of green land *gre*, the increase of housing comfort *comf*, air quality improvement

Table 7.4 The descriptive statistics of main variables

Variable	Obs	Mean	Standard deviation	Min	Max
hap	1,311	78.31,579	14.22371	30	100
inco	1,311	31,035.03	13,436.49	3,000	100,000
P_h	1,311	25,706.86	27,085.61	0	263,250
eng	1,302	0.002815	0.140827	−0.70328	0.618619
area	1,311	15.67429	24.33949	−250	119.7
wat	1,311	0.694889	0.46063	0	1
gre	1,311	0.784134	0.411579	0	1
comf	1,311	0.929825	0.25554	0	1
air	1,311	0.842868	0.364064	0	1
sewer	1,311	0.997712	0.0478	0	1
comm	1,311	5.678871	0.900299	1	7
traf	1,311	5.56598	0.976848	1	7
sec	1,311	5.407323	0.96444	1	7
pol	1,311	5.229596	1.048405	1	7
neig	1,311	5.273074	1.082208	1	7
job	1,311	5.062548	1.160702	1	7
train	1,311	4.942792	1.220283	1	7

air, installing sewer *sewe* are dummy variables which is in the 0–1 range based on the design value in the questionnaire survey. For example, for the variable "improvement of drinking water" *wat*, in the questionnaire survey, the question asked was "does drinking water quality become better after the low-income settlement reconstruction?" Three choices can be selected; if the answer is "yes," the value is 1, but if answer is "no" or "same as before," the value is 0 for the variables smooth communication network *comm*, public transportation convenience *traf*, security increase *sec*, the increase of political participation *pol*, harmonious neighborhood relationship *neig*, job increase *job*, job training opportunity *trai, and so on.* Seven choices were designed in the questionnaire survey which ranged from "completely disagree" to "completely agree," coded 1–7. The descriptive statistics of variables is shown in Table 7.4.

In view of the variable correlation matrix, the correlation coefficient of the variable being explained *"hap"* and explanatory variables is larger and the degree of significance is higher, indicating that correlation between the variable being explained and various explanatory variables exists to a certain extent. Simultaneously, most explanatory variables are independent data in the questionnaire survey, so the correlation coefficient is smaller and the degree of significance is lower. It should be noted that explanatory variable correlation coefficients are far lower than 0.8, thus the multi collinearity problem is not serious. In general, an objective analytical result can be obtained by fitting regression of variables (Table 7.5).

7.3.4 Empirical Results and Analysis

The results of typical sampling survey in six cities in Liaoning Province were processed and analyzed comprehensively by the consumer utility function. Model (1) and model (2) are OLS regression estimation results before and after controlling series of variables of social effect respectively. The model fitting was improved greatly after controlling series of variables of social effect. Research indicates that social effect after low-income settlement reconstruction, such as security increase, the increase of political participation, harmonious neighborhood relationship, job increase, job training opportunity, etc., greatly influences original resident subjective well-being. Both job increase (*job*) and job training opportunity provided by government (*train*) have positive correlation with increase in subjective well-being ($p < 0.01$). It is worth mentioning that in model fitting results, the coefficients of family income *inco* and quadratic term of family income $inco^2$ after low-income settlement reconstruction are positive and negative respectively; that is, the relation curve of family income and well-being index exhibits clearly the shape of "upside down U." This result is supported by Seligman et al. (2006). However, since investigation "objects" are a special group of original residents living in low-income settlements, a regular shape of "upside down U," which appears usually in the academic field cannot be neglected in policy research. The shape of "upside

Table 7.5 Variable correlation coefficient matrix

	hap	*eng*	*inco*	*area*	P_h	*wat*	*gre*	*Comf*	*air*
hap	1								
eng	−0.0146	1							
inco	0.0969*	−0.0537	1						
area	−0.0113	−0.1051*	0.1350	1					
P_h	−0.1181*	−0.0152	0.1530*	0.4921	1				
wat	0.2953*	0.0438	−0.0047	−0.0733*	−0.2853	1			
gre	0.3014*	0.0151	−0.1079*	−0.1513	−0.3613	0.4818*	1		
comf	0.1582*	−0.005	−0.0502	−0.0907*	−0.2075	0.1811*	0.2405*	1	
air	0.2897*	0.0101	−0.0844	−0.1147*	−0.3078	0.4103*	0.4612*	0.2424*	1
sewer	0.0617	−0.059	0.0037	−0.0375	−0.0890*	0.0376	0.0525	0.0493	0.0671
comm	0.0147	−0.0297	0.1010*	−0.0015	−0.1369	−0.0248	0.0291	0.048	0.0532
traf	0.1196*	−0.0237	0.0848*	−0.0014	−0.1571	0.0974	0.0383	0.1256	0.0571
sec	0.1705*	−0.0432	0.016	−0.0948*	−0.3037	0.1580*	0.2294*	0.1099*	0.2650
pol	0.2826*	−0.0015	0.0574	−0.01	−0.2117*	0.2258	0.3025	0.1314	0.3406
neig	0.2671*	−0.0508	0.0233	−0.0022	−0.2043	0.1933*	0.2747	0.1218	0.3182
job	0.3968*	−0.0112	0.0358	−0.0265	−0.2529*	0.2427	0.3239	0.1512	0.3611*
train	0.4309*	−0.0131	0.0568	−0.0407	−0.2398*	0.2731	0.3341*	0.1144*	0.3801

	sewer	*comm*	*traf*	*sec*	*pol*	*neig*	*Job*	*train*
sewer	1							
comm	0.0716*	1						
traf	0.0441	0.5210	1					
sec	0.0865	0.3697*	0.3563	1				

(continued)

Table 7.5 (continued)

	sewer	*comm*	*traf*	*sec*	*pol*	*neig*	*Job*	*train*
pol	0.0257	0.3070	0.3053*	0.4374	1			
neig	0.0416	0.2585*	0.2537*	0.3907	0.5590*	1		
job	0.0439	0.2778	0.2313*	0.4266*	0.4894	0.4884	1	
train	0.037	0.2723	0.2065*	0.3921	0.5353*	0.5234	0.7603	1

*Representatives at the 1 % significance level

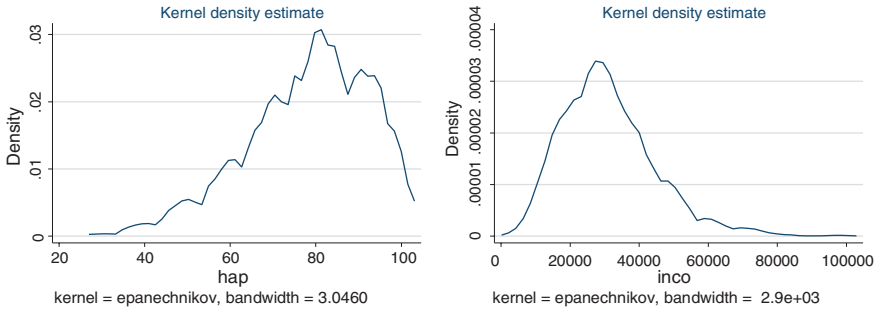

Fig. 7.2 Kernel density estimation of subjective well-being and family income

down U" between income and well-being appears in the original residents living in low-income settlements, and it shows that original residents have more well-being than in other ends. In future, Government should pay more attention to well-being of the other two end groups at the two extremes of the curve. Compared with the obvious shape of "upside down U" between income variable and well-being index, the change of family consumption structure (Engel coefficient) has no effect on subjective well-being.

At different well-being levels, it is possible for the effective factors of subjective well-being to have certain differences. People with different income levels have different understanding of well-being. As shown in Fig. 7.2, both subjective well-being and family income concentrates in a certain range, but scattered distribution is also in other ranges and span length is wide. Thus, target analysis is necessary to study especially with samples in different stages and in different income levels. It is different from the whole sample OLS regression estimation method of model (1) and model (2). Model (3), model (4), and model (5) provide quantile regression estimation results of sample population at 25, 50, and 75 %, respectively. Model (6) provides quantile regression estimation results of low-income level (family income yearly is less than 20,000 RMB).

Quantile regression estimation results of model (3), model (4), and model (5) show the community life quality variables, such as housing area increment before and after low-income settlement reconstruction *area*, the improvement of drinking water *wat*, the increase of green land *gre*, the increase of housing comfort *comf*, air quality improvement *air*, installing sewer *sewe*, *and* public transportation convenience *traf*, have positive correlation with well-being index. We conclude that the improvement of community life quality has positive effects on original resident well-being levels during the process of low-income settlement reconstruction. Smooth communication network *comm.* has negative correlation with well-being index, and regression coefficient is higher than those of whole samples at 50 and 75 %; this result is greatly different from our expectation judgment. After field investigation, it was found that most original residents are used to communicating through a traditional face to face method; the network is a new thing for them and they need time to adjust to it. This phenomenon can be explained by the variable

of harmonious neighborhood relationship *neig*. From the whole samples and quantile regression analysis, both regression coefficient of *neig* and degree of significance are low indicating that harmonious neighborhood relationship does not raise well-being. The question of "whom would you ask for help when you have difficulties on the job?" was included in the questionnaire survey. Less than 12 % (11.4 %) of original residents chose "asking neighbors for help before home moving," but this ratio goes down to 9 % after home moving. The larger the cities are, the smaller the ratio is. For example, in the larger cities of Shenyang and Funshun, the ratio is less than 7 %. This is a social phenomenon that needs to be considered.

The regression estimation results of low-income groups show that the increase of well-being index is mainly from two fields. The first is from community life quality improvement, such as installing sewer and the increase of housing comfort, as the regression coefficients are up to 6.210 for installing sewer and 7.888 for the increase of housing comfort, which are far higher than those of other models. The significance level is also high. The second is from job training opportunity provided by government; this variable regression coefficient is up to 4.287, so it is clear that this figure is higher than the results of regression estimation of whole samples at 25, 50, and 75 % quantile. In addition, the regression coefficients of family income and family consumption structure are greatly different from other models and the significance level is also low (Table 7.6).

7.4 Summing Up

7.4.1 The Key Lessons of Reconstruction of Liaoning's Shantytowns

First, shantytown reconstruction was an important turning point, with the merging of the reconstruction and rehabilitation of the residential communities, building of effective local groups, and establishing a complete set of social services to establish new grounds for life and society. While Liaoning government was promoting reconstruction, they had already started to reestablish community organization. At the early stage of reconstruction, the reestablishment of community organization had the party committee at its core, and the organization did not originate with the people. In other words, the people were organized, and the government entered the community through the administrative system. The administration of the community will continue to be strongly supported and overseen by the government for quite some time, with secondary support coming from the society. While this type of community organization may seem far behind that of most cities in China where organization is mainly overseen by the residents, it is however suitable for the present situation in the reconstructed areas. The current government-directed administration is beneficial in that it allows direct communication between the people and the government; helps those who are weak socially to return to the center of society, enjoy the public services, and establish a new life. The experience of reconstruction in Liaoning has emphatically proved that, under particular

Table 7.6 Estimation results of effective factors of original residents in low-income settlements

Dependent variable *hap*	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
inco	0.000602***(6.17)	0.000542***(5.91)	0.000699***(4.98)	0.000581***(5.47)	0.000560***(5.62)	0.00378**(2.32)
$inco^2$	−6.28e−09***(−5.05)	−5.89e−09***(−5.05)	−7.94e−09***(−4.51)	−6.29e−09***(−4.66)	−5.79e−09***(−4.72)	−0.000000143**(−2.36)
P_h	1.07E−05(0.64)	0.0000289*(1.80)	0.0000395*(1.66)	0.0000339*(1.83)	−5.1E−06(−0.31)	1.02E−05(0.24)
eng	−1.046(−0.41)	−0.968(−0.40)	1.949(0.50)	−3.022(−1.08)	1.804(0.76)	−3.123(−0.61)
area	0.00687(0.4)	−0.00732(−0.45)	0.00582(0.26)	−0.0141(−0.75)	−0.013(−0.74)	−0.00537(−0.15)
wat	3.686***(3.93)	2.899***(3.28)	3.286**(2.43)	1.792*(1.76)	3.247***(3.30)	6.210***(3.05)
gre	6.372***(5.88)	4.034***(3.89)	4.610***(2.86)	4.623***(3.86)	0.926(0.77)	3.362(1.00)
comf	3.469**(2.35)	3.589***(2.58)	6.395***(2.98)	1.319(0.83)	0.702(0.45)	7.888*(1.74)
air	6.136***(5.29)	2.337**(2.06)	4.057**(2.25)	3.055**(2.32)	3.087**(2.52)	5.850*(1.86)
sewer	11.45(1.53)	13.27*(1.88)	17.03***(3.26)	22.31***(3.32)	3.805(0.98)	
comm	−1.064**(−2.25)	−2.312***(−5.02)	−2.028***(−3.00)	−2.361***(−4.41)	−3.819***(−7.38)	−1.167(−0.90)
traf	1.619***(3.68)	1.264***(2.98)	1.385**(2.21)	1.351***(2.74)	0.606(1.22)	−1.196(−1.14)
sec		−0.492(−1.15)	−0.109(−0.17)	−0.101(−0.20)	−1.044**(−2.01)	1.605(1.49)
pol		0.376(0.87)	0.6(0.92)	0.0811(0.16)	0.168(0.33)	1.263(1.21)
neig		0.127(0.32)	0.711(1.18)	0.251(0.54)	−0.0274(−0.06)	0.192(0.19)
job		1.791***(3.87)	2.094***(3.02)	1.620***(3.03)	1.707***(3.14)	−1.092(−0.92)
train		2.843***(6.28)	2.177***(3.26)	3.234***(6.17)	3.255***(6.32)	4.287***(3.75)
_cons	36.07***(4.45)	26.87***(3.50)	0.846 (0.12)	17.29**(2.26)	65.33***(13.15)	12.21(0.85)
N	1,302	1,302	1,302	1,302	1,302	231
r2	0.186	0.288				0.358
r2_a	0.178	0.278				0.31
F	24.49	30.48				7.465

t in bracket, *to represent significance level, where *$p < 0.1$, **$p < 0.05$, and ***$p < 0.01$

government policies, residents can rise in social and economic position, reentering the mainstream of urban life.

Second, shantytown reconstruction has been highly effective in destroying and preventing the reoccurrence of a culture of poverty and helping residents to reform themselves. Using mixed-income residences, the new communities pushed forward the creation of a socially mixed community to break apart the culture of poverty and prevent its rebirth. This goal is being achieved through utilizing the presence of middle class residents to pull up the low-income residents. The residential community has developed educational and cultural activities, and disseminated legal knowledge, all of which has led to a rise in residents' ethics. The UN research report from the Human Settlements Program believes that in improving the poverty zones, reform and renovation will be far more effective than establishing completely new residential areas, with large-scale demolition and new construction. Local transformation should be taken as the fundamental principle in reconstruction (UN Human Settlements Report 2006, XXVII). Liaoning's reconstruction of shantytowns followed this path. In order to minimize the wealth gap, Benxi city constructed over 600,000 m^2 of housing, and tens of thousands of residents moved into the new areas. This has alleviated many of the problems that came from areas with great concentrations of low-income residents. In Chengjia district, the new housing was located near communities of middle- to high-income residents, creating mixed-income communities. This raised the cultural level and educational resources of the former residents. Proximity to commercial residential areas also gave former residents numerous employment opportunities, including opening small stores, doing housekeeping and property management, cleaning, security, and more. Increased interaction between the communities created some level of trust, as well as help circulate news concerning educational and employment opportunities, or lead to direct introduction to employment. This is an undoubtedly great resource for the former shantytown residents.

7.4.2 The Experience of Residents' Well-being Before and After Reconstruction

The results of the typical sampling survey of low-income settlement reconstruction engineering, which was carried out by the method of "government guidance and market participation," exhibit a significant social effect. The increase of original resident subjective well-being is one of the most valuable indexes. Based on the idea of "blended value," the reconstruction engineering not only satisfies to a certain extent a desire of supporting public welfare, but also brings some level of social expectation returns. The conclusions of the empirical study can be summarized as follows: First, the social effect before and after the reconstruction, particularly the increase in jobs and job trainings provided by government, has produced significant effects on the original resident subjective well-being. The increase of well-being index is mainly from two fields for the low-income groups.

One is from the improvement in the quality of community life, such as installation of sewers and the increase in housing comfort. Another great effect is from the job training opportunity provided by the government. On the above-mentioned indexes, the regression coefficient and significance level are far higher than those of other model estimations. There is also a strong social effect between the low-income group well-being in relationship to other original residents in low-income settlements. Second, the relation curve of family income and well-being index exhibits the shape of "upside down U" before and after reconstruction, which shows that the original residents in middle-level income have more well-being than in other ends. Third, the results of quantile regression estimation show that the improvement of the quality of community life positively affected the original residents at different well-being levels. New communication methods and the change of neighborhood relationship before and after reconstruction reduced subjective well-being to a certain extent.

The low-income settlement reconstruction is not only an economic issue but also a social issue. Long-lasting social care for low-income groups is an unavoidable responsibility and obligation of the government. Government's target is not only to let low-income residents "live in," but also "live long" and "live well," which conforms to our idea of promoting city development of "inclination and smooth." "Inclination means that efficiency is first on space plan and urban development; "smooth" means that basic systems and public service supply are smooth, particularly in the public service equalization. This is a basic line to achieve "harmonious society" and "happy city." Finally, well-being can be regarded as a subjective idea, but well-being is objective. Well-being is composed of various factors, which people cannot do anything about such congenital factors, but we can have a complete public service system as an objective base of having well-being.

7.4.3 The Unfinished Project

There are many challenges still facing the reestablished communities, both systematic and long-term. Improvements in residences and environment are only the first step to complete the reconstruction.

First, returning the mainstream urban economic market is much more difficult than returning to mainstream society. As evident through the experience of reform in Liaoning, actualizing an improvement in living conditions and environment is not difficult with thorough planning, and the residents can return to contemporary society. In comparison, improving residents' employment situation is much more difficult and requires great involvement from the government in the form of training courses, creating incentives for starting businesses, training in skills that meet market demands, and creating residents' competitiveness in the market. At the same time, the government needs to create more jobs in the community work sector, to help those with lower marketable skills to find employment. The low levels

of education of former residents are also a barrier to their being employed in the university-oriented job market. In the post-reconstruction period, the greatest challenge is increasing opportunities for employment, using every method and means to increase residents' salaries and thus helping them reestablish a solid base for life and ensure continuation of positive community development.

Secondly, after residents are able to establish an economic base, the next steps in this ongoing plan will be to change the mind-sets of the people, rebuild the people's character, and lead them into modernization. When relocating from shanty rooms to new apartments, some old residents brought with them unhealthy and uncivilized habits. To counter this, the residential communities have developed many different types of educational activities to spread the knowledge of rights and wrongs, good and bad habits that are expected of the residents. The community volunteer corps have set up community cleanup and community environmental activities, helping residents to cast off bad habits, and acts in a more cultured manner. Community education is an important part of the community work; most communities have established urban schools, inviting professional teachers and lawyers to educate residents about topics pertinent to their lives, such as marriage laws, labor laws, and inheritance laws.

Thirdly, the relation curve of family income and well-being index which exhibits the shape of "upside down U" before and after reconstruction shows that government should pay more attention to the well-being of the other two groups at the extremes of the curve. Authorities should also pay enough attention to implicate and explicate changes before and after low-income settlement reconstruction, such as, new communication methods and the change of neighborhood relationship before and after reconstruction have reduced subjective well-being to a certain extent.

The experience of reconstruction of Liaoning's shantytowns not only provides new material for researches, but it also carries great implications for the reconstruction of slums all over the world. After moving into their bright new communities, the former shantytown residents have experienced a complete revolution in spirits and life prospects that will become apparent over time.

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Chapter 8
Transformation of Urban Infrastructure as a Development Strategy

8.1 Introduction

In comparative theory, the reconstruction of Liaoning shantytowns falls within the theory of Public Economic Externalities, especially environmental externalities. From earlier chapters, clearly, the reconstruction has resulted in a significant transformation to the living conditions of the urban poor through a comprehensive improvement to the environment and relevant supporting facilities. The upgrading of the infrastructural amenities has considerably improved the urban environment of the people. Not only has the project affected the people's livelihood, but also the built-in environmental projects reflect an innovative approach that provides valuable lessons for other countries with similar contexts planning similar projects.

8.2 Literature Review and Theoretical Framework

8.2.1 Literature Review

According to the UN-Habitat (2006), *The Challenge of Slums—Global Report on Human Settlements 2003,* slums are defined *as* poor living environments lacking basic infrastructures—with inadequate safe drinking water, inadequate sanitation, and poor quality, overcrowding, and unsafe housing structures. Throughout history, poor settlements have been a social phenomenon, which cannot be avoided no matter how developed the society is. The Brazilian Institute of Geography and Statistics (IBGE) defines a poor settlement as a living area with more than fifty disorderly housing structures, which are occupying public or other lands, with lack of main service facilities such as sanitation. The underprivileged in Brazil mostly live in such poor settlements, which are concentrated areas of makeshift and simple dwellings. Davis (2009) points out that these poor settlements are

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_8

usually and inevitably built in bad environments. For example, poor settlements in Johannesburg in South Africa all lie in the danger zones consisting of unstable dolomite soil, which has been severely damaged after several years of mining. At least half of black South Africans in that area live on poisonous waste polluted land and submerged areas.

The slums in Cairo are badly deprived of basic service facilities. There is inadequate drinking water and sewage is collected through ancient sewage tanks and transported in wooden barrels by donkey carts. Some inhabitants even generate electricity by themselves through dynamos. The community with one million people has access to one primary, secondary, and higher educational institution and this contributes to shortages in the public service (Soliman 2004). In 1992, the Egyptian Government took a census of middle and large sized cities including Cairo. The poor settlements were divided into two types: those in urgent need of restoration (majority) and those subject to removal and clear-out (minority). According to the result of the census, the government restored most poor settlements as well as cleared out those irredeemable slums. The restoration consists of standardizing the land and housing ownership, and improving the infrastructures such as supplementing the drinking water, sewage discharge, and power facilities.

The above examples summarized a remark of K.J. Button in his Urban Economics, Theory and Policy, that urban public service should be provided by government not private enterprise; and that urban infrastructure in particular should be undertaken by regional public service department.

8.2.2 Comparative Examples

Both developed and developing countries have confronted the challenges associated with poor settlement through the process of industrialization and modernization.

The large-scale building by central governments in the early years of development resulted in new slums. Take Britain for example, its government built "monolithic buildings" to house those who were paupers in 1890, after WWII, and in 1950s, respectively. These affordable houses lie in poor areas and are of a low quality but that level of cost of living was all that was affordable to the low-income groups. These affordable houses have become slums and a "chronic disease" for the city. Again consider the evaluation of the Egyptian National Planning Institute which shows that up to 1999, the total input to the restoration of Greater Cairo Region amounted to 285.5 million dollars and that 40 % of the money had gone into the improvement of the sewage system (Sims 2011).

In Brazil, a large amount of urban inhabitants live in informal or illegal communities and always occupy the public land. According to the statistics, slum paupers account for 25 % of the total inhabitants in Rio. The Brazilian government adopted new planning measures nationwide and defined certain communities as "special social benefits communities" to facilitate planning and formulate

relative land utilizing methods. Also, its government, instead of opposing slums as it formerly did, began to provide building materials and capital to these areas.

The Indian central government adopted assistance projects for the poor settlements residents for nearly 30 years in order to provide urban poor with basic living services such as water supply, road, pollution discharge, and street lamps. Besides, it also assisted in setting up stores and popularizing the use of the Internet, shielded the paupers from electricity and water charges and property tax, helped with the application of warrant, license and register, and sent out birth and death certificates, raising permits and providing property assessment. India is also under a trial implementation of "infrastructure financial fund" guided by the communities. The fund originates from the communities and aims to further expand the strategic assistance to housing and infrastructure projects.

Urban slum is an inevitable problem to the process of urbanization and the cognition process to this phenomenon from ignoring and opposing to emphasizing and accepting is necessary and an overall improvement. Those governmental measures such as lying down laws to assist house building, providing rent subsidies, mustering social power to help with the restoration, and improving people's living conditions and communities' infrastructure are positive attitudes in coping with the problem.

The urban housing construction in those Western developed countries and newly industrialized countries generally pass through three phases: large-scale building, combination of building and restoration, and concentration on restoration of old buildings. China is in the second phase of construction and in accordance, the mainly renovating practice for the city-villages and shantytowns are removal and rebuilding. In terms of environmental transformation, the reformations are the result of backwardness of the public and service facilities in these city villages.

In China, "government guidance" constitutes the major practice. Government has played a positive and crucial role in the effort of renovating the city, villages, and shantytowns and in different situations has adopted different strategies and supporting policies for various problems. Within this practice has evolved a model of "government guidance," market management, and social participation. The evolution of cities and shantytowns has been consequence of complex historical, economic, and systemic process. An important advantage of government guidance has been to implement environmental projects within the overall planning of urban construction. The formation of poor settlements elsewhere differ from the that of Liaoning Province and obviously land property rights have different legal basis in different countries depending on political systems. For example, the Brazilian government as with some other countries historically does consider low-income group in its process of city planning, the choice of housing construction land and improvement to infrastructure and communities (Han et al. 2005). When reconstruction focuses narrowly on urban renewal without taking account of income differentiation in society, it is hardly possible to improve the living conditions and urban environment fundamentally, and is often harder to improve urban facilities and relevant public supporting services for the low-income group.

8.2.3 Theoretical Framework

A few scholars have made contributions to the field of poor settlements drawing on externality theory, and in the process provided us also with theoretical and practical tools of analysis. Struyk and Lynn (Land Economics 1983) in "Determinants of Housing Investment in Slum Areas: Tondo and Other Locations in Metro Manila" listed some determinant factors in the slum areas such as the stock assessment of poor housing projects and the resultant changes of the inhabitants' incomes. Rondinelli (The American Journal of Economics and Sociology 1990) in "Housing the Urban Poor in Developing Countries" points out that the magnitude of housing deficiencies and the failure of conventional strategies are worldwide problems. Again the author, in another article on government policies for housing the urban poor in developing countries claims that most of the national shelter strategies are inadequate and should be enlarged; that in addition, housing financial system should be improved. The contribution of Externality Theory to social welfare and especially to environment externality in environmental economy is unquestionable. Externality can be divided into positive externality and negative externality. Positive externality has a constructive and progressive influence on the environment while negative externality is the contrary. Mair et al. (1984) has elaborated on this theory and although questioned some of its assumptions, it is still widely used in economic research. However, this analysis will adopt the explanation of the model by Papageorgiou (1978). The overall externality model is as follows:

$$\begin{aligned} E^{ij}\left[s,s'\right] &= \zeta^{ij}\left[s,s'\right]\xi^{ij}\left[\rho[s],\rho[s']\right] \\ E^{ji}\left[s',s\right] &= \zeta^{ji}\left[s',s\right]\xi^{ji}\left[\rho[s'],\rho[s]\right] \end{aligned} \tag{8.1}$$

(s,s') is the paired locations, and $E^{ij}[s,s']$ indicates the externality of i, j.

The formula aims to calculate the commutative overall externality of two rational economic men i and j.

Secondly, the equality is as follows:

$$\sum_{k}\alpha^{k}[s]\frac{\mathrm{d}}{\mathrm{d}s}E^{k}[s,S]+\sum_{l}\frac{\mathrm{d}}{\mathrm{d}s}f^{l}=0 \tag{8.2}$$

α^{k} indicates the shadow price of externality. $k; f^{l}$ indicates the land value of L.

This formula aims to calculate the shadow price of externality k given the location of L; and further calculate the overall utility of this rational economic man. If the utility of this economic man or its tendency is increasing, the implemented policy is effective; on the contrary, if the utility of this economic man or its tendency is decreasing, the implemented policy should be improved upon. This can serve as a way to measure whether the policy is in agreement with reality.

Besides, the effect to environmental transformation should also be taken into consideration. The positivity or negativity can be measured by the welfare formula proposed by Arrow. Based on the explanation of Fisher (American Economic Review 1973),

This aim was to calculate the social welfare of N economic man.

$$W(s) = E\left[U\left(A + s\overline{B} + sx\right)\right] \tag{8.3}$$

The following formula proposes to calculate the final value of risk and payback of a conservative economic man.

$$E = E\left[U\left(A + \frac{\overline{B}}{n} + \frac{x}{n}\right)\right] = E\left[U\left(A + \frac{\overline{B}}{n} - k(n)\right)\right] \tag{8.4}$$

The following formula aims to calculate the effect to externality and social welfare, and see whether the result will be positive.

$$E\left[U_i\left(A_i + \overline{B}_i + x_i\right)\right] = E\left[U_i\left(A_i + \overline{B}_i - k_i\right)\right] \tag{8.5}$$

The perspective of this social welfare model is that after environmental transformation, if the social welfare of overall inhabitants or its tendency is increasing, the implemented policy is effective. On the contrary, if, after environmental transformation, the environment is damaged or it affects negatively the living qualities of inhabitants, the implemented policy should be improved upon or removed. This can serve as a way to measure whether the policy is effective or not. Social welfare is an important indicator to livelihood of inhabitants.

8.3 The Living Environment in Shantytowns Before Reconstruction and Reasons for Their Deterioration

The obvious negative externality of shantytowns, include unbalanced planning and layout which affected the intensive use of urban land. The high density and sprawling nature of settlements and the inadequacy of support facilities in these areas led to an untidy and dirty environment. The lack of supportive infrastructure during construction and the consequences of shortage of capital input into facilities later resulted in deficiency of infrastructure and the deterioration of the living environment in the shantytowns. Subsequently, this explains the transformation of a resource city from the days of its prosperity to that of its collapse. Environment pollution, inadequacy of facilities, and transportation inconvenience were the hallmarks of before reconstruction. Public facilities in Liaoning were severely inadequate and derelict. First, it was hard for inhabitants to travel out since there was hardly any available road that was not severely damaged, because this was dirt on sunny days and changed into muddy tracks in the rainy seasons. Also, without street lights, it became stark dark at night. Second, there were inadequate supplies of drinking water and electricity. The dilapidation of the water and power pipe networks resulted in a long-term cutoff of water and electricity in some areas, and there were no solutions to the problems. Some inhabitants had to drink industrial raw water and well water. Due to the remote locations of some of these shantytowns and their high altitude geographical positions, there were widespread problems of “hard water,” because the water pressure was inadequate to bring up fresh

water. Third, a lack of available toilet and heating facilities made life very difficult for the inhabitants. It was common for hundreds of households in Shantytowns to share only one toilet. Coal was the main fuel for both heating and cooking. In Fushun Shantytown, an average number of 790 households used one toilet, while 93 % of its inhabitants relied on coal for heating and cooking. Fourth, a lack of drainage led to free discharge of sewage. This resulted in an overflow of sewage, making the environment dirty and stinking, full of mosquitoes and flies especially during the summer period. During the winter, the icy and untarred roads hindered transportation. Fifth, there was the problem of waste disposal. About a third of the population disposed of their waste randomly. Also, this was usually done in an untimely and unmannerly way leading to an environment with very poor hygiene. During this period, shantytowns basically had no respect for a green environment, and therefore the air was badly polluted. Given the unbearable cold winter and rain-battering summer, the poor suffered badly (Table 8.1).

The inhabitants in shantytowns are mostly laborers, many of whom were laid off or became unemployed during the restructuring of their plants, and the transformation of the economic system. Many were in no position therefore to improve their living conditions. Historically, shantytowns were products of early industrialization with modest existence. However, with the advancement of time and society, especially with the aid of reform and opening-up policy, shantytowns have not only lost their old time advantages but also have become the shackles for the development of those cities. Shantytowns are the joint effects of a series of present and past factors that reflected both the failures of the market and of government.

In 1914, Japan obtained the mining rights in Fuxin and built quite a few numbers of miners' shelters—which were called Labor Quarters. The origin of Modi Shantytown could be traced back to nineteenth century and the earliest houses were built during the Japanese Puppet Regime. These shelters were nearly 70–80 years old and barely had any infrastructure or supporting facilities.

The period between 1949 and 1978 witnessed the opening up of China and the national emphasis was more on production and local consumptions were mainly

Table 8.1 Waste, gas, and heating research in Shantytowns

Items	Options	Cities					
		Overall (%)	Shenyang (%)	Fushun (%)	Benxi (%)	Tieling (%)	Fuxin (%)
Old waste disposal mode	Centralized piling up	66.1	35.7	51.7	100.0	83.5	60.0
	Regularly removal	0.1	0.0	0.5	0.0	0.0	0.0
	Randomly piling	33.8	64.3	47.8	0.0	16.5	40.0
Gas pipe	Yes	7.7	25.6	10.5	0.0	2.4	0.0
	No	92.3	74.4	89.5	100.0	97.6	100.0
Centralized heating	Yes	5.8	25.1	0.5	0.0	1.9	1.4
	No	94.2	74.9	99.5	100.0	98.1	98.6

Modified from survey data of the research team

ignored. Those cities which were popular for mining built many one-story buildings which accommodated the workers. Those houses were centrally built and allocated and were in accordance with the living standard of that period. The plants were controlled by the management and there were hardly any repairs and maintenance in spite of the deficiency of the layout of those buildings and their overcrowding with lack of supporting facilities. There was no drainage, toilets, and tap water while the rooms were not clearly demarcated.

Fuxin, Fushun, and Benxi were all old industrial- and resource-based cities. These mining capitals have made great contributions to the economic growth of China, but because they were abandoned for many years, they shantytowns. Subsequently, the workers, especially the colliers, who made huge contributions to the society and its progress suffered severely living in shantytowns.

Initially during the reformation, the central government handed over the housing, infrastructure, and supporting facilities problems to the market. The anticipation was that the market will respond to the signals from this public and quasi-public service buildup a private economy. However, this did not materialize, and as such there was a complete failure of the market. Consequently, these enterprises became bankrupt and many were shut down. They were transferred to the local government and became an increasing financial burden to the already deficient and underprovided cities in Liaoning Province.

In a market economy, enterprises and consumers are regarded as rational economic men, who aim to maximize their profits and utilities and therefore make their economic decisions in accordance with the market. Price is the personal marginal cost or revenue that both the enterprises and the consumers base their economic decisions on, and would not voluntarily base it on the social marginal cost or revenue. The gap between the personal marginal cost and social marginal cost is what leads to negative externality.[1]

Shantytowns which are described as slums in the literature are worldwide realities and not peculiar to China. The inhabitants of the shantytowns in Liaoning Province were about a million and most of them are from the low-income groups and some were even beggars. The common practice, in the construction of infrastructure and building is that there should be a close relationship between the former and the latter. Good urban planning should have the construction of the infrastructure in place before the buildings start. Due to a constraint on financial resources, the upgrading of the shantytowns that began from 1987 only focused on good locations with high investment value, and this constituted the old city mainly. Many parts of the remote shantytowns were barely renovated and the speed in renovating other areas was slow due to financial factors. Furthermore, the central and local governments pushed the burden of the housing problem and its relevant infrastructure to the market. The fact

[1] Externality is a public economic definition that refers to a cost or benefit that is not transmitted through prices, but is incurred by a party who did not agree to the action causing the cost or benefit. It affects the optimal resource allocation and is also called transaction spillover. The cost of an externality is a negative externality, or external cost, which cannot compensated for. The non-exclusiveness and the non-competitiveness make it subject to externality.

is that under the guidance of "wealth first partly," most of the former colliers would not get rich. They were wage earners and poorly paid and could not afford to change their living condition through the market. Most of them could only live in those shantytowns built during the Japanese Puppet Regime and after the foundation of PRA. Most of the locations lack investment value and especially after the policy on land bidding in 2004, shantytowns were doomed because many did not have any business value which discouraged further government investments there. For example, based on market management, from 1978 to 2004, the total completed area of reconstruction in Fushun was merely 740 thousand square km. If this speed was maintained, it would take at least 70 years to complete the transformation in Fushun alone. From the market point of view, lack of profitability did not encourage reconstruction of the low-income housing. However, China witnessed a rapid growth in economic strength and national income, especially after the housing renovations. By now, many of the households had an improved living environment. The average annual investment from 2005 to 2011 was 1,059.8 billion Yuan, which is 5.2 times of that from 2001 to 2004.

However, in the Liaoning Province, the average investment from the central was 143.3 billion Yuan from 2005 to 2011, which was 3.2 times of that from 2001 to 2004. Due to the wide expanse of this province, the aid mechanism from the central government to the resource exhausted cities was not enough and this made it hard for the local government to restore the housing and infrastructure. Fuxin, Fushun, and Benxi were among the highest coal production areas nationwide during the economic planning period and the coal was transported throughout China under the supervision of the central government that carried out the allocation. However, these former mining enterprises were shut down after the rundown and collapse of these industries. Again, the enlargement of city size, and the policy of providing welfare to unemployed colliers by the local government tightened the local finance and led to deficiency in infrastructure input. For this reason, the local government was incapable of renovating those shantytowns that were without basic water, electricity, and transportation facilities.

As the years went by, shantytowns came to symbolize degradation: dilapidated buildings and places where the poor congregate, and a picture of makeshift houses that had never been restored. Clearly, market-oriented mechanism could not effectively solve the housing problem let alone provide public services. The local government needed to lead in improving the urban environment; it must also raise capital from different channels to ensure the coordination between infrastructure and housing renovation and urban environment transformation.

8.4 The Major Practices of Environment Renovation in Upgrading Shantytowns

The externality problem of shantytowns can be solved through internalization, namely, adjusting the personal marginal cost to the social marginal cost and adjusting the personal marginal revenue to the social marginal revenue. In the reform of Liaoning Province, the local government employed an administrative means to set policies and rules, which ensured the optimal allocation of resources

and optimal output combination that internalized externality. The existence of externality restricts the optimal allocation of resources through market mechanism and the intervention of government from reconstruction planning, land allocation management, to the construction of new communities which corrects those malfunctions.

Moreover, from the perspective of habitat environmental science,[2] the reconstruction of shantytowns is one practice of improving habitat environment and its final goal is to achieve a harmonized society through this improvement. It maintains a central position of improving habitat environment which is the toughest problem; also it manifests the essence of a people-oriented city.

Through the upgrading of shantytowns, the province government evolved a comprehensive reconstruction and supporting packages—for the co-development of urban and community environment. The local governments in the province uphold the scientific development guideline and coordinate with planning; land and construction departments set out integrated plans for the upgrading of the shantytowns which include infrastructure and public service which made these transformations compatible with the environmental improvement. Thus, the upgrading of the shantytowns has been in accordance with the progression of urban and community infrastructure, and urban environment, whose capacity has been dramatically increased.

The upgrading of shantytowns in the province follows a standard that is not inferior to the commercial buildings during its construction of infrastructure and habitat environment. The high-standard of planning, designing, and construction accelerated the construction of urban infrastructure and the supporting services which generated active externality and increased the welfare of the inhabitants. It is an effective policy both theoretically and practically.

In Fuxin, the upgrading of the shantytowns and the construction of a comparative supporting service project helped to improve the urban infrastructure and enlarged public service areas and its development spaces. The environment and urban infrastructure have been hugely improved as well as the welfare of the people. Fuxin has completed the renovation of more than 100 streets such as Mining City Road and Zhonghua Road; the city pipe network covered a large section of the region with the central heating rate. The accessible water taps and gas rates have been changed from 66.0, 94.0, 39.8 % in 2004 to 95.0, 97.0, 64.0 % in 2011, respectively, which enhances the urban public service capacity. Fushun government has rebuilt and enlarged 58 stations including water works, substations, heating sources, gas transfer pumping stations, water and sewage pumping stations, and gas pressure regulating stations; and has piped water, drainage, heating, gas, and power network accounting for 589 km ending a historic period of transferring water and power. Benxi government has paved 1,260 thousand square km roads

[2] Habitat environment can be divided into two types, hard environment and soft environment. Hard environment includes living condition, ecological quality, infrastructure and public service level (it is the center of discussion in this article); while soft environment refers to habitat social environment, which is an unconscious environment.

including Binhe North Road, Zhongxing Road, Xihu Road, Zhengjia Road in the shantytowns.

The upgrading of shantytowns involved systematic construction of the urban infrastructure such as road, water supply, power, gas, and heating system. This dramatically improved the welfare of the people relating to the difficult accessibility to transportation, water, power, and gas.

Solid waste and sewage disposal have been two crucial problems in renovating the shantytowns, and these are two necessary supporting facilities that accompany the building of a new house. They were the main factors that affected the urban and community environment, especially sewage disposal. From 2008, the province government invested 10 billion[3] Yuan in constructing 99 sewage disposal projects, of which 95 were completely new. It both enhanced the city infrastructure and enlarged its capacity of dealing with sewage.

From the theoretical perspective, this undertaking brings positive externality. Though a new sewage plant may add some negative externality, but overall, that policy created positive externality and has added the whole economic utility for the local residents and helped to improve the environment and the effectiveness of other relevant policies. In Fuxin for example, the government has spent over 100 million Yuan to renovate the shanty town,[4] including the comprehensive treatment of the Xihe region along the urban center, which has dramatically improved the environment. The construction of a waste disposal plant with a capacity of 1,500 tons daily and a sewage disposal plant with a daily capacity of 100 thousand tons, and the building of supporting facilities such as waste transferring stations, sewage pumping stations, and drainage pipe network, have totally enhanced the urban waste and sewage disposal capacity.

In Tieling, the former dilapidated and stinking shantytowns have been substituted by rows of modern buildings. The greening and landscape gardening have formed a beautiful urban landscape for these communities. The huge transformation from the shantytowns is a result of reconstruction and planning, which has made the greening area achieve 9.8 km per capita instead of the former 5.4 km, giving an increase of 81 %. Benxi government has added 790 thousand square km greening areas and built 18 waste transferring stations, and set waste collection spots according to service radius under the charge of each community.

The upgrading of the shantytowns has dramatically solved the difficulty of sewage and waste disposal and the greening landscapes improve the community environment as well as the urban environment.

Theoretically and practically the construction of urban infrastructure has been a positive and effective public policy. The upgrading of the shantytowns has highlighted the construction of urban infrastructure, and in each community, more than 400 km^2 have been set aside for community utility. The fact that a comfortable

[3] Twofold to the total investment in the past 12 years.

[4] The comprehensive renovation of Xihe region along the urban center is under the support of the central government and Liaoning province.

environment could bring positive externality to its residents increases economic productivity and the overall social welfare. To ensure the management of the renovation and rights of the former residents' to live in the new communities and their well-being, the Fuxin government has planned to build "fully equipped, well-serviced, beautifully laid out, orderly managed and civilized" new communities. Its invention, a "10 min service circle,"[5] has put people into the center of consideration and facilitated their lives, hygiene, cultural and physical activities, and safety of services. In every new community, the government set a model of "one center and four houses," namely, one service center, one office, one game house, one police house, and one medical house, to provide the services such as housekeeping, dining, medical treatment, physical activities, safety and civil affairs and to ensure a convenient, relaxed and comfortable environment.

Through improving the public support facilities, the community service function has been enhanced in Fushun. It is in accordance with the positive externality of public service since this would greatly enhance the economic utility of local residents and further prove a positive circular influence to the environment. The building of hospitals, primary, and middle schools enhance the surrounding living conditions. In the renovated areas, the government has built 19 large-sized medical institutes and 14 small-sized medical institutes to ensure the accessibility of medical service for nearby residents. Besides, it has also built two primary and secondary schools, respectively, and renovated 28 old schools to raise them to the national standard, and effectively allotted the educational resources to solve the education problems of 6,163 children. Up to 2010, Fuxin has built 23 leisure squares and 11 basketball courts with 96 sets of fitness equipment. Benxi government has used the plummeting area of 20 thousand square km to build leisure activities for the residents.

To sum up, the combination of the four points above brings huge and obvious effects since each adds a positive externality. Given the other factors, the overall economic utility of the residents is increased and the urban environment is hugely improved.

8.5 The Influence on the Environment After the Shantytown Reconstruction

Hu's report at the 17th party congress proposed that "more importance must be attached to social development on the basis of economic growth to ensure and improve people's livelihood, carry out social restructuring, expand public services, improve social management, and promote social equity and justice. We must do

[5] Fuxin's invention of "10 min service circle" aims to build a people oriented and harmonized society. To facilitate their life, it put community into the center of a circle and every basic need can be satisfied within 10 min walk radius.

our best to ensure that all our people enjoy their rights to education, employment, medical and old-age care, and housing." From 2005, the government in Liaoning Province renovated 29,100 thousand square km shantytowns and built 44,020 thousand square km new housing, making 706 thousand households (2,110 thousand residents) say good-bye to their century old dilapidated shanty (Wu 2001).

Upgrading shantytowns in the province has led to the improvement of a series of environment measuring indices. The investment in urban infrastructure in 2010 amounted to 67.5 billion Yuan, 3 times more compared to that of 2005. Sewage disposal rate has increased by 20 % and waste safe treatment rate increased by 20.28 %. Through the renovation process, the province has witnessed the transformation of water quality, the increase of greening areas, and the enhancement of air quality. Before 2010, the water quality was worse than Grade V in the six rivers in Liaoning Province, but now its position as Liao River 43 first grade tributary was removed. The average super air quality days in 2010 has increased to 33 days compared to 2005. The greening areas have been enlarged by 6,393 thousand square km, domestic waste disposal amounted to 515 thousand ton, soot emission decreased by 93.4 thousand tons, and direct sewage discharge by 2,840 thousand tons (Table 8.2).

The reconstruction of shantytowns has led to the improvement of urban layout, infrastructure, and the urban environment. The air quality in Tieling has risen to the third place in Liaoning Province from its previous ante penultimate position. Dilapidated shantytowns have been transformed into high rise buildings. Guchengzi community in Dongzhou District and Fushun have completed more

Table 8.2 Liaoning environmental indices between 2005 and 2010

Items	2005	2010
	Liaoning	Liaoning
Urban sewage treatment rate (%)	55.00	75.00
Domestic waste safe treatment rate (%)	50.04	70.88
Tap water covering rate (%)	93.83	97.44
Gas covering rate (%)	88.11	94.19
Urban road areas per capita (%)	7.95	11.19
Urban greening areas per capita (%)	7.49	10.21
Greening rate in renovated places (%)	33.38	36.46
The average urban super air quality days	313 d	346 d
Super air quality days	25 d	72 d
Noise degree reaching standard (urban area) (%)	83.9	85.6
Water quality reaching standard in source region (%)	98.4	99.9
Heating areas	0.48 billion square km	0.75 billion square km
Infrastructure investment	22.1 billion Yen	67.5 billion Yen

Modified from the People's Government of Liaoning Province

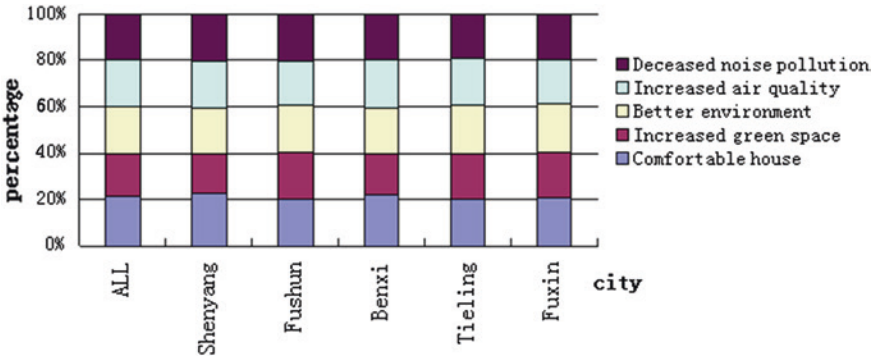

Fig. 8.1 Survey of changing environment of residents in Shenyang and other cities (Modified from survey data of the research team)

than 230 new buildings, while Anshan has completed more than 300 buildings. Cities such as Benxi, Dandong, Jinzhou, and Tieling have coordinated their renovations with the construction of these new communities and the adjustment of urban layout, which has improved the urban function as well as habitat environment and city space.

The increase in greening areas, air quality, and the decrease of waste discharges all contribute to the high support of the resident to renovation. Greening rate in renovation areas has increased from zero to 25 %. Jinzhou has increased the greening areas by 580 thousand square km. The research group surveying five cities including Fushun for example achieved the highest satisfactory rate in greening by 99 % and 17 % higher than average; Fuxin also performs well with 93.8 %.[6] Renovations of the central heating also enable the inhabitants to demolish their small chimneys. The air quality achievement of Grade II has increased to 347 days per year in 2011 compared to 286 days in 2005. SO_2 emission has been reduced by 2,776 tons and soot emission by 5,418 tons per year. Fushun has reduced soot emission by 2,475 tons and SO_2 emission by 1,441 tons. The residents' satisfactory rate to air quality in Fushun and Benxi amounts to 95.2 % and 91.2 %, respectively, 8.8 % and 5.5 % higher than average level (Fig. 8.1). The renovation has greatly enhanced the sewage treatment capacity and has solved the waste disposal problems and enabled timely discharge. Domestic waste is being centralized and piled up for discharge instead of the random throwing, which has improved the hygiene and living quality of their residents and limited waste pollution (Table 8.3).

[6] Research Group conducted a satisfactory rate poll about habitat environment enhancement in Liaoning, Fushun, Benxi, Tieling and Fuxin. It devised seven options, namely, most satisfied, more satisfied, satisfied, average, barely satisfied, unsatisfied, most unsatisfied.

Table 8.3 Survey of environmental Improvement in Liaoning, Fushun, Benxi, Tieling, and Fuxin

Items	Cities					
	Overall (%)	Shenyang (%)	Fushun (%)	Benxi (%)	Tieling (%)	Fuxin (%)
Higher drinking water quality	74.20	57.0	100.0	90.8	79.6	43.8
Better heating equipment	85.50	85.5	80.9	87.9	77.2	96.3
Easier accessibility to gas	78.30	87.4	42.0	99.6	82.1	80.5
Cleaner community	90.20	71.0	99.0	97.6	83.5	100.0
Better drainage	89.60	72.0	97.6	99.5	80.1	99.0
Central collection and disposal for waste	87.70	59.4	99.6	97.1	82.0	100.0
More convenient facilities	86.60	72.1	96.6	80.7	84.0	99.1
Better telecommunications	95.60	88.9	99.6	98.0	91.7	99.5
More convenient public transportation	86.90	83.5	97.1	89.8	82.0	81.9

Modified from survey data of the research team

8.6 Lessons and Implications for Policy

The model and practice of upgrading shantytowns and the slums in Liaoning is a significant urban innovation previously unknown in any part of the world. But the principle can be adopted in similar situations and conditions.

The upgrading of the shantytowns in the province conformed to standard for commercial buildings during its construction of infrastructure and habitat environment. The previous cases had used inferior and low quality products in there construction. The latter risks the danger of falling back into new poor settlements. Also, the high-standard of planning, designing, and construction in upgrading shantytowns in the province have accelerated the construction of urban infrastructure and relative supporting services.

The upgrading of shantytowns in the province adopted a comprehensive planning, layout, and integrated development. It put the construction of sewage treatment plants as a central activity and coordinated it with the urban infrastructure improvement leading to enhanced urban capacity for dealing with sewage. The

upgraded shantytowns have dramatically solved the difficulty of sewage and waste disposal and the greening landscapes and in time improved both the community and urban environments.

The planning of social service areas, schools, medical institutions, and leisure squares followed the principle of equitable development whereby the residents have easy accessibility to medical service, education, and entertainment. In other words, Shantytowns are not separate entities, but aim to be a part of the whole urban system and able to progress with the city in terms of ecology and urban planning. Thus, completed supporting service facilities have their strategic significance and would probably attract residents from other communities as well as the investment from real estate companies, which would further merge various communities and blend them together.

8.7 Summing Up

In conclusion, upgrading of shantytowns in the province had a positive influence on society and the environment. The successful cases of reconstruction provide significant learning materials for similar contexts. In the perspective of environmental improvement, it has raised the quality of urban facilities as well as matched the gap of living environment and facilitated social stability and comprehensive management.

During the reconstruction process, some problems were identified for further attention. The main problem is the management of new communities; attention must be paid to avoid the change from individual pollution to centralized and regional contamination. It has been found out that in those transformed shantytowns communities, the maintenance fees are barely paid, which may lead to the shortage of funds in infrastructure and facilities maintenance and management. The current government compensation for the losses is not a long-term solution. The solution to this problem may rely on the increase of income of those households, or may be to push the management of communities to the market to compensate for the fund shortage; however, attention must be paid to avoid the emergence of a vicious circle from new communities to deficiency in infrastructure and facilities management because of fund shortage and finally to the emergence of new shantytowns.

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Chapter 9
Conclusions and Policy Recommendations

9.1 Introduction

No developing country has invested more than China and broadly East Asia in advanced knowledge infrastructure for economic development. One of the keys to this rapid and unprecedented pace of investment and development has been in the ways institutions have changed to leverage the combination of public and private sector capital. While the state in China has moved at almost breakneck speed to provide modern infrastructure for industrial expansion, innovation, and entrepreneurship, which in turn have enhanced the economic potential and competitiveness of so many cities in Asia, it realized the neglect of its industrial heartlands and moved to reverse this.

Industrialization and urbanization have proceeded simultaneously in China, a country with a long history of big and important cities. These cities have been the gateways for commerce for many centuries. As China opened up to the West, cities have become the fulcrum for economic development. But even as China was developing its manufacturing export base using many of its cities as the locus of production, it became clear that growing urbanization should be attended by close planning. In an effort to understand their own context, Chinese policymakers looked closely at the record of chaotic city development in the United States and elsewhere. The Chinese saw the evident need to urbanize but also the need to avoid the American Syndrome of industrial city decay. Learning from the American experiences combined with the failures of rapid but chaotic urbanization in neighbors like India and other Southeast Asian nations along with the shantytowns of Latin America, Chinese policymakers decided to grow and revamp cities to foster orderly urbanization. An important motivation is that China has too little land and too many people to embark on haphazard approaches. As this book shows, China combined the successful measures in the United States and Europe and is applying them in the industrialization/urbanization path early in the process of development.

P. Ni et al., *Urban Innovation and Upgrading in China Shanty Towns*,
DOI 10.1007/978-3-662-43905-0_9

The cases of Liaoning cities provide instructive lessons for other developing nations. The cities have not only been renovated to meet up with the rest of China's successful cities, but also the transformation projects have emphasized growth with equity.

This is in tandem with the findings from other Asian and developing nations' cities that are rapidly shifting away from labor-intensive to high-technology industries and to the service-oriented sector. For instance, Cebu City in the Philippines is prospering on the back of business process outsourcing, where the number of jobs soared from 40,000 to 70,000 from 2009 to 2010. In India, Bangalore, the capital of Karnataka State, is behind 32 % of the country's software exports and provides 25 % of jobs in the national information technology sector.

In Liaoning, there is preponderance evidence that infrastructure development focused equally on improved productivity (and quality of life); in other words, economic growth and urbanization have taken place concurrently over the last three decades. The Asian region contributed a significant 30 % of the world's economic output in 2008, while its cities accounted for 80 % of Asia's gross domestic product, while only hosting slightly over 40 % of the total population of the continent. Per capita growth (as measured in constant year 2000 US dollars) has been spectacular in East Asia and the Pacific, with a 120 % surge between the years 2000 and 2010. By comparison, over that same period, GDP per capita in Europe grew 56 % (same in Central Asia), and only 22 % in Latin America and the Caribbean. The lessons from Liaoning show clearly at the micro- and mesolevels the sources of the growth and the basis on which development rules are being redefined.

9.2 ShantyTown Reconstruction: Development with Equity

The shantytown reconstruction was aimed not just at physical changes, but primarily at promoting human development in ways that ensured that everyone shared the fruits of development. Additionally, in adherence to the principle of equitable development, the process coordinated all aspects of the evidently complicated matters of urbanization. In particular, these were the relationships between different sectors, regions, and different industries, and as well, the relations between economic development and people are living improvement, the links between the immediate and long-term interests, and that of shantytown reconstruction and urban construction. The process had to deal with the connections between government "guidance" and market operation. Only by this means did the reconstruction achieve the comprehensive goals of social, economic, resource, environmental, cultural, and political benefits.

As for strategy and planning, the reconstruction process adhered to the principle of "Overall integration and balanced coordination" and effectively combined physical development with the city's economic and social development.

The reconstruction was not just to solve the housing problems for shantytown residents, but a major project involving reform, development, and stability,

as well as ensuring social equity. Thus, during the process, the government gave full consideration to the relationship between shantytown reconstruction and the city's economic and social development, established a broad planning programme, and adopted measures to achieve its development goals. As a long-term and systematic livelihood project, the shantytown reconstruction considered the functional layout of the environment and its harmony with growth. These include leisure, greening, and public facilities, taking into account the subsequent development of the communities with a long-term perspective; in effect, it utilized the reconstruction process as a strategy to improve to build infrastructure, strengthen public service system, and enhance the cultural, education, health, and social security of the communities. In addition, the reconstruction had been people oriented, fully considering the relationship of the plan with overall urban planning and industrialization to improve government's functions of serving and administrating the society. The government conducted scientific survey to ensure that location reconstruction projects were complementary, a process that made every reformed shantytown a model of development. The projects expanded the urban development space, improved the urban landscape and living environment, and laid a solid foundation for sound and rapid economic development. Finally, it achieved a positive interactive cycle of shantytown reconstruction and social–economic development.

Again the implementation and the relative success of the shantytown reconstruction is closely connected with the government's principles of equity and growth, as well as the determination, and courage to push through a very complex process. Housing development and construction cannot be separated from the market either, but the market is not capable of solving all the problems. Government involvement ensured the overall success of the financial and institutional arrangements.

Through changes in institutions and policies, the government initiated comprehensive measures to promote improvements to ensure the shantytown residents can "move in easily, live in comfort, and provide in stability."

9.3 Government Financing Support as a Critical Factor for a Sustainable Financing System

In the process of reconstruction, specific instruments employed by the government to guide and to leverage market and societal funds include guarantees, interest subsidies, and insurance, among others. These instruments actually establish a credit enhancement support platform and effectively prevent and control the risk associated with market and social capital so that these capitals have powerful incentives to provide sustainable credit support for low-income people. Therefore, establishing an effective government funds support (or policy-oriented financing) platform is critical in effectively raising the funds for the survival and development of low-income people.

What this reconstruction combined with economic and social development programs show is that a broad development agenda will not just indirectly improve the living conditions of the poor, it could open new pathways to solving the negative aspects of urbanization. This is evident in the ways the Liaoning shantytowns effectively transformed in a short space of time and how the area advanced in terms of rise in fixed asset investment, real estate investment, GDP, fiscal revenue, and growth in the residents' income. Concomitantly, large-scale debts by provincial governments were paid off due to enhanced taxation. Clearly, when policy decisions are made based on principles of equitable growth, it exacts the desired impact on the economic and social development of the people.

9.4 Land and Property Rights as Factors of Development

In the governance of poor settlements, land as a factor of development is undoubtedly very important. In the case in question here, land property rights and the mechanism for raising the income of the poor are the keys to the success achieved in upgrading shantytowns. Liaoning's success in upgrading shantytowns provides an instructive case for land operation in the governance of poor residential areas. The successful experiences in upgrading shantytowns show that the mechanism evolved by the government in effecting land and income distribution was one of the pillars of successful reconstruction. In other words, within the given socioeconomic parameters of China, state leadership combined with the market mechanism led to rise in basic living standards when property rights in shantytowns were respected. To this end, success in the Liaoning's shantytowns provides a useful operational model for governing poor residential areas.

Evidently, in the reconstruction of shantytowns, land operation still needs some continuous improvement, for example, the building of settlements on the allocated construction land. According to Article 39 of China's real estate administration provisions, the assignee can only secure complete property right after payment of transfer fee in land allocation by housing transfer; this poses great challenges to the poor. While the speed and process for the relocation residents of Liaoning and attendant secured property rights is a major development breakthrough, relevant laws to sustain this approach should be further improved.

9.5 Social Dimension of ShantyTown Reconstruction

In order to guarantee the quality and efficiency of the housing construction, Liaoning Province adopted a series of policies, which included the following: first, unified bidding management. The scale of shantytown reconstruction is large, and large quantities of resources are involved, so the unified bidding was organized by the related departments to make sure that the construction enterprises compete

fairly, to eliminate the intermediary steps to a great extent and to lower the cost. Second, in order to make the living conditions of residents in shantytowns significantly better, the planning and construction design of settlement housings followed the same standard as that of commercial buildings, while the national technical standard was strictly obeyed to guarantee the quality of projects. Third, in order to strengthen quality management, apart from the professional quality supervision offices, residents' representatives were also employed as quality supervisors. This was done to ensure buy-in on the quality of projects.

The income of most residents in shantytowns is low, so discounts were offered in order to make housing affordable. The process of acquisition in Liaoning Province was as follows: first, residents could change the old house for the new one and the new house with the size of that of the original one free of charge, while the extra size will be charged at or below production cost; besides, the property rights belong to residents themselves. Second, those residents who have difficulties with purchasing the settlement buildings could rent the house first and the real estate certificate would be issued after the completion of payment. In this way, the residents can move to the settlement buildings quicker. Third, the houses will be allocated in an open manner publicly and settlement will be conducted in a transparent manner based in order of residents' movement and payment.

The self-service management by community residents means that the community residents' committee coordinates with relevant departments to recruit people in the area of public welfare and employ the laid-off workers in the community to provide services in security, sanitation, and maintenance. This kind of self-service management has a lot of advantages: First, it effectively lowered property management expenditure and eased the financial burden of the residents, as apart from the 0.1 Yuan per m^2 per month, and there are no other fees; second, it has made the scaled management of the community possible and is helpful to lower management cost; third, the self-service management has created some job opportunities which have helped the residents increase their income.

9.6 Sustainability of Housing Development of ShantyTowns

There have been significant changes in living conditions, as residents used to burn coal for heating and cooking in shantytowns before this transformation, but subsequently, they changed to the use of gas or central heating system which of course cost a lot more money. According to the statistics of the Liaoning Provincial Civil Affairs Department, for residents who moved into the new buildings, due to the cost of gas, water, electricity, heating, and property management, the monthly fees increased by about 170 ¥. A long-term mechanism needs to be set up in order to solve the problem of additional living costs for residents, particularly in raising the income of residents through better paying jobs.

9.7 Economic Dimension of Reconstruction

In comparative perspective with developments and practices of urban slum governance in different countries, this book distills out some of the drivers of success in the methods and policies adopted by Liaoning Province. The reconstruction effort was conceived to both change the physical and social livelihood of society but also to promote economic development. Clearly, the initiatives meant intensive investment, through that involved both a supportive private sector and state-owned enterprises. It has developed the local community profoundly as well as the local economy, encouraged employment, and associated ventures that are the key elements for sustainable progress of the new communities. The fact that the province attached great importance to combining shantytown reconstruction with economic growth and transition both of which mutually reinforce each other has important implications for other cities aiming to conduct a shantytown reconstruction program.

First, efforts should be focused on economic development to enhance the ability of public housing supply and private housing demand.

Second, appropriate measures should be taken to give full play to the role of investment and private enterprises, which will increase public revenue and promote the employment of residents in shantytowns.

Third, great attention should be put on the development of community/local economy and microeconomic units to promote employment and venture, which will increase the income of the residents in shantytowns.

Fourth, the active role of shantytown reconstruction should be fully combined with economic development so as to ensure a virtuous cycle of shantytown reconstruction.

Fifth, the reconstruction was an important turning point, in the life of the communities, with the building of effective local groups, and establishing a complete set of social services that evolved completely new social institutions for life and society. While Liaoning government was promoting reconstruction, the province already started to reestablish new community organizations. At the early stage of reconstruction, the reestablishment of community organization had the party committee at its core and as such did not have the character of an organic or spontaneous organization. In other words, the people were explicitly organized, and the government entered the community through the administrative system. The administration of the community will continue to be strongly supported and overseen by the government for quite some time, with secondary support coming from the society. While this type of community organization may seem far behind that of most cities in China where organization is mainly overseen by the residents, it represents a start for the present situation in the reconstructed areas. The current government-directed administration is functional in that it allows direct communication between the people and the government and helps those that were economically and socially weak to have a voice and participate in public life, enjoy public services, and establish a new life. The experience of reconstruction in Liaoning

has emphatically proved that, under particular government policies, residents can rise in social and economic position, reentering mainstream urban life.

Sixth, the reconstruction has been highly effective in destroying and preventing the recurrence of a culture of poverty by helping residents to reform their communities. Using mixed-income residences, the new communities pushed forward the creation of a socially mixed community to break the culture of poverty and prevent its rebirth. This goal is being achieved through utilizing the presence of middle-class residents to pull up the low-income residents. The residential community has developed educational and cultural activities, and disseminated legal knowledge, all of which has led to a rise in residents' ethics. The UN research report from the Human Settlements Program believes that in improving zones of poverty, reform and renovation are far more effective than establishing completely new residential areas. Large-scale demolition and new construction may well not desirable; local transformation should be taken as the fundamental principle in reconstruction.[1] Liaoning's reconstruction of shantytowns followed this path. In order to minimize the wealth gap, Benxi city constructed over 600,000 square meters of housing, and tens of thousands of residents have already moved into the new areas. This has alleviated many of the problems that came from areas having great concentrations of low-income residents. In Chengjia district, the new housing was located near communities of middle- to high-income residents, creating mixed-income communities. This raised the cultural level and educational resources of the former residents. Proximity to commercial residential areas can give former residents numerous employment opportunities, including opening small stores, doing housekeeping and property management, cleaning, security, and more. Increased interaction between the communities will create trust, as well as help circulate news concerning educational and employment opportunities, or lead to direct introduction to employment. This is an undoubtedly great resource for the former shantytown residents.

9.8 The Unfinished Project

There are many challenges still facing the reestablished communities, both systematic and long term. Improvements in residences and environment are only the first step to complete reconstruction.

First, returning to the mainstream urban economic market is much more difficult than returning to mainstream society. As evident through the experience of reform in Liaoning, actualizing an improvement in living conditions and environment is not difficult with thorough planning, and residents can return to contemporary society. In comparison, improving residents' employment situation is much more difficult and requires further involvement from the government in the form

[1] UN Human Settlements Report, The Challenge of Slums—Global Report on Human Settlements, 2003, China Construction and Industry Press. 2006, XXVII.

of training courses, creating incentives for starting businesses, training in skills that meet market demands, and creating residents' competitiveness in the market. At the same time, there is a need to create more jobs in the community and assist those with lower marketable skills to find employment. The low levels of education of former residents are also a barrier to their being employed in the university-oriented job market. In the post-reconstruction period, the greatest challenge is increasing opportunities for employment, using every method and means to increase residents' salaries and thus helping them reestablish a solid base for life and ensure continuation of positive community development.

Secondly, after residents are able to establish an economic base, the next steps in this ongoing plan will be to rebuild the people's character and lead them into modernization. When relocating from shanty rooms to new apartments, some old residents brought with them unhealthy and entrenched negative habits. To counter this, the residential communities have developed many different types of educational activities to spread the knowledge of rights and wrongs and good and bad habits that are expected of the residents. The community volunteer corps have set up community cleanup and community environmental activities, helping residents to cast off bad habits and improve social skills. Community education is an important part of the community work; most communities have established urban schools, inviting professional teachers and lawyers to educate residents about topics pertinent to their lives, such as marriage laws, labor laws, and inheritance laws.

Thirdly, the relation curve of family income and well-being index which exhibits the shape of "upside-down U" before and after reconstruction shows that policymaking should pay more attention to the well-being of the other two groups at the extremes of the curve. The experience of reconstruction of Liaoning's shantytowns not only provides new materials for research, it also carries great implications for the reconstruction of slums all over the world. As the different chapters show, the transformation has several dimensions of social, economic, and cultural dimensions which will require studies for greater understanding in the years to come.

For instance, how in specific terms has the upgrading of shantytowns in the province had a positive influence on society and the environment in the long term? Evidently, it has accelerated the process of social development and the restructuring of life and space. The successful cases of reconstruction will be worth studying in the perspective of environmental improvement, the provision of urban facilities, as well as how the process has facilitated social stability and upward mobility.