

Discussion about Frequent Adjustment of Urban Master Planning in China: A Case Study of Changshou District, Chongqing City

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Abstract—Since the reform and opening, the urbanization process of China has entered a rapid development period. In recent years, the authors participated in some projects of urban master planning in China and found a phenomenon that the rapid urbanization area of China is experiencing frequent adjustment process of urban master planning. This phenomenon is not the natural process of urbanization development. It may be caused by different government roles from different levels. Through the methods of investigation, data comparison and case study, this paper aims to explore the reason why the rapid urbanization area is experiencing frequent adjustment of master planning and give some solution strategies. Firstly, taking Changshou district of Chongqing city as an example, this paper wants to introduce the phenomenon about frequent adjustment process in China. And then, discuss distinct roles in the process between national government, provincial government and local government of China. At last, put forward preliminary solutions strategies for this area in China from the aspects of land use, intergovernmental cooperation and so on.

Keywords—Urban master planning, frequent adjustment, urbanization development, problems and strategies, China.

I. INTRODUCTION

SINCE the reform and opening of China, the urbanization rate is growing fast with the development of economy. With entry into the “international community”, China is undergoing the rapid influx of foreign capital and expansion of domestic and foreign markets. And there are positive signs of rapid growth in China's Urbanization: a substantial increase in investment in urban infrastructure and urban mode expanding dramatically [1]. Since the beginning of this century, urbanization of China has entered a much more rapid advance period. China has fully entered “the era of urban”: the urbanization rate reached 54.77% in 2014 and the urban resident population is almost 750 million [2]. As we all know, urbanization is a mighty engine to maintain sustained and healthy economic development, a strong support to promote the coordinated development of the region, and a basic power to promote social progress. On the surface, accelerated urbanization will lead to continuous expansion of city scale and increasing population. As the first level of urban and rural planning system of China, the master planning of urban which has legally binding effect is the tool for urban management

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department to control and guide urban development. Its purpose is determining the direction of urban development, control the scale of urban land, delineation the city growth boundary and reasonable forecast of urban population scale.

According to several case studies, the cities are in rapid urbanization area are experiencing frequent adjustment of urban master planning. In accordance with requirements of “Urban and Rural Planning Act of China”, the implementation period of urban master planning should be 20 years which means urban master planning should guide effectively the development of cities within 20 years [3]. But right now, some cities of China adjust the master planning within 10 years or five years, even in some cities only one year. Such frequent adjustment will limit the function of urban master planning as development guidance. It also can make the legal effect of master planning losing credibility. This paper wants to focus on frequent adjustment of master planning in China, combined with the adjustment process of Changshou district, Chongqing City, analyze this process, and put forward some preliminary strategies.

II. PHENOMENON: FREQUENT ADJUSTMENT OF MASTER PLANNING- A CASE STUDY OF CHANGSHOU DISTRICT

There is a phenomenon: “Master Planning of Beijing (2004-2020)” was approved by the State Council of China in 2005 [4]. The planning will basically achieve the objectives by 2010 and began to make the adjustment in 2014. The “Master Planning of Chongqing (2007-2020)” was approved by the State Council of China in 2007, and will begin to make the adjustment in 2014 [5]. Like Beijing and Chongqing, many big cities in China are experiencing frequent adjustment of their master plan. But the adjustment of master planning is more concentrated in the rapid urbanization of the area around big cities. Such as Changshou district, Bishan district, Qijiang district which are around the main city of Chongqing in recently have experienced many times adjustment work. Since the authors has been involved in the formulating process of master planning of Changshou district in the past six years and get a lot of data, so the next part will take Changshou district for an example to analyze this phenomenon.

The master planning of Changshou district was approved by the Municipal Government of Chongqing in 2002. It should be utilized until 2020. But, from 2002 to 2013, it experiences adjustment for four times. The adjustment included urban land use, population size and urban land indicators in 2007 and 2015. And it included urban land indicators in 2012 and 2015 (see

Table I).

TABLE I
ADJUSTMENT OF MASTER PLANNING OF CHANGSHOU DISTRICT

| Year | Version Name of master plan | Orientation of urban development | Urban land use scale | Urban population scale | Urban land use index |
|------|---|----------------------------------|----------------------|------------------------|----------------------|
| 2002 | "Urban master planning of Changshou district, Chongqing City (2002-2020)" Version of 2002 | Yes | Yes | Yes | Yes |
| 2007 | "Urban master planning of Changshou district, Chongqing City (2002-2020)" Version of 2007 | No | Yes | Yes | Yes |
| 2012 | "Urban master planning of Changshou district, Chongqing City (2002-2020)" Version of 2012 | No | No | No | Yes |
| 2013 | "Urban master planning of Changshou district, Chongqing City (2013-2025)" Version of 2013 | Yes | Yes | Yes | Yes |
| 2015 | "Urban master planning of Changshou district, Chongqing City (2013-2025)" Version of 2015 | No | No | No | Yes |

"No" means this version has not changed compared with the previous version; "Yes" means this version has changed compared with the previous version; of the program is compared with the previous version of the change

A. The Main Reason of Adjustment about Master Planning in 2007 and 2012

From 2002 to 2007, "Urban master planning of Changshou district, Chongqing City (2002-2020)" (Version of 2002) effectively guided the development of urban and rural construction, and the indicators are also executed according to the requirements of this planning. But according to the requirements of the state and local government, three major industrial projects which are Germany BASF, Refinery integration project and Chongqing Steel Group need settled in Changshou district. The industrial land predicted by the version of 2002 planning has been inadequate. So it needs to increase land use scale, while industrial projects also need to absorb new employment population. Therefore, in accordance with the land demand and population needs, the master planning made adjustments in 2007 that the land use scale increased by 10 sq km and the population increased by 20,000 [6].

By 2011, according to industrial development arrangements of Chongqing municipal government, several major projects will be arranged in this district, such as the expansion of Chongqing Steel Group, Paper-Making Project, Germany BASF MDI and Vocational College of Chemical Engineering, so that land use needs had to be adjusted. Therefore, the version of 2012 planning made adjustments about land use, but did not breakdown the total amount of land.

B. The Main Reason of Adjustment about Master Planning in 2013

In 2010, the chemical industry zone of Changshou district officially upgraded to the national economic and Technological Development Zone, which will attract more large enterprises settled and produce a significant impact urban development direction and spatial structure. With the expansion of urban industrial land scale, the need for construction of urban living land has also increased sharply. At the same time, a series of major public infrastructure construction such as Chongqing-Lichuan railway, Chongqing-Wanzhou railway and Changshou north railway station make the demand for land become even more intense. By the end of 2012, the status land scale of Changshou district is 48.31 sq km, which is 66.22% of the planning target. Among it, the industrial land complete 81.36% of planning target and residential land is 92.44% (see

Fig. 1) [6]. In addition, industrial development led to the lack of public green space, industrial protective green land and public leisure square. The green space is only 3.68% [7] of the total land with a large gap between the national standard value. The growth of urban land use is too fast, which has caused lack of functional land and obstacle of urban development.

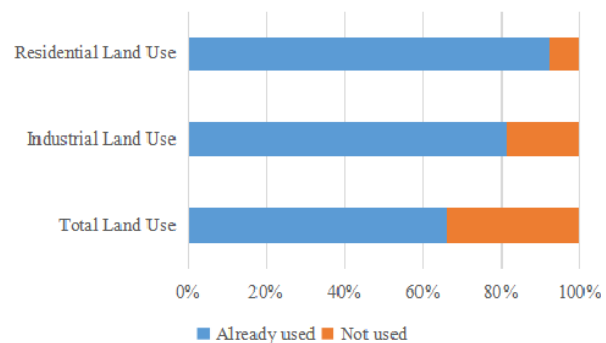


Fig. 1 The urban land use proportion of Changshou district in 2012

The version of 2002 planning did not arrange the corresponding spatial response system and cannot meet the needs of land use. Therefore, in order to satisfy the needs of industrial development of Chongqing City, but also to ensure the healthy development of Changshou district, the master planning has been reenacted. This version of planning made a major adjustment about urban land use scale, population size, urban nature and direction of urban development till the year of 2025. The urban construction land expanded from 65 sq km to 89.5 sq km [7].

C. The Main Reason of Adjustment about Master Planning in 2015

After the planning version of 2013 was approved by Chongqing Municipal Government in May 2014, the master planning of Changshou district was adjusted in 2015, a lapse of only one year. The adjustment in 2015 was due to the introduction of a lot of major industrial projects. Although this adjustment did not increase the size of land, it did adjust the use of land.

D. Summary of the Case Study

Taking Changshou district as an example, this section generally summary the process of frequent adjustment of master planning. Frequent master planning adjustment process not only enhances the difficulty of planning and management, but also its complex review process waste a lot of human resources. From the case of Changshou district, we can provide a summary the influence factors of frequent adjustment of master planning. These factors include government policy, major projects introduction, population changes, administrative division adjustment, major infrastructure and public facilities construction, green space construction and so on. But in the final analysis, all the factors are pointed to urban construction land (see Fig. 2). When one factor changes, urban land use may also be faced with change; the current planning and management system of China is actually greatly constrained by urban development. But in the rapid urbanization area, this constraint seems to be a hindrance.

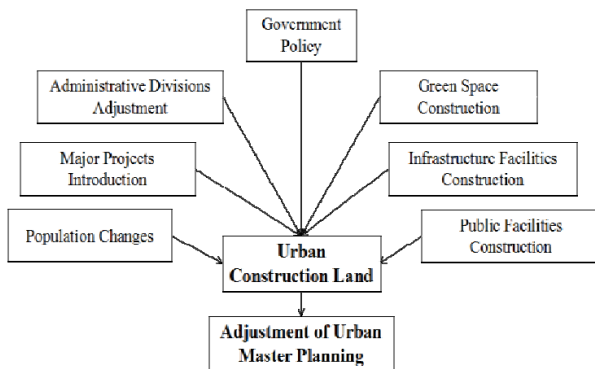


Fig. 2 The main factors of the adjustment of the overall urban planning

III. ROOTS: PASSIVE RESPONSE OF LOCAL GOVERNMENT

As can be seen from the case of Changshou District, when the government at a higher level assigned projects or major infrastructure investment to local government the master planning was faced with adjustment or recompilation. We can find many similar cases around China: the introduction of China-Singapore Eco-City project make Binhai district of Tianjin to adjustment master planning; the introduction of China-Singapore industrial zone make Suzhou to adjustment master planning; According to Chinese law, Urban master planning should predict the development for at least 20 years, which means a version of master planning has its role within 20 years without making major adjustments. Frequent adjustment shows shortage of land use index at these regions. Behind this, it is different development goals between local government and national government.

Master planning is made by local government and the national government has the authority to approve. During making master planning, the local government will only focus on the development of the city from their own point of view.

But, the national government and provincial government want to promote the development of industry under economic globalization. Thus, they need obtain land from local government who has the right to carry out master planning (see Fig. 3).

A. Leading Power One: Innovation and Development Requirements of the National Government

After the reform and opening up, China has been involved in a tide of globalization. As a developing country, China is still facing huge inflationary pressure, such as a lack of innovation and technology. These issues make China lose competitiveness under the background of Globalization. In order to put China in an advantageous position in the process of globalization, the Chinese government has put forward a series of development strategies about scientific and technological innovation in recent years. In 2015, the Chinese government put innovation at the top of the country's development priorities. In order to enhance the core competitiveness of China, the national government has to promote scientific and technological innovation continuously.

At the same time, globalization brings about flow of production factors. It is a historical opportunity for developing countries, because they can get international investment [8]. The most outstanding performance of the flow of production factors is technology and industrial projects flowing from developed countries to developing countries. Advanced manufacturing, technology companies and research institutions move to developing countries. The flow of factors has brought opportunities for industrial development in developing countries, and thus, more industrial projects move to these countries (see Fig. 4).

Thus, to address intense international competition, the national government of China should improve the ability of science and technology innovation to get involved in global competition. As a policy designer, the tasks of national government are to develop strategies, encourage the development of new industries and introduce new technologies and new projects. But specific implementation of projects need land resources. Although the Chinese government has formulated regulations of urban planning management and land management, it does not directly manage the land. The use of land resources needs the support of local government. The national government assigns the projects to local government. And local government determines the use of land resources for new projects through developing and implementing master planning.

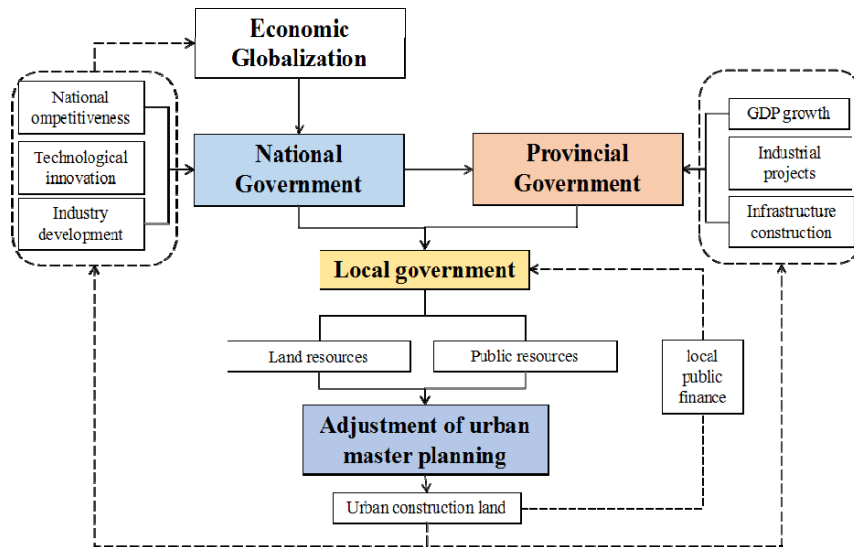


Fig. 3 The relationship between all levels of government in the process of urban master planning adjustment

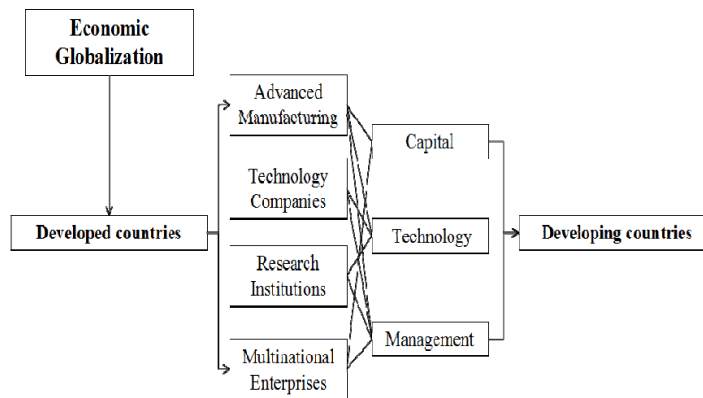


Fig. 4 The flow of elements in the context of Globalization

B. Leading Power Two: Providing Public Product Requirement of Provincial Government

National government sets the direction of macro development and major strategies. And provincial governments are concrete executors of national strategies. More importantly, according to the specific situation, resource conditions and regional conditions of the provincial administrative units, the provincial governments develop more specific development strategies and strategic objectives for local cities and provide public products and services through the construction of regional major infrastructure and public facilities. Improving and enhancing the public service is the most obvious characteristic of Chinese urbanization in this era [9]. On one hand, provincial government meets the public demand of residents through the provision of infrastructure facilities and public services. While on the other it promotes the development of real estate in order to boost the development of the local economy.

In addition, the provincial government is also facing regular performance assessment from the national government; the GDP index being the most important. In order to promote the

growth of GDP, the provincial government will promote the development of industry through industrial restructuring and upgrading. The purpose is to foster economic development in order to achieve GDP growth.

But, whether the providing basic and public facilities, or the promotion of industrial development, the provincial government needs land to construct those projects. Provincial governments have a right to manage and approve land. However, they also do not directly manage the land. So the provincial government will ask the local government to adjust planning to obtain land.

C. The Passive Response of Local Government: Adjustment Planning Frequently

Since the reform and opening up, many policy of China provides greater self-determination rights for local governments. Especially the reform of the financial system in 1994, the national government gave independent rights for land-use to local government [10]. And the formulating and implementation of master planning is also managed and controlled by local governments. Similarly with provincial

governments, local governments also have to face the GDP assessment, so that they will promote the development of local industries through attracting investment. But the local government does not have global vision and long-term strategies as national governments. Therefore, when formulating the master planning, local government will consider industrial development, infrastructure and public facilities from their own point in a single planning cycle. They will formulate the population size, land size, urban development direction and urban land layout in accordance with the city's specific characteristics and requirements.

However, in the process of globalization, each city is not an independent economic or cultural unit. In this process, if local government is not consciousness of globalization, they can only passively accept the series of changes. This passive acceptance is also reflected in master urban planning of those cities. The local government only considers recent developments and does not take a lot of variables changes under globalization in the process of preparation master planning. And local governments need to provide sufficient land when national government is assigning projects and provincial government constructing infrastructure and public services. When the master plan does not meet all these requirements, local governments need to make adjustments to master urban planning. If there is a large difference in land use, the master planning will need to be reprogrammed. Thus, that the national and provincial governments are under pressure from globalization, which will eventually lead to frequent adjustments of master urban planning by local government.

IV. STRATEGIES: INTENSIVE AND FLEXIBLE DEVELOPMENT

From 2015 to 2016, Chinese government has presented a series of important strategies and decisions on urban construction. These strategies put forward a lot of new requirements to urban planning and management. Green, intensive, flexible and sustainable become the keywords of urban planning at the present stage. For the issues of adjustment of master planning frequently, first of all, all levels of governments should change concept of development and integrate into the development of globalization actively. At the same time, master urban planning should strictly control the urban growth boundary, control land use moderately and flexibly, increase the efficiency of land use and strictly control the project access (see Fig. 5), in order to minimize the frequency of adjustments, and thus save on manpower and material resources.

A. Change Concepts and Enhance Communication of Government at All Levels

Local governments should be aware that each city has been fully integrated into global competition. The local government should establish an international perspective and fully predict the possible major changes as well as the impact of urban development in the next 20 years when they formulate master planning. In addition, governments at all levels should strengthen communication, establish communication mechanism for major projects and infrastructure construction

and ensure the related project information can be timely feedback to local governments.

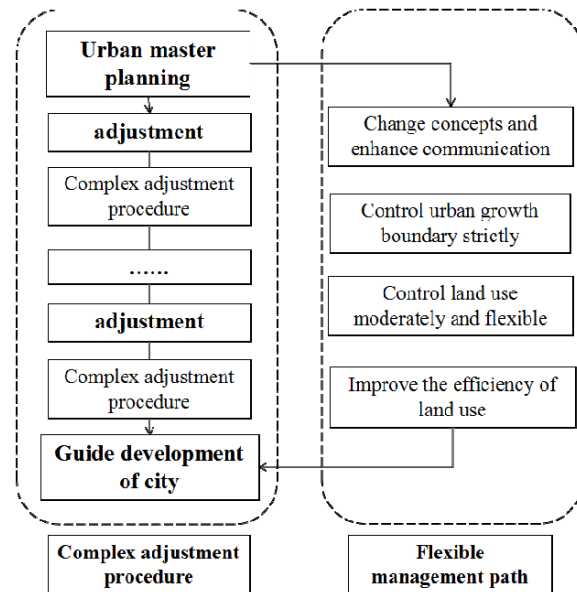


Fig. 5 Strategies for reducing the frequent adjustment of urban master planning

B. Control Urban Growth Boundary Strictly

"Urban and Rural Planning Act of China" clearly put forward that it is a strict restriction on the establishment of the new district and urban boundary expansion. Urban master planning should gradually turn from expansion planning to define urban boundary planning [11]. At the same time, "Regulations on urban planning formulating of China" also require that urban master planning need to be clearly defined four areas boundary and management measures which are construction-prohibition area, construction-restricted area, construction-suitable area and built-up area. The first principle of urban master planning is to set the boundaries of urban spatial growth in accordance with the requirements of national laws and technical standards strictly, in order to protect the ecological space and farmland. However, in the process of urban master planning, the boundary of urban spatial growth is defined by the administrative area, and the space for urban construction is not enough. In order to avoid the frequent adjustment of master planning and obtain sufficient land for the future urban development, the delimitation of the urban spatial growth boundary can be properly expanded without using ecological and cultivated lands.

C. Control Land Use Moderately and Flexible

The master planning of the present stage has been considered for compatible land use. But it is mainly compatible between residential and commercial or industrial and warehousing. The urban master plan should attempt to set flexible space for land use. Flexible control is mainly aimed at the nature and index of land use. Under the circumstances of meeting the requirements of laws and not affecting the urban environment and safety of

the city, master planning can be clearly defined so that the land use can directly be changed. In addition, the division of land can also be an elastic partition which is that land can be divided to the smallest unit. Thus, to meet the different requirements of the city, land use becomes more flexible.

D.Improve the Efficiency of Land Use

At present, the efficiency of residential and industrial land use is not great. In master planning we can evaluate residential land and increase the volume rate appropriately. In order to achieve the purpose of improving the efficiency of industrial land use, master planning can suggest the direction of industrial development, combined with related industries and limit the low productivity of industry. Local government should establish project evaluation system, in order to control the input and output ratio, the contribution of scientific and technological innovation and the evaluation of environmental impact strictly; thus, improving the efficiency of land use despite limited land resources.

V. CONCLUSION

This paper analyzes the phenomenon of frequent adjustment of master planning in rapid urbanization region of China. Taking the Changshou district of Chongqing as an example, this paper analyzes the adjustment process and then infers the factors that affect this process. The reason of frequent adjustment is that national and provincial governments do not have the same goal about urban development. In order to reduce adjustment, this paper presents four strategies which are enhancing communication of government at all levels, controlling urban growth boundary strictly, controlling land use moderately and flexible and increasing the efficiency of land use. This discussion does not attempt to change current urban planning laws and systems of China, because it will be a complex process. However, the four strategies mentioned in this paper may have a certain reference and solve some urban planning problems in current China.

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