# From Urban Sprawl to Land Consolidation in the Suburban Shanghai: A Perspective of Property Rights Reconfiguration

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*Since the 1980s, China has witnessed significant city growth, and the Chinese version of urban sprawl emerged all over the country. Within the last more than two decades, the non-agricultural land of Shanghai expanded quickly, more than doubled. Under the strict land quota system, Shanghai municipal government has to transform Greenfield development approach to land consolidation strategy. Under the policy of "Increase and Decrease Balance" land use policy, Shanghai government started to consolidate the rural construction land to acquire extra quota for the state land through transferring development rights from the collective land to state land, and established a three-level land consolidation planning system. This paper firstly examines the expansion of non-agricultural land in Shanghai since 1990, and explains the policy arrangements of land consolidation from the perspective of property rights configuration of state land and collective land. Taking Xinbang Township as an example, this paper examines the roles of various stakeholders, the municipal, district and township government, local villagers and entrepreneurs in the land consolidation and the impacts of land consolidation on them. It concludes with discussion and policy implications in the future land consolidation.*

Key words: Land consolidation; urban sprawl; property rights reconfiguration

## 1. Introduction

China has experienced drastic changes in land use since the initiation of economic reforms in 1978, and the loss of farmland has been primarily driven by urbanization and industrialization (Lin and Ho, 2003; Liu *et al.*, 2008; Long *et al.*, 2007; Long *et al.*, 2012). As the trends of urbanization and industrialization show no signs of abating, the pressure on farmland coming from both urban sprawl and uncontrolled expansion of rural constructive land has raised great concerns on food security (Huang *et al.*, 2011). In order to curb the sprawl of non-agricultural land, the Chinese Central Government has introduced the strict farmland protection policy through the land quota system, meanwhile, in order to alleviate the pressure of substantial demand for city growth, it adopted the "increasing vs. decreasing balance" (IDB) land use policy to transfer the development rights from collective land to urban state land. In 2014, the Ministry of Land Resources of China further claimed that "…cities with more than 5 million will not be allocated land quota except residential and infrastructure land"[1]. Under the more and more stringent land control policy, many cities, particularly the large cities, have to transfer the strategy of

[1] http://news.xinhuanet.com/house/sh/2014-02-20/c_119417080.htm, accessed on 02/03/2014.

Greenfield development to land consolidation in order to acquire the new space for growth.

Traditionally, land consolidation has been a favorable device for solving land fragmentation and has been applied in many countries around the world. As strategy of managing land use, land consolidation has been extensively discussed in the existing literature (Miranda *et al*, 2006; Sklenicka, 2006; Tang *et al*, 2012; Dijk, 2007; Demetriou *et al*, 2012; Wang *et al*, 2012). Recently, there has been some research on local land consolidation practice of China fuelled by the IDB policy (Long *et al*, 2011; Long *et al*, 2012; Wang *et al*, 2014). Nevertheless, little research has been conducted from the perspective of land property rights re-configuration, which plays a critical role in facilitating land consolidation and reshaping spatial structure. This research is thus an attempt to fill this gap by taking the land consolidation in the suburban Shanghai as a case and focuses on the following issues: (1) how has the land consolidation re-configured the land property rights of collective land and state land? (2) What are the costs and benefits of various stakeholders in the land consolidation process in the suburban Shanghai?

Using a case study approach, this paper is organized as follows: the next section examines the role of property rights in land consolidation, and the introduction of IDB land use policy and land consolidation practices in China. The third section introduces the background, the planning and policy framework of land consolidation in the suburban Shanghai. Then, the case of Xinbang township is analyzed to explore the costs and benefits of various stakeholders with the reconfiguration of land property rights. The last section concludes with future policy implications, involving consideration on flexibility of policy-design and social equity issue in the land consolidation.

## 2. Dual land ownership and land consolidation in China

### *2.1 Institutional arrangements behind the land consolidation in China*

Two types of land ownership coexist in the current land administration system of China, namely, state-owned land in the urban area and collective-owned land in the rural area. While the establishment of the Land Use Rights System in 1988 has allowed the lease, transfer and sale of urban land at different time limits, in rural areas collective ownership has allocated farmers plots of land that they can use for cultivation and for building their own houses, which has been called *Zhaijidi* in China. Collective land can be inherited, but it cannot be converted to urban use without going through state requisition. Through strictly drawing a line between urban land and collective land, the Chinese government has created a dual land management system (Tian, 2008).

The role of property rights in land development is a central issue in land consolidation. The reconfiguration of land property rights affects land development and economic performance (Besley, 1995; Field, 2005; Galiani, 2010; Goldstein & Udry, 2008). A property right is the exclusive authority to determine how a resource is used, whether that resource is owned by the government, by collective bodies, or by individuals (Alchian, 2008). Bromely (1991) further indicates that property is not an empirical possession but rather is a social relation that defines the property holder with respect to something of value against all others. Therefore, property rights are also a factor of production. Property rights can be altered among individuals and groups to accomplish certain desired ends.

In the realm of land policy-making, the relationship between the State and the property owner has always been an important and sensitive issue, politically and economically. In most cases, the property rights have been defined by the State through a series of tools such as land laws, land use regulations and land taxation. The state, however, is not free of restraints in defining property rights in land. On the one hand, the state has its own national planning aims and preferences in different development periods. Property rights over land as basic instruments of overall development policy, perform both an indirect, facilitating role and a direct and active one, and therefore exert a great impact on urban development, in terms of both efficiency and equity (Doebele, 1988; Payne, 2001); on the other hand, the state cannot go too far for its own interests or impede the security of tenure, for the security is essential to stimulate the individual initiative necessary for economic development. The state therefore has to strike a balance between efficiency and equity (Tian, 2014).

*2.2 Increasing vs. decreasing balance land-use policy under the land quota system and development rights transfer from collective land to state land*

In 2003, with the tightening national land policy, the central government of China strictly enforced a land quota system that restricts the maximum amount of newly added land used at the subnational level, but gives local governments enough autonomy to determine sectorial allocation of land quotas within their jurisdictions (Cai，2011). Meanwhile, the rural-urban migration has led to relative stagnation in China's rural sector, but the expansion of rural construction land has never stopped. While the rural population decreased by 98.6 million within the period of 1996-2007, the area of rural housing land increased by 1180 $km^2$（Qiu *et al*, 2010）. Therefore, the pressure of urban land demand generated by rapid city growth and the inefficient rural land use coexist in China.

Realizing that the consolidation of low-efficiency rural construction land can be a valuable source of farmland reclamation, the central government introduced the "increasing vs. decreasing balance" (IDB) land use policy in 2005, which seeks to balance increases in urban construction land with a reduction in rural construction land (Long *et al.*,2011). The key objective of the IDB policy is to achieve equilibrium in the supply of land in China by balancing increases in urban construction land (driven by urbanization) with decreases in rural construction land (facilitated by out-migration). Former rural construction land could consequently be reclaimed as agricultural land, thus supporting food security goals and broader socio-economic development in rural areas. The program is to be implemented at a county level, and the local government needs to bear all cost to acquire the land quota. In nature the IDB is top-down, focusing on spatial-territorial reorganization, administrative reorganization, and industrial reorganization (Liu *et al.*, 2009; Long *et al.*, 2012; Wang *et al.*, 2014).

The mechanism of IDB is similar to that of the Transferable Development Rights (TDRs) widely applied in the United States. TDRs have emerged based on the underlying principle that the development potential of privately held land is in part a community asset that government may allocate to enhance the general welfare. In concept, TDR serves the development potential from the land and treats it as a separately marketable item. It is viewed as a means of providing an equitable return on land investment to property owners whose returns otherwise would be lessened by regulatory activity (Tian, 2014). In the framework of

IDB, the development rights of rural construction land are transferred to other designated area where the same amount of land quota can be granted, and the original land owners can receive compensation in kind. The difference from TDRs is that the transferred development rights can only be sold to the government, and thus local government can capture the differential rent between the rural construction land and urban construction land.

### *2.3 Land consolidation under the IDB policy in China*

Land consolidation is a technique for carrying out the unified servicing and subdivision of separate landholdings for planned urban development (Farvacque and McAuslan, 1992). It is designed as a vehicle to be applicable in countries with rapid growth, rapid increasing land value, and insufficient funds to provide urban services. Unlike outright purchase, land consolidation returns to each owner a substantial portion of the land originally owned in a location as close as possible to the original site. Therefore it is more politically acceptable than outright purchase or expropriation, which requires reducing all land values to specific cash sums (Tian, 2014).

Since the promulgation of IDB land use policy, the land consolidation has been widely implemented in China. From 2005 to 2010, the land consolidation was carried out in 27 provinces (including municipalities directly under the central government), and the transferred land quota reached 450,000 mu (Wang *et al.*, 2012). With the application of IDB land-use policy, a number of successes, such as improvements to rural infrastructure and releasing the potential of rural land resources, have been achieved. However, the top-down nature of the programme has proved controversial, and generated conflicts and compromises to the scheme when local actors have refused to comply in the way anticipated (Long *et al*, 2012). Wang *et al.* (2012) argue that the local government has taken the advantage of the IDB to capture the land rent of collective land, and farmers have not been adequately compensated. Tu (2010) criticizes that the IDB policy was misinterpreted, and local governments withdrew villages to get in return the construction land quota. As a consequence, many farmers who lost their housing land were forced to live in high-rise building.

## 3. Land consolidation in the Suburban Shanghai: Rationale, objective and policy arrangements

### *3.1 Urban sprawl and its consequence in Shanghai*

Since the middle 1990s, Shanghai has been expanding at the fastest speed ever. From 1946 1996, the construction land of Shanghai grew by 1,228 $km^2$ within five decades, however, the construction land had rapidly expanded from 1,705 $km^2$ in 1996 to 3,073 $km^2$ by then end of 2014 with an increase of 1,368 $km^2$ during less than three decades. From 2000 to 2014, the permanent population in Shanghai increased from 16,096,000 to 24,257,000, up by 51% (Figure 1). During the same period of time, the construction land grew from 1996 $km^2$ to 3,073 $km^2$, by 54%, indicating a higher growth rate than that of the population (source: Shanghai Municipal Planning and Land Resources Bureau).

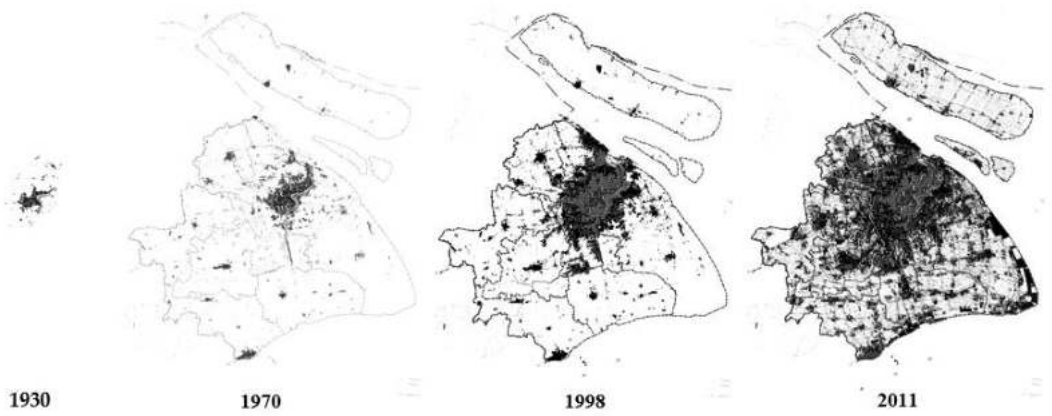


Figure 1 The expansion of non-agricultural land in Shanghai

In order to curb the urban sprawl, Shanghai municipal government designated the boundary of "Concentrated Construction Area (CCA)[2]" and a "Red Line of Eco-security" in 2008. However, there is a large amount of *status quo* construction land outside the CCA and above the eco-security red line, and most of that is industrial land. In 2012, the industrial land outside the CCA amounted to 188 km², accounting for 39% of all construction land outside the CCA and 25% of the total industrial land in Shanghai. Nevertheless, its contribution to Shanghai's total industrial output value was less than 10% in 2012. Generally speaking, this scattered industrial land share the same problems such as low production efficiency, highly energy-consuming, resulting in serious environmental problems.

The uncontrolled sprawl of non-agricultural land has led to many urban problems, such as air pollution and traffic jam. By the end of 2014, the share of construction land reached to 48% of the total land area in Shanghai, and the ecological space has been seriously squeezed. In recent years, environmental problems have been generating more and more adverse effects on people's daily life. For instance, in 2013, the haze days of Shanghai came at 61% (Source: Shang Meteorological Service). In addition, in order to curb the further sprawl of non-agricultural land, in 2011 the central government put a ceiling on the area of non-agricultural land in Shanghai: 3,226 $km^2$, yet this figure reached to 3,073 $km^2$ in 2014 (Source: Shanghai Urban Planning and Land Resources Bureau). In other words, only the land quota of 153 $km^2$ can be reserved for the future growth of Shanghai.

*3.2 Transition of growth strategy under the strict land quota system*

In the face of the urban land shortage, Shanghai municipal government has to reconsider and adjust the previous Greenland development strategy. In 2010, Shanghai government started to make the land consolidation plan outside the CCA. Based on this ambitious plan, 380 $km^2$ of rural construction land outside the CCA will be reclaimed as farmland. Under the IDB policy, the new quota for non-agricultural land can be created, and these quotas can be transferred to the CCA and sold as state-owned land. In other words, while the rural construction land is reclaimed as farmland outside the CCA, the same amount of urban

[2] CCA is similar to the Urban Growth Boundary in the United States, and any newly-added non-agricultural land has to be located within the boundary of CCA.

construction land can be added in the CCA on the grounds that the land use efficiency of rural construction land is fairly low but that of urban construction land is much higher.

### *3.3 Policy and planning framework of land consolidation*

#### 3.3.1 Targets of land consolidation

In the suburban Shanghai, construction land to be consolidated include the scattered, discarded, idle and low effective construction land outside the CCA. To be specific, it covers 5 types of land use: industrial land, *Zhaijidi* land, urban land, land for transportation facilities and water conservancy facilities land, and religious and military land. In view of the objective of environment pollution treatment, consolidation of industrial land outside the CCA has been on the primary agenda of Shanghai municipal government. The consolidation of the *Zhaijidi* land outside the CCA will be based on local situation and willingness of local residents. Since the *Zhaijidi* land is rather scattered, it is financially difficult to provide basic public service and supporting facilities to all rural residents. Promoting the compact *Zhaijidi* land use is also a key part of land consolidation strategy.

#### *3.3.2 Managing mechanism of land consolidation*

In the Shanghai suburban area, the development rights of rural construction land is transferred to other designated area, and the original land owners can receive compensation in kind. The differences from TDRs are as follows: (1) the transferred development rights can only be sold to the government under the IDB; (2) the compensation standard will not be based on the market value of the collective land rights (in theory, the collective land does not have a market value), but based on compensation standard made by the government. Therefore, the land consolidation is top-down by nature, and lacks a bottom-up facilitation procedure.

Realized that the CCA is not flexible enough to accommodate the new space, Shanghai government designates “semi-CCA” outside the CCA as the receiving area of transferred development rights. Semi-CCA has been used as the space for the relocation of *Zhaijidi* land owners and Economic Development Land (EDL) of rural collectives. For the sake of reserving enough space for improving industrial structure, no commodity property development is allowed in the semi CCA. In principle, the area of semi-CCA is 1/3 of the total area of reduced construction land. The other 2/3 land quota will be purchased by the district government at the average price of around RMB one million per mu. Figure 2 shows that the process of land consolidation.

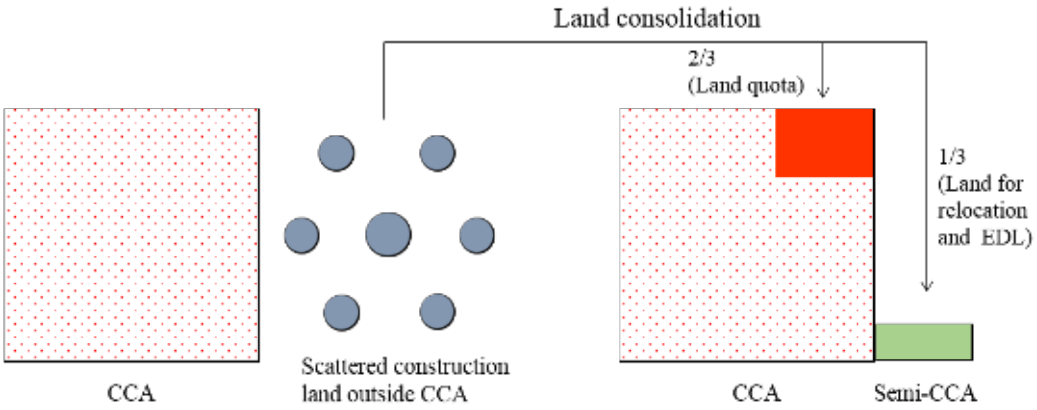


Figure 1 A schematic illustration of land consolidation process in the suburban Shanghai

*3.3.3 Financial support and compensation for the original land users*

Land consolidation involves clearing up existing settlements, reclamation of farmland and new construction in the semi-CCA, and it is rather costly and time-consuming. Taking the land consolidation of Xinbang Township, Songjiang District of Shanghai as an example, the local government estimated that the cost of land consolidation will be RMB 2.4 billion Yuan. If all of the 104 towns outside the CCA start land consolidation, the total cost may exceed RMB 250 billion Yuan. Therefore, Shanghai municipal government and district government have to set up special fund to support land consolidation.

Compensation for the relocated farmers varies from district to district. A typical way is that the *Zhaijidi* land where the villagers originally lived will be replaced by an apartment with equal floor space after the villagers move to semi-CCA from the village. The contracted farmland cultivated by the farmers still belongs to them. However, in reality most farmers of Shanghai are no longer engaged in farming, and they usually transfer the right of management to the cooperatives or professional companies and earn annual rent. Moreover, the collective economic organization can acquire EDL at fair price or free of charge in the semi-CCA, and villagers can obtain annual dividend from the rent of collective property. Cash compensation has been also applied in some areas.

The compensation for the relocated factories owners is based on the land area. There are two kinds of policies of compensation: it is generally RMB 900 Yuan/$m^2$ for the enterprises with legal land property right and lease contract, but only RMB 200 Yuan/$m^2$ for the industrial enterprises without legal property rights. In addition, compensation for the operating loss and relocation cost is also paid based on the assessment of the third party.

*3.3.4 Planning response to land consolidation in Shanghai*

In order to carry forward the progress of land consolidation, Shanghai government constructed a three-level land consolidation planning system comprising "metropolitan land consolidation plan (MLCP) → district and county-based land consolidation plan (DLCP) → township-based land consolidation plan

(TLCP)". While the former two are more strategic, the TLCP is the implementation plan. MLCP defines the task of Shanghai by 2020, quantifies the land area to be consolidated and allocate the task to district and county. Based on the MLCP, DLCP determines the key implementation area, further decomposes the land consolidation task to towns.

TLCP is a comprehensive planning involving land use, spatial layout of various facilities including infrastructure and ecological facilities. Meanwhile, it is a policy-oriented plan: it needs to identify the boundary of reduced land and newly built land, and make the cost analysis. In the suburban Shanghai, there have been 104 townships outside the CCA, and the TLCP of most of them have been made.

## 4. A Case of land consolidation: Xinbang Township

*4.1 Study area and research methods*

Xinbang Township, located in the southwest of Shanghai suburb, is about 60 km away from the downtown and it is affiliated with Songjiang District (Figure 3). It covers the land area of 4474.98ha, and its land use structure has been illustrated in 2010 based on the second national land survey (Table 1). Xinbang Township is situated at the water source protection area of Huangpu River, its expansion, particularly industrial land growth, has been restricted to a great extent.

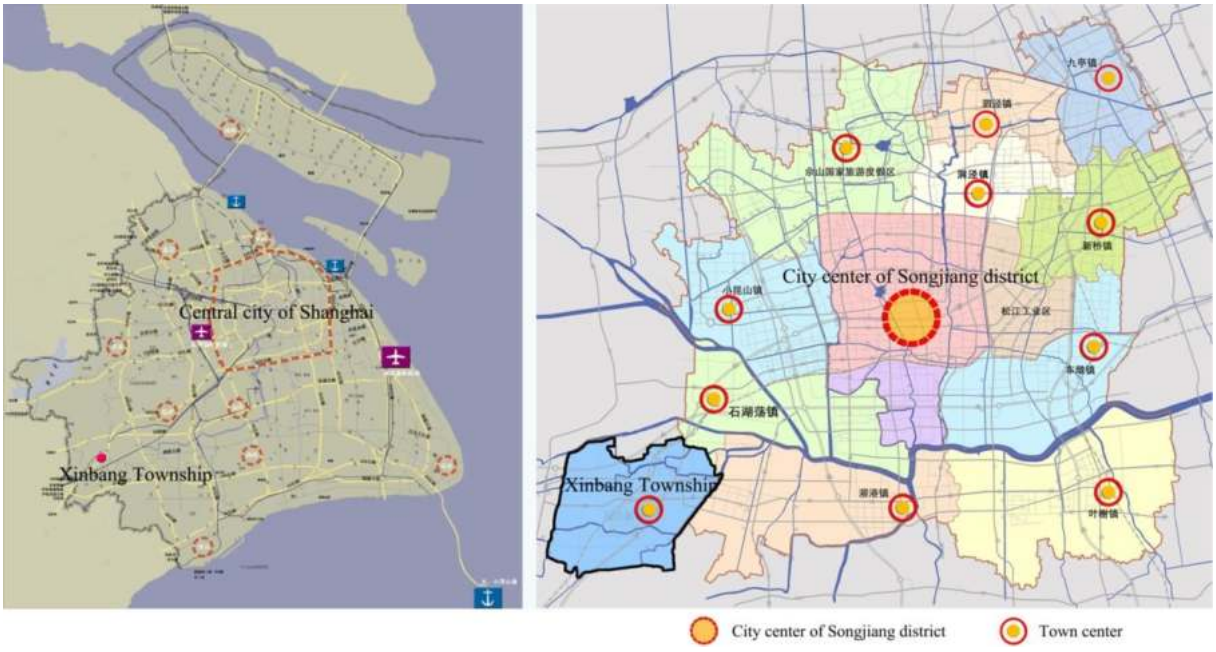


Figure 3 Location of Xinbang township in Shanghai and Songjiang

Table 1 Land use structure of Xinbang Township in 2010

| Land use type | Farmland | Construction land | | | Unutilized land | Total |
|---|---|---|---|---|---|---|
| | | Urban industrial and mining land | *Zhaijidi* land | Rural industrial land and others | | |
| Land area(ha) | 3163.96 | 345.17 | 270.21 | 401 | 294.89 | 4474.98 |
| Percentage in total | 70.70% | 7.71% | 6.04% | 8.96% | 6.59% | 100% |

In 2013, there were 11 administrative villages under Xinbang Township, and the township had the population of 37,527, among which 26,123 are residents with *Hukou*, and 11,405 are migrants, and its urbanization rate was 30%. The GDP of Xinbang Township reached RMB 2.135 billion Yuan, up 1.7% over 2012, and the local fiscal revenue were RMB 130 million Yuan. Table 2 presents the economic development of Xinbang Township and Shanghai municipal area, and we find that compared with that Shanghai municipal area, the economic development index of Xinbang township is much lower. The GDP per capita of Xinbang was 70.5% of that of Shanghai, and the disposable income per capita was only 51.8% of that of Shanghai.

In this research, we combine both qualitative and quantitative research. Firstly, the research team made extensive and intensive interviews on the stakeholders, including Shanghai municipal government, the Songjiang district government, Xinbang township government, village collectives, villagers and relocated factory owners, to understand the mechanism of land consolidation, and analyze the costs and benefits of various stakeholders in the land consolidation process. Moreover, we organized the villagers' meetings under the help of village leaders and heard about their voice. Then we distributed 120 questionnaires among the 3 administrative villages: Xinbang village which is closest to the town center, Linjian and Nanyang village which are several kilometers from the town center, and 106 effective ones were collected. The questionnaire covers the information such as age, income and job, *Zhaijidi* land, the attitude of local residents towards the relocation and expected compensation in the land consolidation. While replying the question on their attitude towards consolidation, more than 90% of villagers in Linjian and Nanyang expressed their support. In the Xinbang village, 81% of villagers said that they agree with the consolation, and the remaining 19% did not clarify their position, partly because that they expect higher compensation standard than that provided by the government. As for the relocated place, the majority of villagers expect to move to the city center and town center to use the public and service facilities. In Linjian and Nanyang village, more than 60% of villagers expect houses with floor space between 150 and 200$m^2$, but 56% of villagers in Xinbang expect higher compensation standard, more than 200$m^2$.

*4.2 Land consolidation planning and implementation in Xinbang Township*

Xinbang Township has been the first pilot town carrying out land consolidation in Shanghai due to the following reasons: (1) Xinbang is located in the outer suburban area of Shanghai and its land price is fairly low. Compared with the villagers of the towns in the inner suburban Shanghai, local villagers' expectation towards compensation is much lower. Under the policy of land consolidation, the land quota will be

purchased at the price of RMB one million Yuan per mu, and this has provided financial motivation for township government and village collectives. Secondly, since the early 2000s, the Shanghai government strictly prohibited the construction of new rural houses. In Xinbang, 86% of the rural houses that were built in the 1970s and 1980s have been aging and the quality is very poor (Xinbang township, 2014). Land consolidation provides a chance to replace the old house with the new apartment near the town center. Therefore, 92% of interviewees expressed their support towards the consolidation. Thirdly, based on the questionnaire survey, 83% of local resident are no longer engaged in farming, but working in factories or service industry. In average, they only charge the rent of 200 Yuan/month/person for the migrant workers. As the semi-CCA is close to the city center and the living environment can be much better, local residents expect the rent would be substantially increased. This is also one of the important reasons that they agree with land consolidation.

The land consolidation planning of Xinbang Township was approved in the late 2013 and the implementation started in 2014. According to the plan, the reduced construction land area shall be no less than 156.72 ha by 2016 and 496.2 ha by 2020, among which the reduced industrial area shall be no less than 61.62 ha by 2016 and 108ha by 2020. Semi-CCA is located near the town center. Targets of land consolidation include two types of land: one is the idle and low-efficiency industrial land outside the CCA, and the other is the *Zhaijidi* land. The reduced industrial land was mainly used for garbage collection, hardwires, and other small-scale manufacturing etc. These small enterprises usually sign rental contracts with the village collectives to lease land at a rent of 20,000-30,000Yuan per mu each year. Meanwhile, they generate heavy metal pollution and water pollution.

Figure 4 shows the *Zhaijidi* land consolidation process. In the first batch of village *Zhaijidi* land, agreement has been signed with all villagers. In the second batch of village *Zhaijidi* land, more than 90% of local residents have signed the relocation assignment with local government in most villages except the Xinbang village which is closest to the town center. Due to the advanced location, local villagers expect higher compensation, and only 60% signed the agreement (Source: Xianbang township, 2014). The new apartments for relocated residents have been completed in the semi-CCA.

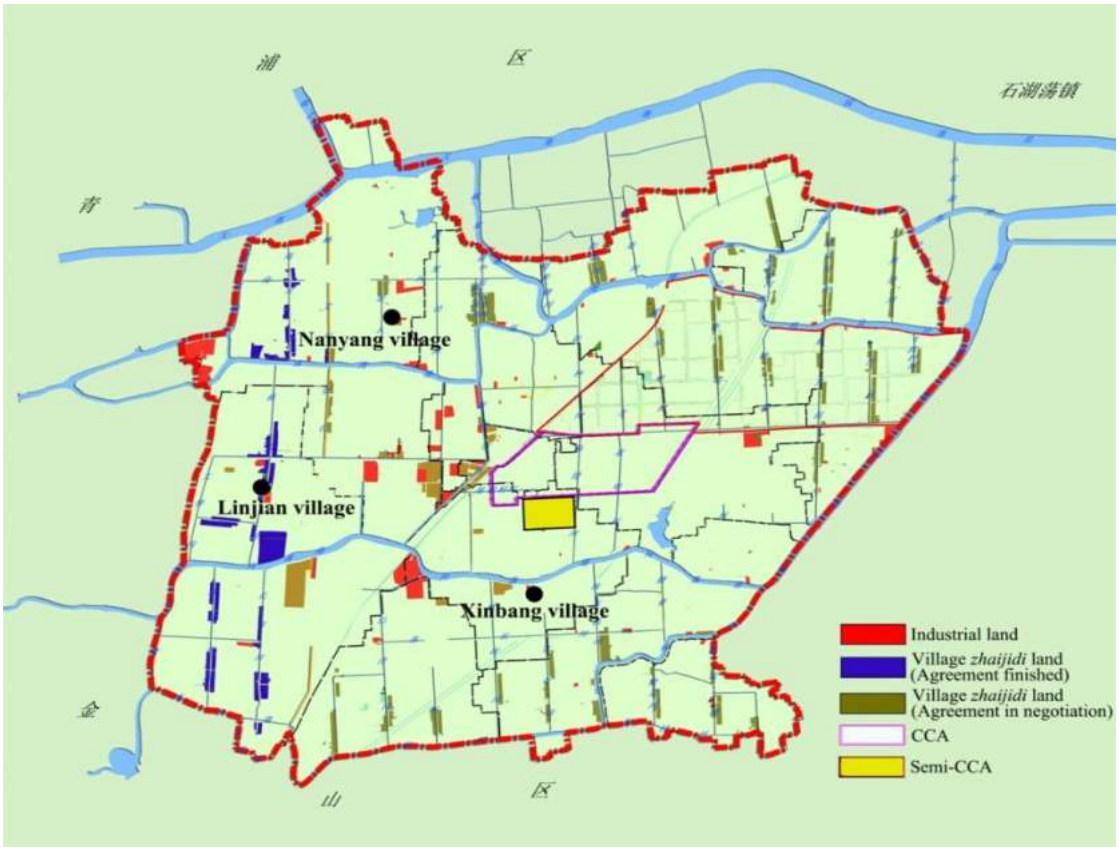


Figure 4 Land consolidation process of Xinbang township
(Source: Shanghai Urban Planning and Research Institute, 2014)

### *4.3 Property right reconfiguration and its impacts on stakeholders in land consolidation*

#### *4.3.1 Municipal and district government*

In the course of land consolidation, the municipal government has been playing the role of policy-making, and it provides local regulations to implement land consolidation. Under the strict land quota system, the municipal government can only make policies within the existent legal and policy framework and it is politically needed to obey with the central government (Zhou, 2004). Motivated by economic growth and demand for non-agricultural land, municipal government has great incentives to explore the new source of urban land. As a result, under the IDB policy, Shanghai municipal government promulgated regulations on land consolidation in the suburban Shanghai in June 2013 and the land consolidation has been officially launched since then.

In the case of Xinbang land consolidation, Shanghai municipal government has invested 788 million Yuan in land reclamation and compensation for the relocation of villagers. For the purpose of encouraging land consolidation, the municipal government will additionally provide a land consolidation award of 200,000 per mu of industrial land to township government, totally 466 million Yuan. Municipal government

needs to invest RMB 1,250 million Yuan in total (Source: Xinbang township land consolidation plans, Shanghai Urban Planning, Design and Research Institute, 2014 ).

Meanwhile, the Shanghai municipal government has achieved its multiple objectives through the land consolidation. Firstly, land consolidation is the optimal choice for Shanghai to deal with the performance evaluation of the central government, and the major source of future new space. Secondly, the low-end industries will be expelled, which creates opportunity for industry upgrading. Last but not least, municipal government can obtain certain amount of LURs transfer fees: 20% of the LURs fees from selling the 2/3 land quota. From 2014 to 2016, Xinbang Township will consolidate 2,330 mu of non-agricultural land, and the municipal government will receive 20% of LURs fees of 1553 mu. according to statistics of Shanghai Land Market Trading Center, the average LURs fees of Songjiang District was around RMB 12 million Yuan per mu in 2013, and the municipal government can expect the LURs fee of about 3.728 billion Yuan, among which the municipal government will return 129 million Yuan to Xinbang Township.

As a lower level government, the Songjiang district government has its political obligation to implement land consolidation according to the requirement of municipal government. Songjiang district government is the major party in charge of the implementation of land consolidation, and it bears most of the cost of land consolidation. It has to pay the land quota fee of RMB one million Yuan per mu, and thus needs to spend 2.33 billion Yuan in total, which covers expenses on houses displacement and resettlement, compensation for clearing-up of the industrial land, farmland reclamation, and the infrastructure investment in the semi-CCA. Meanwhile, while transferring the land quota to the developable land, the district government has to invest in the infrastructure to transfer the raw land into serviced land. Although the land consolidation is rather costly, the district government can benefit from it in many ways. Firstly, district government will gain 80% of the LURs fees from selling the 2/3 land quota, which is about RMB 14.9 billion Yuan in the Xinbang case. Secondly, the more compact land use, industry upgrading and improvement of environmental quality are the key objectives of land consolidation. Nevertheless, in the reality, district government has to assume the risks in the land market and social instabilities caused by the large-scale relocation.

### *4.3.2 Township government and village committee*

Township has been playing the key role in implementation of land consolidation planning, and it is responsible for the relocation of farmers and construction of new apartments. As a reward, the township can obtain some extra EDL in the semi-CCA at a fair price. In the semi-CCA, the Xinbang township government finally received the LURs of EDL of 397.19 mu. Other additional benefit includes the improvement of environmental quality, and more chances for attracting outside investors. While obtaining the LURs fee return of 129 million Yuan from the municipal government, the township government needs to pay about 358 million Yuan for the consolidation (Source: Xinbang township government).

Village collectives are mainly responsible for negotiating with local farmers and factory owners. As a return, they can get the LURs of a certain amount of the EDL in the semi-CCA and the award of RMB 100,000 Yuan for clearing-up of construction land per mu. In the semi-CCA, EDL of 174.17 mu land has been reserved for village collectives. In average, the 11 villages in Xinbang Township will get an award of

about 20 million Yuan per village, which will not be granted to villagers but reserved as for future development funds of collectives.

While the factories are closed, the village committee loses some rent revenue. Before the land consolidation, the village collective could acquire the rent at the annual price of 10,000 to 20,000 per mu. However, compared with the rent loss, the income from the reserved land in the semi-CCA has been anticipated much higher.

### *4.3.3 Local villagers*

During land consolidation, villagers have to give up their *Zhaijidi* land and move to the semi-CCA. After the *Zhaijidi* land is cleared up, villagers can move to new houses whose floor space is equal to the original *Zhaijidi* land in the resettlement area. Moreover, the new house has a state-owned property right, and thus can be sold or mortgaged in the open real estate market. Meanwhile, the Shanghai municipal government requires that the maximum floor space of each household shall be 176 $m^2$. Based on the questionnaire survey, the average floor space of farmer's original houses is 187 $m^2$, among which 155 $m^2$ has legal certificate. In the land consolidation, many households will obtain a new apartment of 176 $m^2$. Furthermore, the farmers can still own contracted farmland, although most of them are no longer engaged in farming. They can transfer their farmland to large landlord or cooperatives at the rent of about 800 Yuan per mu per year.

The villagers will receive no other cash compensation or subsidy except the new apartment. Based on our interview and questionnaire survey, more than 90% of the villagers have shown their willingness to give up *Zhaijidi* land. This is primarily because under the strict planning regulations and *Zhaijidi* land control policy, villagers have little chance for the expansion of their old houses or new construction. It is more favorable for them to obtain a new apartment and public services in the town area. However, the situation is different in Xinbang village adjacent to the town center. Due to the relatively good location, villagers can earn fairly high rent income from the migrant workers. Based on the interview, each household can earn annual rent of RMB 5,000~8,000 Yuan. Moreover, the floor space of some houses is far greater than 176 $m^2$, and the location of semi-CCA is not better than the original village. Therefore, some of them are reluctant to move to the semi-CCA. The over-simplified compensation standard without considering the location difference has been problematic.

### *4.3.4 Entrepreneurs*

In the process of land consolidation, 919.96 industrial land needs to be cleared up, which involves many micro and small enterprises engaging in machining, hardware and chemical industry. They are characterized by low output and serious environment pollution. Some of these enterprises lease land from the township or village collectives, and the lease will be terminated after paying compensation. However, there is a small amount of land owned by the enterprises, and the land consolidation will be more difficult. The compensation is 900 Yuan/$m^2$ for the enterprises with legal land property right and lease contract, and 200 Yuan/$m^2$ for the industrial enterprises without legal property rights. Besides, compensation for the operating loss and relocation cost is also paid.

In the land consolidation, these enterprises will be "expelled" out of Shanghai. In Xinbang Township, most of these enterprises are micro processing factories with 3-4 employees who can make profit of about 300,000 Yuan each year (Source: interview with village committee and local enterprises). After the industrial land is cleared up, the factory owners have to move to other regions or enter the industrial park in Shanghai. Nevertheless, the industrial park has its thresholds such as minimum input-output and high pollution control standard, and land price or rent is much higher than the collective land, thus it is rather difficult for factory owners to find new space in the industrial park. Land consolidation does not take their future development into account, and their voice is intentionally or unintentionally neglected in the land consolidation process.

## Discussions and conclusions

While the available non-agricultural land resource has become more and more scarce in China, many cities, particularly large cities in the developed region, have to transfer their strategy from urban sprawl to land consolidation. Under the strict land quota system and IDBP policy, Shanghai government put the land consolidation in the suburban Shanghai on the agenda in 2011. Through transferring the development rights from collective construction land to state land, the municipal and district government can acquire extra land quota for the growth of new space. Meanwhile, the multiple objectives such as more compact land use, industry upgrading, spatial structure reshaping and environmental pollution treatment can be anticipated.

The case study of Xinbang Township has enabled us to gain insights into stakeholders' perspectives in the land consolidation of the suburban Shanghai. The cost-benefit analysis shows that the municipal government might be the biggest winner. Through the provision of the policy framework and limited land consolidation fund, it can acquire the multiple goals including revenue from LURs fees. The district government has to bear the largest share of cost of consolidation, including villager's relocation and farmland reclamation, but the rewarding can be attractive, for instance, the largest share of LURs fees, the improved environmental quality and investment environment. The district government, however, has to take the risks such as real estate market downturn and social instability due to the large-scale relocation. The township government and village collectives are the party who is responsible detailed negotiation with villagers and entrepreneurs, and relocation of local villagers, and construction of new houses for villagers under the financial support of the district government. As a return, they can receive the bonus from the upper-level government. In the Xinbang case, most villagers expressed their support for the land consolidation, however, a small number of villagers have opposed the consolidation on the ground that the compensation standard is uniform without consideration of their *status quo*. Undoubtedly, the entrepreneurs are the biggest "losers" in the consolidation, and they are expelled out of Shanghai ruthlessly based on a limited compensation.

In general, the land consolidation of Xinbang township seems a "win-win situation". Nevertheless, equity issue emerged during the consolidation. In view of the complexity of local socio-economic condition, policy makers should provide flexibility in policy planning and implementation. Moreover, they should take the attitudes of those adversely affected by their policies into consideration, and compensation should be sufficient to cover their loss. Therefore, local governments are well-suited to tailoring solutions based on local conditions and are rightly the institutions that should play a lead role (Wang *et al.*, 2014). Policy makers should provide flexibility in policy planning and implementation. Institutional changes are capable of

increasing production efficiency, of distributing income in some socially more desirable manner, and of reallocating economic opportunity to achieve social efficiency in line with social objectives (Bromley.1991).

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