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Tingting Xu

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# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PUBLIC POLICY & GOVERNANCE



## Intensive Use of Urban Land in New Urbanization for China: Issue and Solution

Tingting Xu

School of Public Administration, Southwest Jiaotong University, P. R. China

Email: 15982261412@163.com

### Abstract

Urbanization is a dynamic progressive phase in industrialization process, reflecting a country's level of modernization. Based on the circumstances of both great population and less land, the traditional extensive expansion mode of urbanization is not suitable for sustainable development for China. Therefore, China should take the road of intensive land use in new urbanization, that is, to increase the capacity of city, to conserve land, to protect arable land and to improve comprehensive social welfare to form the best combination of resource protection with sustainable economic development.

**Keywords:** Urbanization, Intensive Land Use, Sustainable Development.

### Introduction

Urbanization is an inevitable trend of economic and social development, which reflects the level of a country's modernization. The traditional epitaxial expansion mode based on the occupation of large land is not sustainable for urbanization. Scarcity of land resources requires that the development of urbanization must densely use land resources. Therefore, how to make the intensive use of limited land, and maximize the benefits will be the focus of further promoting the development of urbanization.

Researches on the intensive utilization of urban land have initially formed from the theory of rent and location in the 19th century and early 20th century. Late 20th century, the proposed idea for sustainable development made the intensive utilization of urban land to get unprecedented attention as an important means to promote sustainable urban development in the Western society. On the basis of reflection on the extensional development mode of original city, they proposed the sustainable development goals of city and introduce the concept of urban growth boundary, which defined the scope of urban expansion, namely so-called growth management in economics. Growth management combines more objectives of the intensive use of urban land, pursuing healthy land management (Zhang, 1999; Gillham, 2002; Steven, 2006).

In 1990s, urban land use and redevelopment gradually attracted more attention in the West, the way of urban expansion has gradually transformed from the original way of marginalization into internal redevelopment with appropriate technical methods proposed under the background of practice demands. Some scholars put forward that the redevelopment of urban land use is possible only if the increased benefits outweigh the costs and current value of land by analysis of metropolitan spatial growth model (Brueckner, 1980; Wheaton, 1982; Munneke, 1996). In addition, land redevelopment in inner-city is not only just an economic problem, but also more related to corresponding coordination with supported functions of urban infrastructure. In the design of urban planning and development policies, we should be aware that economic and human sustainability in city increasingly depends on the combination of good land resource management and adequate urban capacity (Liu, 2009).

In China, due to the strict regulation of the government to urban land use, although there are appropriate policies and management tools on how to improve urban land use, the relevant research mainly draws lessons from foreign research achievements to control urban expansion and promote the intensive utilization of urban land, which lack of appropriate theoretical and practical foundation. Some domestic scholars present the ideas and practices related to the intensive use of land in new urbanization through summarizing the research results of abroad economics, planning science, geography and other subjects in the use of urban land (Wang, 2006; Chen, 2002; Wang, 2006; Liu, 2006). This paper will analyze the issue of urban land use in China based on learning from existing research results.

### **Connotation of Land-Intensive Utilization**

#### **The Pursuit of Comprehensive Benefits**

Cities have various functions including social, economic and environmental functions, which can interact and restrict with each other. Direct target of urban land use is to increase the economic benefits per unit of land, and promote social and economic development. However, the development of whole society is a process of comprehensive and coordinated development, including all aspects of society, economy and environment, so we can not only pursue economic input-output ratio on the intensive use of land. City is population center, which needs a harmonious living and working environment. If we only focus on economic development but ignore comprehensive social development, it will be hard for us to attain this goal.

#### **Two-way Adjustment of the Government and the Market in Intensive Land Use**

Intensive land use can not only rely on the government's power to complete, it requires that the government controls and the market regulation complement each other with effective joint action. Among them, the government plays a leading role, and the purpose is to ensure the healthy and orderly functioning of land market and formulate a rational distribution plan for the economic development of land resources. Government can use finance, taxation, credit and other economic instruments and related policies to restrict the behavior of enterprises.

The main target of market price mechanism is to regulate supply and demand of land and take control of land reserves and circulation. Feeding back to government departments through market information, then they can make decisions to improve the market and solve some problems which the market fail to function. Similarly, when government's policies can't be

functioning adequately, it needs the market to improve efficiency and promote economic development.

### **Dynamic Development Process of Intensive Land Use**

With the development of urbanization, there are many great changes in ways of production, life and other aspects, so all policies and measures should be proactive to promote the development of intensive land use, fully aware of the changed needs of future land to improve policy from time to time. In addition, at the present the focus of intensive land use problems have been almost biased on the existing stock, ignoring the incremental management in current trend of urban extension which is unable to contain. Urban land use needs not only to organize and optimize the existing stock, but also to rationally plan for incremental land use. If there is an unreasonable city incremental land planning, which is uncoordinated between functionality and structures of existing urban land, even if we spend more money, the overall development of cities and towns will be unbalanced with no doubt. If we cannot effectively use the incremental land, it will trigger a series of urban planning issues.

In a word, the connotation of intensive use of urban land refers to a comprehensive and overall goal under the condition of the pursuit of social development and by means of common regulation of the market and the government in two-way to manage the stock of urban land and effectively plan for land increment with rational distribution and optimizing the structure. China should fully tap the potentials of the land to improve efficiency in utilization for sustainable development.

### **The Sense of Intensive Use for Urban Land**

Based on extensive status quo, it's very important to adopt intensified utilization of urban lands. To begin with, it is an inevitable choice for the sake of the scarcity of land resources because of the contradiction between people and land. Given our national conditions that China hasn't enough land for large population, the intensive use of land is the inevitable choice for China's urban development. China should deeply study and excavate the potentials of the existing stock of land, effectively reduce the occupation of farmland in the urban development process, also adhere to the road of sustainable development, and promote the healthy development of economy.

Secondly, the urban land use is an important way to push the fast and healthy urbanization to comprehensively improve the quality of urban development in China. It can effectively reduce the investment in unit land and improve the efficiency of urban land use by the increase of population density.

Thirdly, as urban land use is a major initiative to strengthen land management, so land management department shall establish a scientific guideline to control land expansion plan, formulate and consummate urban land use laws and regulations to promote the legalization of land management process.

The intensive use of urban land can promote China's tradition patterns with extensive waste to fundamentally change, which can promote the market-oriented use of land, and unify economic, environmental and social benefits of land use rather than the one-sided pursuit of the highest land use intensity. It can effectively optimize land use structure to conserve land

resources, and promote the healthy development of China's urbanization in an orderly manner. Also, it has great significance to protect comprehensive, coordinated and sustainable development in economic society.

**Main Performance of Irrational Land use in Urbanization**  
**Blind Expansion of Urban**

In recent years, the real estate craze makes some areas blindly to pursue over-population and excess land scale, resulting in occupying too many lands with a focus on quantity over quality. Excessive occupation of arable land makes the intensified contradictions between construction land and arable land. In addition, in order to obtain government funding, there appears a lot of unregulated development zone, which cause a more serious waste of the idle land.

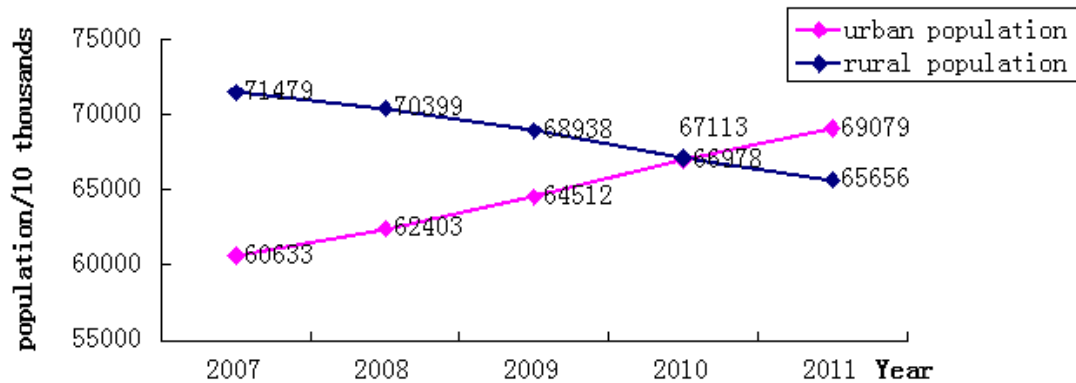


Fig 1. 2007–2011 Chinese population map

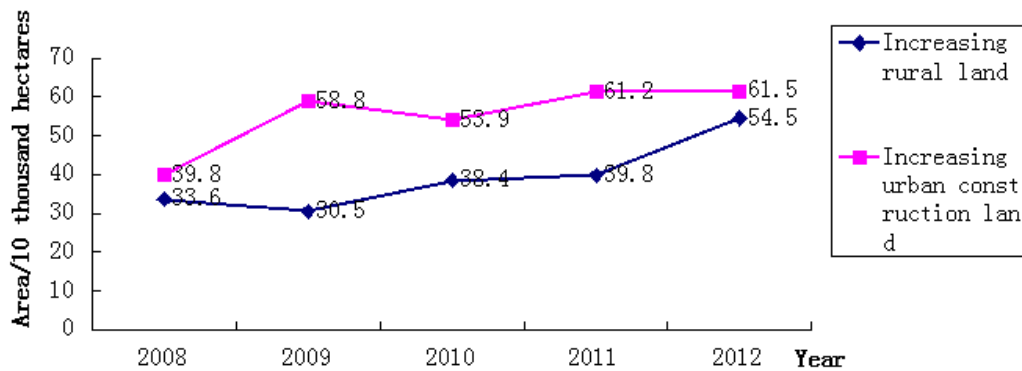


Fig 2. 2008–2012 Changes in Chinese land area

As shown in Fig. 1, China's urban population and rural population appear the opposite trend, while a large number of rural population come into the city, which lead to a massive expansion of the city. In Fig.2, new rural land has increased more and more slowly since 2009, but new urban land has turned out to be more fast. The blind expansion of city causes the deficiency of urban area to meet the fast continuous expansion of population. At the same time, some cities ignore to mine the internal potentials of urban land use, resulting in the contradiction between urban land expansion and population growth.

### Unreasonably Overall Urban Layout

In the process of urbanization, infrastructure construction is indispensable, but the pursuit of achievements for some local governments ignoring the serious repeated or advanced construction makes the whole function of the city not effectively to carry out. Those phenomena directly lead to the imbalances of structure of land use with the higher ratio of industry land to life land and the insufficient proportion of green area to make the environment worse and worse, especially the deficiency in public infrastructure such as sewage treatment facilities, education, road engineering, etc.

The road space per capita only reached 13.8 square meters in the urban area in 2011, and the path length was only 7.6 km per ten thousand people, while the green area of city was 2.243 million hectares, which is far lower than the average road area per capita of 15 to 20 square meters in foreign city (see Table 1). With the expanding urban area and the increasing population density in recent years, the people's livelihood infrastructures such as roads are more inadequate. However the infrastructure conditions are the best aspect that can reflect a country's or a region's real level of urbanization development, so the shortage of urban infrastructures fundamentally limits the level of urbanization in the future.

**Table 1** The basic situation of public utilities

Year	1990	1995	2000	2007	2008	2009	2010	2011
Urban centre area (10,000 sq km)	116.6	117.2	87.80	17.61	17.81	17.55	17.87	18.36
Built-up urban area (10,000 sq km)	1.29	1.93	2.24	3.55	3.63	3.81	4.01	4.36
Construction land area (10,000 sq km)	1.16	2.21	2.21	3.64	3.91	3.87	3.98	4.19
The density of urban population (population per sq km)	279	322	442	2104	2080	2147	2209	2228
Road length per 10,000 people (kilometer)	3.1	3.8	4.1	6.6	7	7.1	7.5	7.6
Road area per people (square metre)	3.1	4.4	6.1	11.4	12.2	12.8	13.2	13.8
Urban green area (10,000 hectares)	47.5	67.8	86.5	170.9	174.7	199.3	213.4	224.3

Note : Urban centre area means urban area before 2006.

### A Large Number of Idle Land and old Houses in Urban Area

The urban land will be covered by plenty of building debris, litter and living garbage, if they are kept pointless for a long time, which makes the idle lands lose functions. The bare surface will also increase the gravel contents in the air and cause dust weather, which has already happened in Beijing. In addition, the fact that the developers hoard the idle land and delay the

development will influence the overall layout of urban land space, especially those idle lands in city's superior location, so their location advantages cannot get a full play in the whole function of city. Besides the idle lands, another serious problem in urban area is a plenty of old houses locating in good sections and blocks, which hinders the concentrated development of overall city.

### **The Solution of Intensive Utilization for Urban Land**

There are lots of indicators for measuring the degree of intensive utilization for urban land. Generally, the greater the plot ratio, the bigger investment intensity of land and the intensity of land use indicate the higher degree of intensive utilization of land. The intensive utilization of urban land can be implemented from the following aspects, for example, the general planning of land use, the land market management, the deep mining of urban stock land, the reasonable using of new construction land and the optimization of industrial layout, etc.

### **Scientifically to Formulate General Plan for Land use Based on the Current Situation of City**

The emphasis is to formulate the plan of basic farmland protection areas and urban development control to clear land expanded boundaries with strictly control of the supply of urban construction land to stem the trend of blind expansion of city size and farmland occupation. It is necessary to adhere to combine the current goal and the long-term interests and to formulate the reasonable standards of land use.

### **Reasonable Layout and Effective Management**

The local government should implement effective guide based on the overall development plan enacted by the central government to point out the direction of further development and formulate a comprehensive evaluation system for local government to implement land management. The basic principles are that, city should not only take the economic benefits into consideration, but also the infrastructure evaluation containing all aspects of people's livelihood to build a sound land management system. In addition, city should integrate the government internal assessment with the people's livelihood construction and build a public participation mechanism to strengthen overall social benefits.

How to make effective management? There are two ways. The first is to complete the land market system, which means that combines market regulation with government control, and regulates the market of reasonable land transfer to ensure the healthy development of land market. The second is to strengthen the legal system of land management. For the present status of the serious waste of land resources in China, every city should further accelerate the legislative work of land management, sound laws and regulations to make sure that the management has a guideline to follow up.

### **Actively to Promote Urban Land Replacement and to Take the Road of Connotative Development**

There is a huge potential in adjusting the use of existing construction land in China, city should execute the reconstruction of old city, especially among the low efficiency old houses in the built area. Thus, city can not only exploit and use the existing idle land, but also improve the surrounding environment to promote the building volume rate and population density. In

addition, to replace those good-located and high-benefit industrial lands is another way to optimize industrial layout and make the best use of the existing land to finally implement the purpose of intensive and efficient use of land.

### Conclusions

In the process of new urbanization, it calls for much attention to the intensive utilization of land for sustainable development. Along with the constantly increasing of urban area and continuous expansion of population, the purpose of intensive utilization for urban land is no longer just limited to the economic benefits, but also the holistic comprehensive development. By the method of two-way adjustments of government and market, city should adhere to the principle of putting high value to both stocks and increments to improve the efficiency of land use, and plan rational urban layout to do much better in formulating the overall city planning.

### Corresponding Author

Tingting Xu, School of Public Administration, Southwest Jiaotong University, P. R. China. E-mail: 15982261412@163.com. Address: Room 0403, Floor 4, Building 0, No. 111, Nor. Sect. 1, 2<sup>nd</sup> Ring Road, Jinniu District, Chengdu 610031, P. R. China

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