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Industrial land development in urban villages in China: A property rights perspective

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A B S T R A C T

The rapid urbanization of China during the past decades has led to the emergence and development of urban villages. Existing literature has largely focused on the lack of state regulations in the development of urban villages. This paper comprehensively identifies and investigates the institutional constraints on land development in urban villages in China based on a property rights framework and a comparative study on two representative cases in Shenzhen. The key institutional constraints on the land development in urban villages include 1) land insecurity caused by the possibility of government expropriation, 2) unequal access to credit because of unequal land rights, and 3) absence of state regulations on collective land transactions because of the lack of *de jure* property rights. These institutional constraints weakened the land-related investment incentives and ability of villagers, and resulted in inferior infrastructure and poorly constructed environment in urban villages.

Introduction

The rapid urbanization of China during the past decades has led to the emergence and development of urban villages. Urban villages were originally rural villages located near the big cities in China. The rapid urban expansion process (Han, Yoshitsugu, Xin, & Hidefumi, 2009; Lin, De Meulder, & Wang, 2011) has authorized the local state for urban development to take over some of the village land, while leaving some of the lands under the control of villagers. The villagers converted their agricultural land for urban use to capture the increased land value in the urbanization process. The landscape of these villages has dramatically changed in the urbanization process of China, which is not only different from their original appearance as rural villages, but also distinct from the newly developed urban areas. These villages are literally called *chengzhongcun* in Chinese, and "villages in the city" or "urban villages" in English (e.g., Tian, 2008; Zhang, Zhao, & Tian, 2003). The term, "urban villages," is used in this study to facilitate simplicity.

Abundant literature has contributed to the understanding of urban villages. The formation and development of urban villages are largely shaped by the urban–rural dual land system in China (Hao, Geertman, Hooimelger, & Sliuzas, 2012a; Tian, 2008; Wu, Zhang, & Webster, 2012; Zhu & Hu, 2009). Compared with other newly developed urban areas with state land, urban villages with collective land are characterized by congested built environment, poor housing conditions, and low quality infrastructure, and, therefore wasteful land use (Po, 2012; Tian, 2008; Zhu & Hu, 2009). A cross-sectional analysis using citywide data from Shenzhen by Choy, Lai, and Lok (2013) indicated that collective land in urban villages suffered from sub-optimal industrial development. The economic performance of industrial development on collective land is inferior to that of state land in terms of industrial land value and industrial value added per unit of land (Choy et al., 2013).

This finding raises the following question: Why is land development in urban villages inferior? Previous studies emphasized the informal development of urban villages because of lack of state regulations (Liu, He, Wu, & Webster, 2010; Wang, Wang, & Wu, 2009; Wu et al., 2012; Zhu & Hu, 2009). Some studies argued that the absence of land use planning on collective land is the key determinant of sub-optimal development of urban villages (Liu et al., 2010; Tian, 2008; Zhu & Hu, 2009). This perspective provides useful insights to the understanding of the development of

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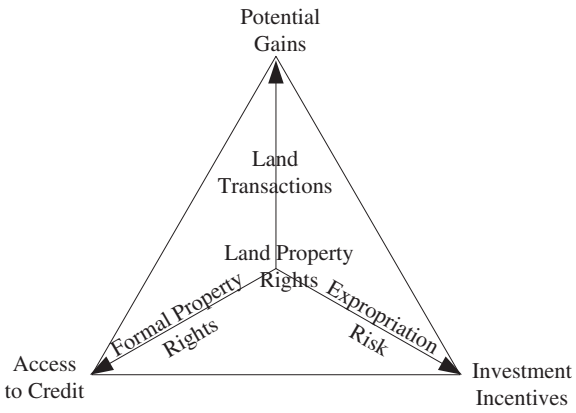

Fig. 1. The conceptual framework for understanding the role of land property rights in land development.

urban villages, but it failed to identify other important institutional constraints to urban villages imposed by the current dual land ownership system. The development behavior of villagers was not examined in existing literature. This study provides a perspective from property rights to understand the development of urban villages, with special attention to industrial land development.

This approach develops a conceptual framework to understand the role of land property rights in land development. This framework includes three aspects 1) land security and investment incentive, 2) land rights and access to credit, and 3) land rights and land transactions. The institutional context of land development in the urbanization process of China is based on existing literature and policy reviews to incorporate the conceptual framework. Based on data sources that include fieldwork, planning documents, and land cadaster information, a comparative analysis on two representative cases in Shenzhen is conducted to illustrate how incomplete property rights play roles in the industrial land development process and affect the land development outcomes in urban villages in China.

The remainder of the paper is organized as follows. Section Two develops a conceptual framework to understand the role of land property rights in land development by reviewing the most significant and credible empirical and theoretical works. Section Three discusses the institutional context of land development in the urbanization process in China to incorporate the conceptual framework. Section Four discusses the research methodology and data sources. Section Five utilizes the conceptual framework to conduct an empirical analysis of industrial land development in urban villages using the case of Dongfang-tantou area with a comparative perspective to the state-led land development in Bagualing area. Section Six concludes.

Conceptual framework

The importance of a complete and definitive set of property rights in determining incentives for economic behavior and performance has gained a high level of scrutiny after the formation of the New Institutional Economics perspective at the end of the 20th century. 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). Property rights can be viewed as an attribute of an economic good. This attribute is often referred to as a bundle of rights, including: 1) the right to use the good, 2) the right to earn income from the good; 3) the right to transfer the good to others; and 4) the right to enforce property rights rules (Eggertsson, 1990). The role of property rights in land development is a central issue in institutional economic analyses. The change of land property rights affects land development and economic performance (Besley, 1995; Field, 2005; Galiani, 2010; Goldstein & Udry, 2008).

By reviewing the most significant and credible empirical and theoretical works, a conceptual framework is established to understand the role of land property rights in land development, as shown in Fig. 1. The channels of land property rights that affect land development are classified into three categories. First, well-protected land rights can improve land-related investment incentives by reducing the expropriation risk. Second, well-defined property rights over land can facilitate land transactions in land markets, and thus, potential gains from trade could be earned. Third, formal rights over land can improve the investment ability of landowners by increasing landowner's access to the credit market.

First, various empirical and theoretical studies show that secure land rights can enhance investment incentives by reducing expropriation risk, whereas weak protection of land property rights leads to low investment (Alston, Libecap, & Schneider, 1996; Besley, 1995; Brasselle, Gaspart, & Platteau, 2002; Deininger & Jin, 2006; Do & Iyer, 2008; Galiani, 2010; Goldstein & Udry, 2008). Do and Iyer (2008) found that improved land rights led to significant increases in the share of total area of multi-year crops and increased irrigation investment after land reform in Vietnam. Deininger & Jin (2006) suggested that government's actions to increase tenure security and transferability of land rights can significantly improve rural investment and land productivity. Contrary to these results, a recent theoretical study argued the possibility for a landowner to overinvest in the land when property rights are incomplete or unclear (Amegashie, 2011). However, this argument has yet to be verified convincingly by empirical studies.

Second, well-defined property rights over land can facilitate land transactions in land markets. Thus, potential gains from trade could be gained. Besley (1995) established the theoretical model to explain the relationship between land property rights and transactions in land markets. Several empirical studies were conducted to validate this theoretical model. Macours, Janvry, and Sadoulet (2010) found that incomplete property rights sharply reduce the level of transactions in the land rental market in rural areas of the Dominican Republic. Griffith-Charles (2004) found a substantial increase in land sales over the entire country after the land titling program specified the land property rights in St. Lucia. Lanjouw and Levy (2002) claimed weak property rights in urban areas could inhibit land transactions by increasing transaction costs in rental and sales markets. Galiani (2010) found that house rentals are facilitated by titling in the urban slums of Argentina.

Third, formal rights over land can improve the investment ability of landowners by increasing their access to the credit market. This link was emphasized and forcefully espoused in De Soto (1989, 2000, and 2001). De Soto (2001: 48) argued, "What the poor lack is the easy access to the property mechanisms that could legally fix the economic potential of their assets so that they could be used to produce, secure, or guarantee greater value in the expanded market … assets need a formal property system to produce significant surplus value." A large number of empirical studies examined this link in rural areas. Some studies found that land reforms created for establishing formal property rights over land increased the access to credit and reduced credit constraints (Feder & Feeny, 1991). However, other empirical studies provided opposite evidence. Boucher, Barham, and Carter (2005) showed that access to credit remains limited after land reforms were implemented in Nicaragua and Honduras. Field and Torero (2006) found that property titles failed to increase credit access among the urban poor after a nationwide titling program was implemented in Peru.

Although most of the above studies are conducted in the agricultural sectors, they provide insightful theoretical perspectives to examine the industrial land development in the urban villages in China. However, the growing body of empirical literature on land rights and development exhibits significant controversy regarding the structure of land property rights and the effects of land rights. On the one hand, these controversies partly stem from the different definitions and assessments of land property rights. On the other hand, these issues may be attributed to the divergent institutional context that determines the different preconditions for land development. Therefore, land property rights should be examined in a specific context. To better understand the property rights arrangements governing land development in urban villages, we need to put this issue in a broader context of the urbanization process and its foundational land institutions in China. The next section discusses these institutions.

Local governments, village collectives, and dual land system in China

Urbanization in China has involved extensive land conversion from agricultural to urban use in the past decades. According to the China Statistical Yearbook (2011), the area of urban built-up land increased from about 9000 km^2 in 1984 to 40,058 km^2 in 2010. This widespread and rapid land conversion process is institutionally based on the urban–rural dual land system of China. Two types of land ownership coexist in the current land administration system, namely, state and collective. The Chinese land administration law stipulates that urban land is owned by the state, whereas rural land is owned by village collectives. Urban land use rights can be transferred. However, the sale, the transfer, and the lease of collective lands for non-agricultural use are forbidden (Land Administration Law of the People's Republic of China 2004 Amendment).

The urban–rural dual land system determines the legal approach for converting land from agricultural to urban use in China. Urbanization generates strong market demands for urban land use. However, the land administration law claims that only the state can legally provide urban land use rights. Therefore, land conversion from agricultural to urban use in China requires the transfer of land ownership from collective to state-owned. State requisition by local governments is the only legal channel for implementing land conversion from agricultural (collective ownership) to urban land (state ownership). Therefore, the role of local governments is dominant in the urban land development process in China.

The dominant role of the local states in the rapid urbanization and economic growth over the past decades is recognized and widely discussed (Oi, 1995; Xu, Tang, & Chan, 2011). The relationship between the central and local states has been redefined since the gradual reform in post-Mao China (Lin & Liu, 2000; Qian & Roland, 1998; Wong, 1991). The state institutions, especially fiscal decentralization since the fiscal reform in the 1990s and political centralization characterized by the cadre evaluation and promotion system, create strong incentives for local states to increase local revenue and economic growth (Qian & Weingast, 1997; Xu et al., 2011). Local governments regard land as an important asset for attracting investment to promote and as a source for generating local revenues. According to Zhou (2010), land conversion in the urbanization of China generated a variety of taxes and fees that contribute to the budgetary and extra-budgetary revenues of the local governments. Therefore, local governments have strong incentives to transfer agricultural land (collective ownership) to urban land (state ownership) through expropriation.

Land expropriations have been widely conducted in the urbanization process over the past decades. According to Lee and Jia (2006), the local governments from 1991 to 2005 expropriated 3,389,000 ha of collective land in China (Table 1). The compensation for land expropriation is based on its original agricultural use, which undoubtedly deprives the farmers from sharing the land rights and interests in the urbanization process. According to a study (UIE, 2007), over 40 million farmers were dispossessed because of land expropriation. About 70% of the complaints lodged by farmers in the past five years are related to rural land expropriation. Compulsory land acquisition has created widespread social problems and political conflicts, but the cases of land acquisitions increased more than 15 times over the past 10 years and accelerated in the following years (Lee & Jia, 2006). Thus, the possibility of being expropriated caused insecurity to village collectives who were assumed to own the collective land.

Table 1
The percentage of land acquisition based on area and period (unit: %).

Area	Period		
	1991 to 1995	1996 to 2000	2000 to 2005
Eastern part	13.06	26.46	60.48
Middle part	13.36	29.97	56.68
Western part	15.14	29.99	54.96
Average	13.82	28.81	57.37

Source: Lee & Jia, 2006.

In reality, there is another mechanism to convert land from agricultural to urban use in the urbanization process of China. Village collectives in the coastal cities of China, where the demand for urban land is high, spontaneously developed a variety of strategies to use their land for urban economic activities (Po, 2008). Collective land in urban villages was transferred from village collectives to outside enterprises and individuals for urban development. It can be observed that large amounts of housing, industrial, and commercial buildings were constructed on collective land in Shenzhen and Guangzhou (Hao, Geertman, Hooimeijer, & Sliuzas, 2012b; Lin et al., 2011; Lin & De Meulder, 2012; Wang et al., 2009). Thus, even if the state law deprives village collectives from *de jure* land property rights in the urbanization process, village collectives possess *de facto* property rights over their collective land through spontaneous land conversion. However, this bottom-up type of land conversion suffers from significant institutional constraints compared with top–down land conversion conducted by local governments. Property rights of villagers over collective land remain incomplete in the urbanization process in China.

Research methods

A set of testable research questions was developed and structured after combining the conceptual framework established in Section Two and the local context of land property rights in China in Section Three. The specific research questions were formulated as follows. First, how does the risk of land expropriation affect the village collectives' land use behaviors in urban villages? Second, does the lack of *de jure* land rights limit the access of village collectives to credit market and weaken the investment ability of the village collectives to finance land development? Third, do incomplete land property rights create barriers to land transactions in urban villages?

A comparative analysis was conducted based on two representative cases in Shenzhen to address these research questions. Shenzhen was originally a hilly area with agricultural land and village settlements located along the eastern shore of the Pearl River Delta that straddles the border of mainland China and Hong Kong. Shenzhen underwent rapid urbanization in the following decades

Fig. 2. The location of Bagualing area and Dongfan-tantou area in Shenzhen.

after the reform and introduction of a special economic zone in 1979, in which the urban built-up area increased from 3 km^2 in 1979 to 894 km^2 in 2009 (Shenzhen Municipal Government, 2010). By the end of 2009, the municipality covered an area of 1992 km^2, which included urban and rural areas having a total population of 8,912,300 (Shenzhen Yearbook, 2010). The urbanization process of Shenzhen is based on the urban–rural dual land ownership system, which shares similar institutional arrangements with other Chinese cities.

To investigate empirically the land development process and outcomes in the urban villages with incomplete property rights, this research selected Dongfang-tantou industrial area for in-depth

Fig. 3. The road system and land use in Bagualing area.

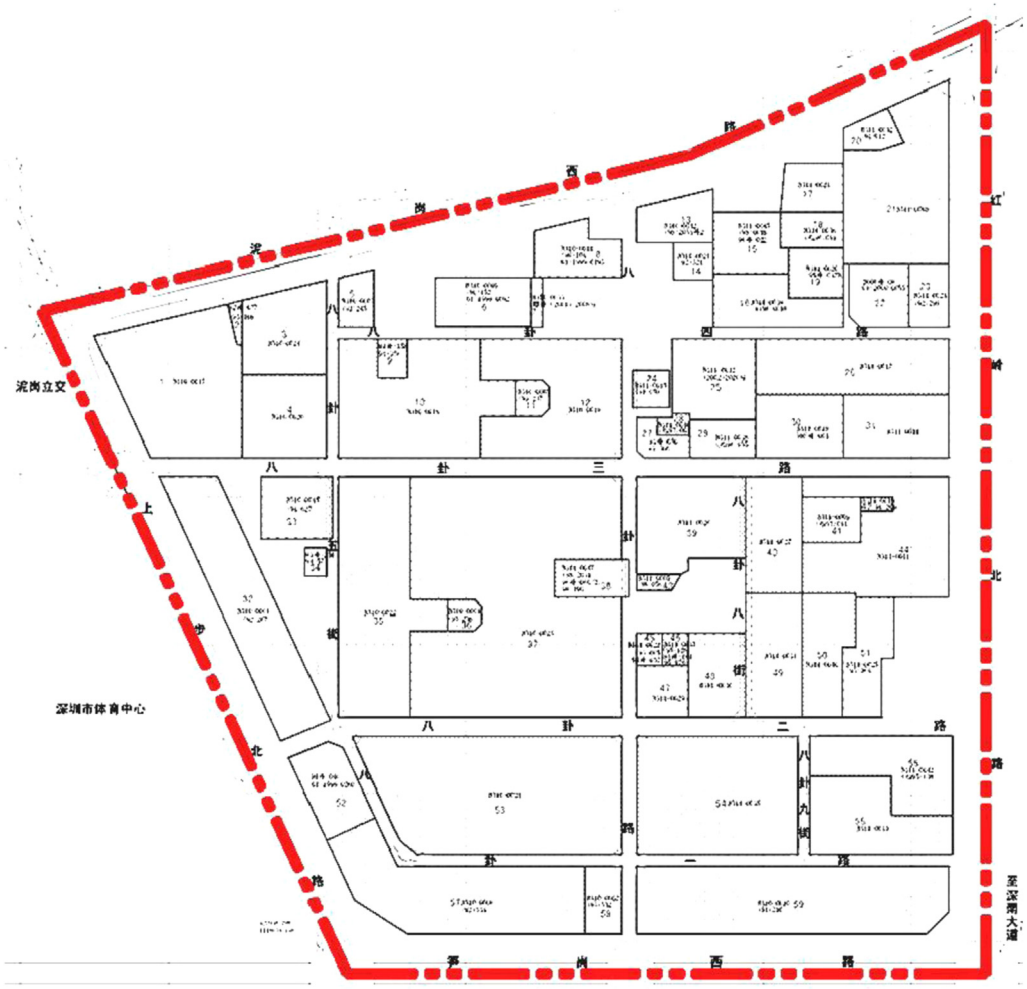

Fig. 4. The land ownership status in Bagualing industrial area.

case study. Located in the Bao'an District, this industrial area was developed by village collectives during the urbanization process. The land is mainly collectively owned. The development process and outcomes of Dongfang-tantou industrial area was comparatively examined against the Bagualing industrial area, which is located in Futian District where the land is state-owned. These industrial areas have similar land areas (138 and 116 ha, respectively) and topography. Fig. 2 shows the location of these areas. The data for analysis come from field study, interviews with village officials, and relevant planning documents and research reports such as the "Regeneration Planning of Dongfang-tantou Industrial Area," the "Regeneration Planning of Bagualing industrial Area," statistical year books, and published literature. The case study is presented in the next section.

Industrial land development in Bagualing area and Dongfang-tantou area: a comparative perspective

Bagualing and Dongfang-tantou were originally agricultural areas owned by rural villages before the economic reform. These areas have experienced rapid urbanization process and become industrialized areas in the past decades. The land development process in these areas is distinct because of the different institutional arrangements on land property rights. Land development in Bagualing area is state-led because the collective land was converted to state land. By contrast, the land development in Dongfang-tantou is village-led because the land remains collectively owned. The Bagualing industrial area was used as a baseline to analyze the Dongfang-tantou industrial area because this study investigates the effects of incomplete property rights on the land development process and outcomes.

The Shenzhen government has expropriated a large scale of agricultural land from the villages to attract foreign investments and to promote urban development because of the establishment of the Special Economic Zone (SEZ). Bagualing was expropriated in the early 1980s because it is located in the core area of SEZ. The land was converted to state land after expropriation. Similar to other converted state lands, the development of Bagualing was shaped according to the following process. First, top–down land use planning was used to guide (regulate) future land use and to transfer land use rights in the development area. Second, the state land was used as collateral to finance the construction of public infrastructure mainly includes transportation infrastructure, road system, electricity and water infrastructure, and public parks. Third, the land management system allowed and governed the transfer of land use rights.

According to the strategic development plan of the Shenzhen SEZ, the Bagualing area was designated as one of the most important bases for industrial development. Land use rights were transferred to a state-owned firm (Shenzhen Industrial Development Service

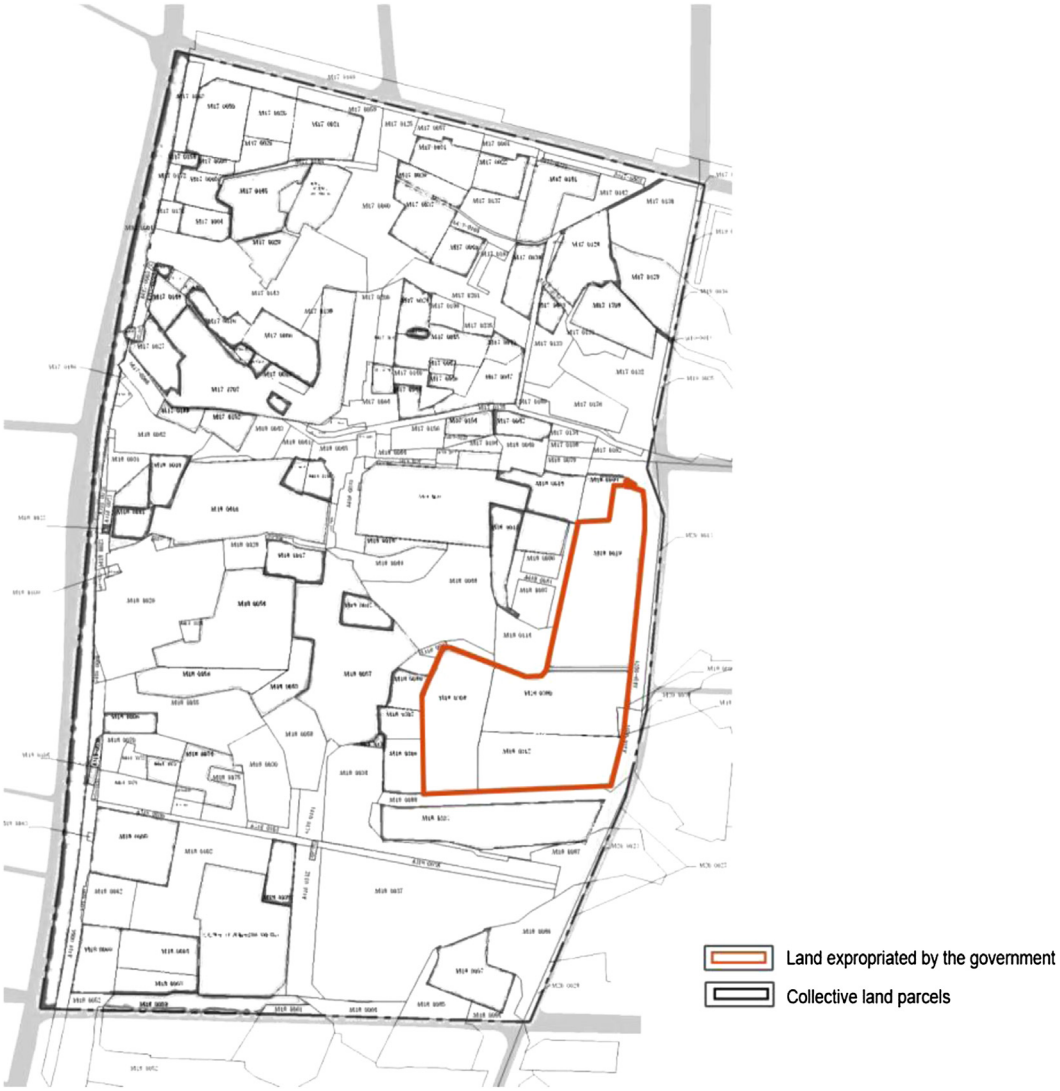

Fig. 5. The land ownership status in Dongfang-tantou area.

Corporation). The road system and public infrastructure were constructed based on site-level land use planning. Large investments supported infrastructure construction by using land use rights as collateral. Thus, the high level of infrastructure in Bagualing area is highly competitive for attracting enterprises and investments on land development and industrial production. In less than 10 years, the Bagualing area has developed to an industrial site marked by well-designed road system and built-environment (Fig. 3). This area has 194 buildings, with a building density of 16.5% and a floor area ratio of 1.53.

Land transactions are quite active in the Bagualing industrial area and are well regulated by the land management system. Based on data from the land cadastral management system provided by the official department and the document of "Regeneration Planning of Bagualing Industrial Area," the land ownership status in the Bagualing industrial area is recorded and mapped in Fig. 4. This area has 59 land parcels, with 25 land parcels owned by the Shenzhen Industrial Development Service Corporation and 34 land parcels owned by other different enterprises and government agencies. From Fig. 4, land parcels in Bagualing have been delineated in a systematic and regular manner. The shape of land parcels is mostly rectangular. Such land parcel system provides an important basis to facilitate land transactions and is more likely to lead to greater property investment and higher land values (Libecap & Lueck, 2011).

Bagualing area has rapidly developed to a competitive industrial area over the past years and has established an important role in the industrial development and economic growth in Shenzhen. A wide range of manufacturing industries are located here, such as electronics, telecommunications, textile, pharmaceutical, printing, clothing, and food. This industrial area accommodated more than 800 industrial companies and provided more than 90,000 job opportunities during its flourishing stage. As the process of urbanization is still ongoing, some manufacturing industries from the big cities in China have moved into the second or third tier cities in inland regions for lower cost. Therefore, upgrading the current land use in the Bagualing area is needed. The well-delineated land parcel system and well-designed built-environment make upgrading existing land use technically convenient. In reality, some of the industrial land parcels in Bagualing area have already been upgraded to meet the new market demand.

Land development in Bagualing area is state-led. The land is used as collateral and access to credit has effectively financed a high level of infrastructure construction. This system has attracted various enterprises and investments on land development and industrial production. Land transactions have thus been quite active

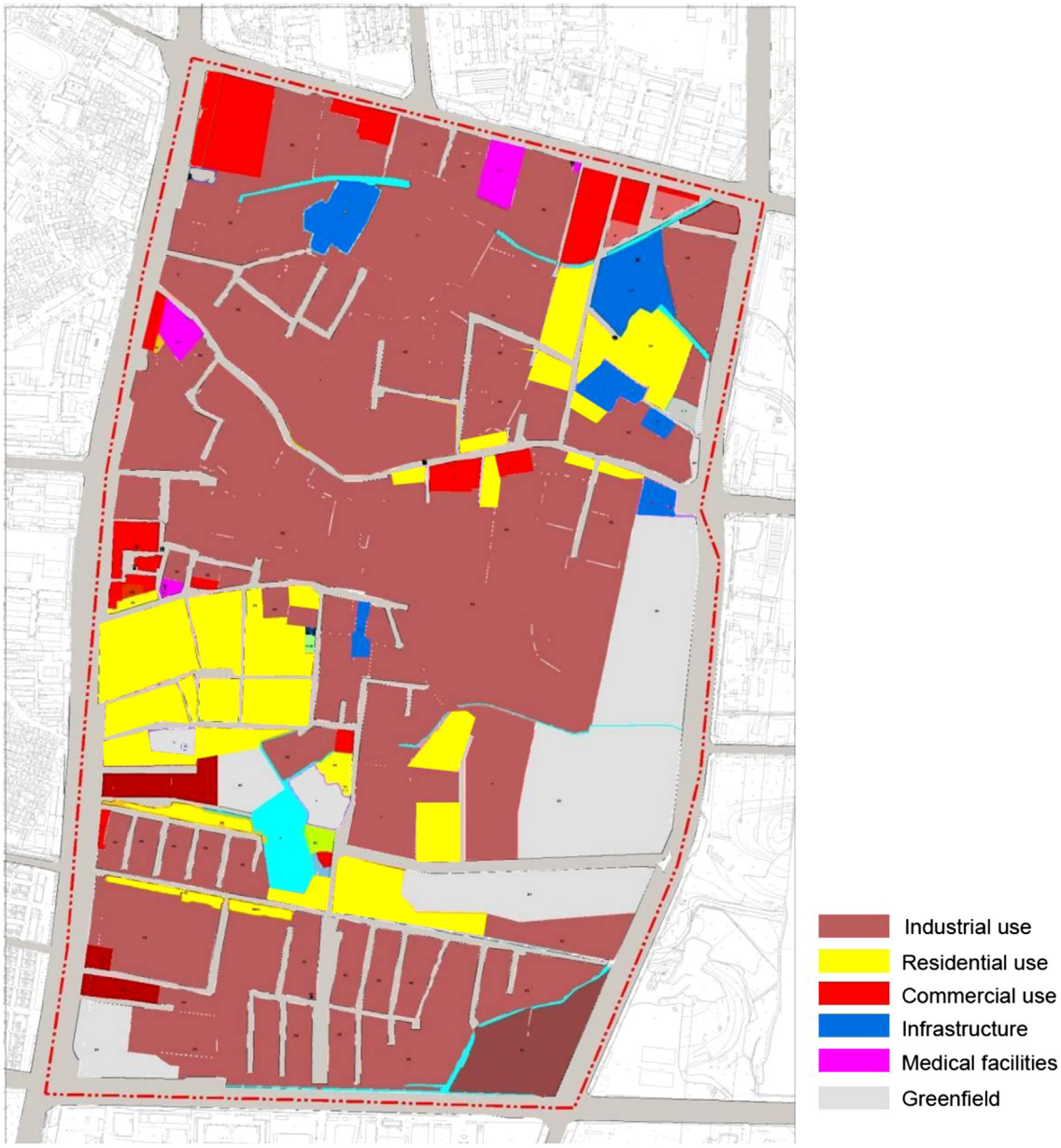

Fig. 6. The land use in Dongfang-tantou area.

in this area. The land use planning and land management system regulate the transactions of state land. Hence, the land parcels are delineated in a systematic and regular manner, which have facilitated future land transactions and upgraded land use. Over the past years, the Bagualing area has rapidly developed to a competitive industrial area and has contributed to the economic development in Shenzhen. Recently, this area has been experiencing the transition from traditional manufacturing industry to emphasizing services in the on-going urbanization process.

Dongfang-tantou area is located in the Bao'an District of Shenzhen. This area is located outside the SEZ, but has convenient transportation conditions. Three villages, namely, Dongfang, Tantou, and Hongxing, own the land in Dongfang-tantou, which was originally used for agricultural production. Urbanization has created a strong and diversified market demand for urban land use, which exceeds the state land supply of the government. The villagers re-collectivized to develop their farmlands for urban use to capture the land value increased by urbanization. Land transactions in Dongfang-tantou area are also active. This study shows that village-led land conversion and development in this area has been achieved through a combination of different channels. First, the villagers developed the land and transferred (leased or sold) the buildings to outside enterprises. Second, the villages and outside enterprises developed the land together and transferred (leased or sold) the buildings to enterprises. Third, the villages transferred (leased or sold) the land to outside enterprises.

However, similar to other urban villages, land transactions and development in Dongfang-tantou area suffer from severe institutional constraints. First, collective land is not secure because of the possibility of being expropriated by the government. The risk of land expropriation to villagers is uncertain in most cases because the government could unsystematically expropriate the land during urbanization. The government tends to expropriate vacant land instead of developed land to reduce the costs involved in land

acquisition. This approach provides strong incentives for the villagers to occupy their land for immediate interests. The more land they develop, the less likely they will be expropriated by the government. Therefore, the risk of land expropriation has weakened the long-term investment incentives of villagers. Second, collective land transaction is legally forbidden, and therefore, not covered by the state land management system. Land development in urban villages is disordered without effective state regulation and long-term investment incentives of villagers.

Over the past years, Dongfang-tantou area has developed to an industrial site, which involved a large volume and variety of informal land transactions. Based on data from the land cadastral management system, our fieldworks, and the document of "Regeneration Planning of Dongfang-tantou Industrial Area," the land ownership status in Dongfang-tantou industrial area is recorded and mapped in Fig. 5. The figure shows 222 land parcels in this area, with 2 land parcels expropriated by the government and transferred to developers. The land ownership status in this area is highly complicated due to the disordered delineation of land parcels and transactions. This complication resulted from the lack of long-term investment incentives of villagers and effective state regulations. Village collectives still own some of the land parcels, while some have been transferred to other enterprises and individuals. As shown in Fig. 5, land parcels in the Dongfang-tantou area were delineated in an unsystematic manner. The sizes and shapes of land parcels in this area are mostly irregular. Such land parcel system has directly resulted in inferior and disordered environment (Fig. 6), which is therefore unfavorable to efficient land use and sustainable development.

The village-led land development in Dongfang-tantou area has suffered from the lack of de jure land property rights. Unequal land rights have prevented villagers from using their land as collateral, which has weakened their ability to finance infrastructure construction. The fieldworks in this study found that the financial resource for infrastructure construction and other land-related investments mainly came from land acquisition compensation

Fig. 7. The road system in Dongfang-tantou area.

fees. The three villages in Dongfang-tantou area received compensation fees for their lands the government had expropriated. However, the amount of land acquisition compensation is determined by the original land use, which is agricultural. Villagers were excluded from the income rights of the potential land use—urban use. Therefore, the villagers were under-compensated in land requisition, which indicated limited funding source. The financial constraints and risk of land acquisition have therefore contributed to inferior infrastructure and environment.

This study shows that Dongfang-tantou area has suffered from the lack of infrastructure. Road system in Dongfang-tantou area is problematic because of limited width, poor connection, and road conditions (Fig. 7). The density of road network was only 1.0 m/km^2, which lags behind that of Bagualing area. Except for the poor road system, the quality of the other infrastructure, such as water supply, electricity, and drain, is also poor. For instance, insufficient pipes for water supply have resulted in unstable water supply. The current electricity power could not satisfy the needs for industrial production as well. The low level of infrastructure and the poorly built environment have made Dongfang-tantou area less competitive in attracting outside enterprises and investments. The industries in this area include paper, plastic, mold, and ironware, which remain at a low level with low value-added in production and heavy pollution.

Dongfang-tantou area needs to upgrade its land use to meet to new market demands. However, the challenges the area faces are greater than that of the Bagualing area. On the one hand, the existing land parcel system and built environment in Dongfang-tantou area could not satisfy the needs for new land uses. On the other hand, since the dual land ownership system is still at work, the institutional arrangements governing the redevelopment of urban villages are still highly state-oriented, which have hindered the land redevelopment demand. In sum, the village-led land development has suffered from severe institutional constraints posed by the dual land ownership system in the urbanization process. The unequal rights to land have resulted in suboptimal and unsustainable land development in urban villages in China.

Conclusion

The rapid urbanization of China over the past decades has led to the emergence and development of urban villages. Urban villages play an important role in the urbanization of China including the development of housing, industry, and infrastructure. However, the current urban—rural dual land system in China has imposed severe institutional constraints on the land development in urban villages. Property rights over collective land are incomplete and result in suboptimal and unsustainable land development in urban villages.

Compared with previous studies, this study has not only aligned the development of urban villages to urban—rural dual land system, but has explicitly identified the institutional constrains facing the villagers in the collective land development process, thus deepens our understanding of the urban villages in China. In this study, essential institutional differences of state-led and village-led land development were investigated based on a property rights framework and were further illustrated through a comparative study on two representative cases in Shenzhen. The key institutional constraints on land development in urban villages include 1) land insecurity caused by the possibility of being expropriated by the government, 2) unequal access to credit due to the unequal land rights, and 3) absence of state regulations on collective land transactions because of the lack of *de jure* property rights.

These institutional constraints greatly affect land development in urban villages. First, land expropriation risk provides strong incentives for urban villagers to occupy the land for immediate interests instead of long-term investments. Second, collective land transaction is legally forbidden and not covered by the state land management system. Without effective state regulation and long-term investment incentives for villagers, land development in urban villages resulted in inferior and disordered environment. The unequal rights of land ownership have deprived the villagers of the formal financial source and have weakened their ability to finance infrastructure construction in urban villages. The low level of infrastructure has made urban villages less competitive in attracting investments for industrial development. Therefore, land development in urban villages is suboptimal because of the severe institutional constraints on land property rights. To move toward a more efficient and equitable land development process, further land reforms are needed to clarify and to formalize property rights over collective land in urban villages in China.

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