SYNOPSIS

Land Banking: A Mechanism for Urban Sustainable Development in China

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Nobel economics laureate Joseph E. Stiglitz has cited urbanization in China, along with technology developments in the US, as the two most important issues that will shape the world's development during the twenty first century (Researching Group of National Bureau of Statistics of China 2002). China's urbanization, an integrated process of introversive agglomeration and extroversive extension (Sustainable Development Strategy Research Group of Chinese Academy of Science 2005), has been accelerated since Deng Xiaoping's introduction of economic reform in the late 1970s, lifting more than 200 million people out of poverty and transforming the nation into the world's second-largest economy and the biggest consumer of steel, copper, and coal. The world's most-populous nation held 690.79 million people in urban areas by the end of 2011, compared with 656.56 million in the countryside, which means China's urban population exceeds that of the countryside for the first time (Lu et al. 2012). However, there are still many ecological, socio-economic, and political problems or constraints to be solved or taken into account for urban sustainable development in China, among which urban land issue has ranked as the most noteworthy one (Lv et al. 2010). It is important for Chinese government to formulate a scientific strategy for urban future development that can effectively address the immense growing economy and arable land protection problems.

URBAN SUSTAINABLE DEVELOPMENT PROBLEMS

With the rapid urbanization in the past three decades, a phenomenal conversion from rural land to urban land has

been found in nearly every city in China. Urban land growth from 2000 to 2005 in 30 Chinese big cities reached 44 %; the average growth of mega-cities reached 60 %; especially the growth of Shenzhen hit 300 %. In this process, the average ratio of the urban land growth rate to the population growth rate in mega-cities reached around 2.35, exceeding by a large margin 1.12, deemed as the reasonable level of urban development by many researchers (Yao et al. 2009). Moreover, the area of construction potential of China in 2008 amounts to 283 400 km², which accounts for 2.99 % of total land area. The value of construction land potential per capita is 0.0034 acres (Yong et al. 2011). Meanwhile, China now is experiencing a dramatic loss of arable land (Ding et al. 2007). The arable land of the whole country is 30.25 million acres in 2005 (32.13 million acres in 1996), but the arable land per capita is only 0.23 acres, merely 37.3 % of the world's average. As a result, the arable land in China has been reduced sharply, leading to a threat to food security.

In the future 15–20 years, China's economic and urban development will maintain the rapid and sustained growth as before, and the total economic volume will be about 14 000 000–19 000 000 million USD, and the total urban population will reach 800–900 million (The State Council 2010). These tremendous achievements of rapid and sustained economic growth and large-scale urbanization in China would not occur without detrimental costs to resources and environment. Most regions with rapid economic growth, especially metropolitan regions, have chaotic industrial layouts and disordered urban spaces (Zhang and Feng 2007). In addition, there are problems such as inefficiency of land use caused by irrational structure of urban construction, a sharp decline of arable land area caused by large-scale urbanization, and serious environmental pollution caused by dispersive industrial zone distribution.

IMPLEMENTATION OF LAND BANKING MECHANISM IN CHINA

Land banking is a mechanism initiated in western countries over 100 years ago referring to acts of legal advance acquisition of land, prior to developing and storing it for future land supply (Evans 2004). As a configure mean of urban land, land banking would achieve optimal allocation of land resources and further promote the process of compact construction land and the diversity of the city, which is widely believed to be the core concept of sustainable development of China's urban area (Qiu 2006).

This mechanism was introduced to China in the 1990s during the urban land reform period. The land reform was initiated in 1988 when the amendment of Land Administration Law of China recognized the separation of land use right from land ownership of urban land and allowed the transfer of land use right in the market. During the planned economy period (about 1949–1978), a dual system of public land ownership was formed in China with the urban land owned by the state and rural land owned by collective economy communities in rural areas. However, state-owned land in the urban areas was occupied by different government units and work units rather than the unified ownership of state or local governments. As a result, the land ownership system in China led to a mess in the source of land acquisition and gave more power to the local city authorities in negotiation on compensation. The total supplies of urban land were out of control due to overlapping supplies. The effective implementation of land banking mechanism would lead to first the monopolization of first-hand land supply for business and industrial use by the government; second, a transparent market price of second-hand land use right transaction (Huang et al. 2008). Consequently, the administrative departments of land and resources under the municipal and county governments

would regulate and control land market and enhance the reasonable utilization of land resources by this mechanism.

It has been pointed out that an essential dimension of urban sustainable development is to satisfy the need for public space and municipal infrastructure construction. In East China, the rapid residential and commercial development in recent years has led to a sharp decline in urban greenery, so land banking has been adopted as an important and effective mechanism of public space reserve for future greenways, parks, and natural reserves in many communities. Land banking system boosts the land capital value, guarantees government's land profit, maximizes the land asset, increases the financial income and keeps state-owned land assets from shrinking. Figure 1 illustrates the comparison of land use right sales income, local fiscal income (LFI) and municipal infrastructure investment (MII) in China from 2001 to 2010. LFI in the figure refers to tax and funds excluding the land sale income (LSI) from land banking. The significant increase of LSI during the period can help the local city government balance the high density of infrastructure investment and fiscal income.

Lots of state-owned companies went bankrupt in the early 1990s. With the help of land banking mechanism, the land acquisition compensation raised by land banking authority is helpful to deepen the reform of the state-owned enterprises because of the land ownership transfer (Dong 2007). Meanwhile, land banking authority shall, in light of reduced resources cultivated land resources for new development and construction, give priority to land used for building under state inventory which is left unused, unoccupied, or utilized with low efficiency. This economical and intensive use of land will be a major boost to the compact city concept in urban sustainable development.

By the end of 2003, there are 1624 cities or counties establishing land banking authorities among the total 2300 of cities and counties in China (Yang et al. 2005). Land

Fig. 1 Comparison of land use right sales income, local fiscal income and municipal infrastructure investment in China from 2001 to 2010

banking has been a common practice in many municipalities across China. However, many problems still exist during the process of land banking, such as unclear functional position of land banking organizations, single capital resource, unfair land compensation standards, and incomplete urban design (Dong 2007). By the end of 2007, the Ministry of land and Resources, the Ministry of Finance and People's Bank of China jointly formulated the Measures for Land Reserve Administration, which aimed at strengthening land administration and regulating land reserve administrative behaviors. The detailed provisions for implementation of urban land banking are regulated in a governmental resolution.

Since the first land purchase banking organization in China, Shanghai Municipal Land Development Center was organized in 1996, land banking system has become a dynamic mechanism controlling urban land growth, planning, and addressing urban development issue for urban sustainable development. The establishment of planning-oriented urban land banking mechanism can not only optimize the internal spatial structure of urban built-up areas but also strengthen the protection of the external open space. Therefore, land banking mechanism has proved to be a useful exploration of sustainable urban development.

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