

Entangling Land-use Regulations in China's Urban Growth

—The Case of Guangzhou

1. Introduction

China's rapid urban growth has been classified as urban sprawl by many Chinese scholars (see, e.g., Fung, 1981; Lin, 2001; Zhang, T. 2000). However, it is suggested by western scholars that sprawl should be viewed as a land-use pattern with low density, leap-frog development, and less open space in distinct spatial dimensions (Burchell et al., 1998; Galster et al., 2000). The urban sprawl showed different patterns in China's megacities. There are many high-density development and open space in large scale in peri-urban areas. The low density pattern was seen at the town/township level or village level which is mainly associated with local development. So the urban growth pattern would rather be defined as a combination of urban spill over (USO) and local urban sprawl (LUS).

USO: refers to those large-scale 'development zones' (State/province level) erected by municipal governments, which are well-equipped with urban infrastructures, to attract inward industrial investments. Residential facilities and office buildings are also developed accordingly with the employment growth in these areas. Another drive of USO is proliferated residential development in the suburban areas, which formulated gated communities.

LUS: refers to various scales of 'development zones' erected by governments at district level, town/township level, and village level, those are often discontinuous from main urban area. Large amount of immigrants are employed in these zones, accompanying with illegal constructions proliferated in surrounding villages that gradually become sprawling migrant enclaves. These places still physically look like villages and lack urban infrastructure, while most of its residents work in factories and service sectors.

The key feature of USO and LUS is that the changes in land-use right to make urban development and infrastructure provision possible. Numerous studies have dealt with the individualization and commoditization of China's customary land rights (see, e.g., Zhu, 2005; Zhang, 2000; Ho and Lin, 2003). In existing literatures, however, land reform, land-use planning, urban planning, socioeconomic development planning and farmland protection policy are not well connected. And the conflicts regarding land-use regulations seem to be a largely under-evaluated factor. This article aims to use 'land-use regulation' as one of the basic means of urban growth to explore why there are different forms of land-use institution, what interactional effects of which have on urban topology, what further influences these effects will bring to urban sustainable development. The following section briefly reviews the institutional framework that governing the process of USO and LUS. Intra-conflict among land-use regulations are interpreted with the case of Guangzhou. In the end, recommendations are made for future policy reform.

2. The dual construction-land regulatory system and urban growth

Land administration law (LAL) stipulates that all the urban land shall be state-owned, and the land in the rural and suburban areas shall be collective-owned. The construction land used for town/township enterprises, rural residence and rural public facilities are collective-owned; urban sectors have to use state-owned land, if urban development needs to use collective-owned land, it must be converted to state-owned through requisition, then the 'State' allocate or transfer the land-use rights to land-users. Thus, a 'dual-track' system of construction-land comes into being: (i) the price of urban state-owned land rise quickly, (ii) the collective construction land cannot enter the urban land market directly. City governments, who are the agents of the State, control the urban use rights of collective land. As a result, in urban expansion process, stakeholders scramble for the construction-right of collective land, and formed a spatial consequence of that 'USO' and 'LUS' is coexisting.

(1) City governments. They have two regulation tools to compete with. The first is land-use planning, which divided all lands into three categories of agriculture lands, construction lands and unused lands (Tang et al., 2007). Thereinto, construction lands are further divided into urban and rural. LUS and USO must in accord with the land-use planning. The second is urban planning. Traditionally, urban planning does not include the arrangements of rural construction land. However, in order to reducing the negative externalities of LUS to USO, the rural land where are defined by land-use planning as future rural construction areas are also under the administration of city planning.

(2) Collective organizations. First, the land acquisition for urban construction needs to be recognized and assisted by related collectives. In return, municipal governments approve additional conversion from farmland to rural construction land for the collective proportionally to the amount of requisition for urban construction. These are known as Collective Economic Development Land. Second, in order to guaranteeing future USO or protecting farmland and environment, city governments protect many rural lands through the tools of land-use planning and urban planning from construction-use. Stimulated by the development benefit, however, collective organizations usually carry out various illegal construction or illegal land transactions.

(3) Peasants. First, they maximize the use of the allocated residence land. Lots of rural houses were built from the originally two-stories to five or six, even to 10 stories afterwards, forming crowded 'urban village' and making the peasants good rent income. Second, peasants would build houses on their contracted farmland illegally. The same happened to other informal buildings and structures, such as simple huts, pigsties, etc. the common reason to construct more than necessary is that ground attachments will be compensated too according to the land requisition policies.

3. Entangling land-use regulations and urban growth: the case of Guangzhou

3.1 Background

In the 1980s and 1990s, Guangzhou, one of China's largest megacities, experienced rapid development and urban growth. This had made the urban land-space and the transport infrastructure increasingly insufficient for further urban development. The whole urban spatial structure were locked in a 'embarrassed' situation (Wei et al., 2006): 1) the cost of urban redevelopment and renewal in the center area are very high; 2) large amounts of the land-space that surrounding the center area have been occupied by industrial developments (development zone), so it is difficult for the urban center to further outspread (Fig. 1). Industrial developments had incurred increasing population density among the urban central areas. In 1990, the area which had a population density more than 10,000 people / km² was only 65.2 km²; it had increased to 153.6 km² in 2000.

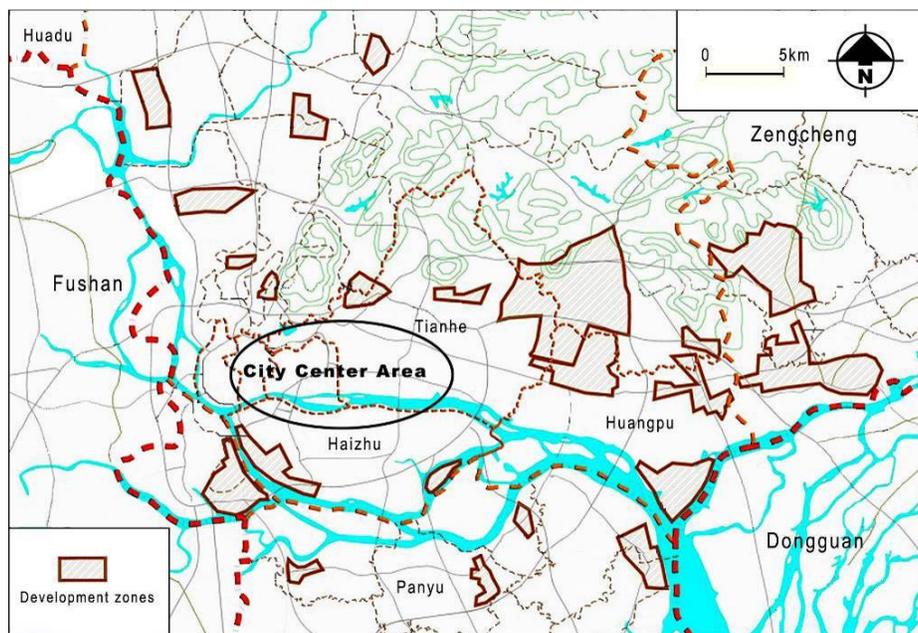


Fig. 1 distribution of development zones in 2003
Source: Guangzhou City Planning Bureau

In June 2000, Guangzhou annexed Panyu in the south and Huadu in the north, changed these two county-level cities into its municipal districts. This expansion increased the jurisdiction area of Guangzhou from 1443.6 km² to 3718.5 km². In addition, there are another two subordinate county-level cities, Zengcheng and Conghua, in the north of Guangzhou, whose municipal services are independent. So the metropolitan area of Guangzhou shall be 7,287 km², including three municipal jurisdictions. This opportunity raised the need to consider

a new urban spatial strategy beyond the previous administrative boundaries. However, the conventional master-plan approach simply takes too long to provide guidance for city construction. Therefore, In June 2000, Guangzhou City Planning Bureau invited five institutes to submit a scheme for Guangzhou Urban Strategic Development Plan respectively. When five plan scenarios had been submitted in September, the Guangzhou Municipal Government invited 13 nationally well-known experts, together with the CCP Guangzhou Committee, municipal Peoples' Congress, and municipal Political Consultation Committee, senior officials of the Ministry of Construction, and relevant local government departments to evaluate the planning scenarios. Based on the evaluation, established "Guangzhou Overall Urban Strategic Plan" (See, e.g. Wu, 2007).

The new spatial strategy was summarized as "expanding the south, optimizing the north, advancing the east and coupling the west". Under the guidance of the strategy, the main direction of urban expansion after 2000 is the South, the North and the East. Spatial Strategy tries to attract domestic and foreign capitals through large scale infrastructure investments, create a 'polycentric and networking' spatial structure. A number of specialized urban growth centers were planned, and strategic plan also identified a transportation system that is expressway-oriented and subway-oriented, or named 'double speed' system.

3.2 USO vs. LUS

After 2000, Guangzhou has experienced further rapid urban growth, which was more prominent in the new jurisdiction areas. Comprehensive land-use survey was carried out in 1996, 2004. The land-use change depicts that the new added construction lands are mainly distributed in Baiyun, Panyu, Huadu and Zencheng. Nevertheless, field research show that the growth direction has changed distinctly: (i) During 1996-1999, the dominating growth centers are in the north fringe (mainly of Baiyun) and the east fringe (mainly of Tianhe and Huangpu) of urban centre; (ii) During 2000-2004, the Southern (Panyu), the northern (Huadu), and the eastern area become dominating growth areas, which are mainly influenced by a series of important projects, such as the new airport, Guangzhou University City, Nansha deepwater port etc. (Fig. 2).

The total amount of built area in Guangzhou had increased from 979.85 km² in 1996 to 1324.43 km² in 2004. Totally, 344.58 km² were increased in eight years, with an annually increase of 43.07 km². The coexistence of USO and LUS can be clearly observed in the land-use categories (Tab.1):

Table 1 : the distribution of different construction land in 2004 (km²)

| | Main urban centre | Huadu | Panyu | Zencheng | Conghua | Total |
|----------------|-------------------|--------|--------|----------|---------|---------|
| Urban | 339.30 | 51.95 | 69.55 | 36.80 | 12.21 | 509.80 |
| Town/ Township | 38.55 | 48.76 | 122.14 | 73.18 | 23.90 | 306.52 |
| Village | 96.56 | 48.73 | 88.06 | 65.10 | 48.92 | 347.38 |
| Other | 55.14 | 46.84 | 17.53 | 18.92 | 22.30 | 160.73 |
| Total | 529.55 | 196.28 | 297.28 | 194.00 | 107.32 | 1324.43 |

Source: GLAB (Guangzhou Land Administration Bureau).

(1) By the end of 2004, in the total area of built land, city construction land is 509.80 km², accounts for 38.49%; Town/township construction land is 306.52 km², accounts for 23.14%; Village construction land is 347.38 km², account for 26.23%; other construction land, including lands used for external transport, independent mining, etc., is 160.73 km², accounts for 12.14% (Fig. 3).

(2) Among the new added construction lands increased in 8 years, city construction and town/township construction had increased 258.48 km², accounts for 82.85%. Village construction land has increased 19.60 km², accounts for 5.69%. Other construction land had increased 39.50 km², accounts for 11.46%. Compared to that in 1996, the farmland and the unused land had reduced 286.46 km² and 51.62 km² respectively in 2004.

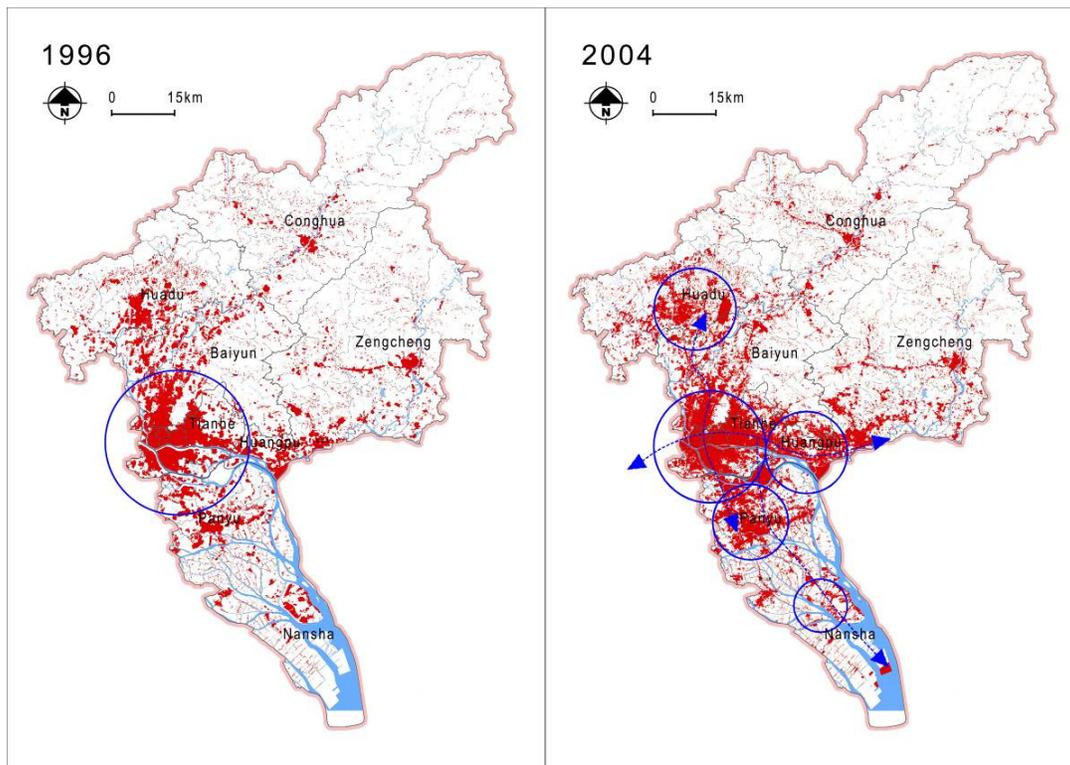


Fig. 2 distribution of construction land in Guangzhou metropolitan area
Source: Guangzhou Land Administration bureau

(3) Construction lands mainly distributed in the new jurisdiction areas. The construction land of main urban centre (jurisdiction area before 2000) is 529.55km², accounts for 39.98% of all the construction land; The area of two new districts, Panyu and Huadu, is 493.56 km², accounts for 35.27%; Though the jurisdiction area of two subordinate county-level cities, Zengcheng and Conghua, accounts for 50.71% of the Guangzhou metropolitan area, whose construction land are only accounts for 24.75%. Outside the urban center, USO and LUS interlocked together and forming a typical hybrid land-use phenomenon (Fig. 4).

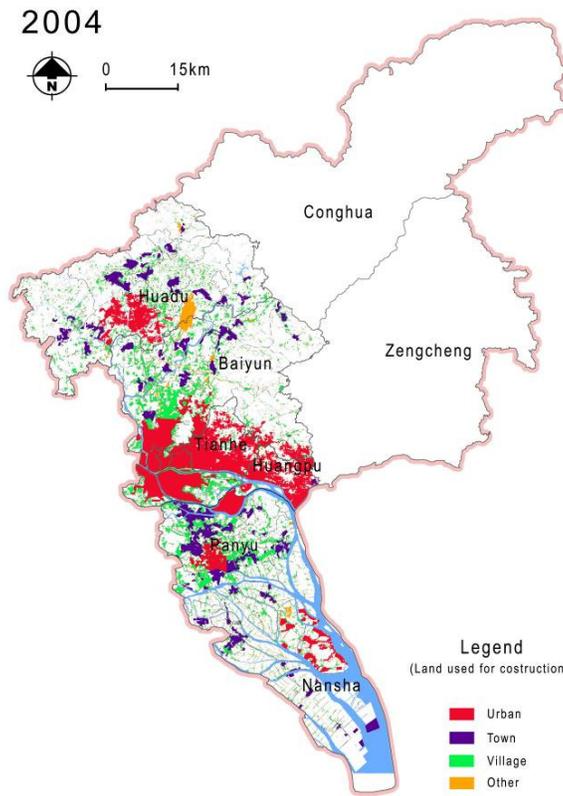


Fig. 3 distribution of construction land in Guangzhou municipal area
 Source: Guangzhou Land Administration bureau

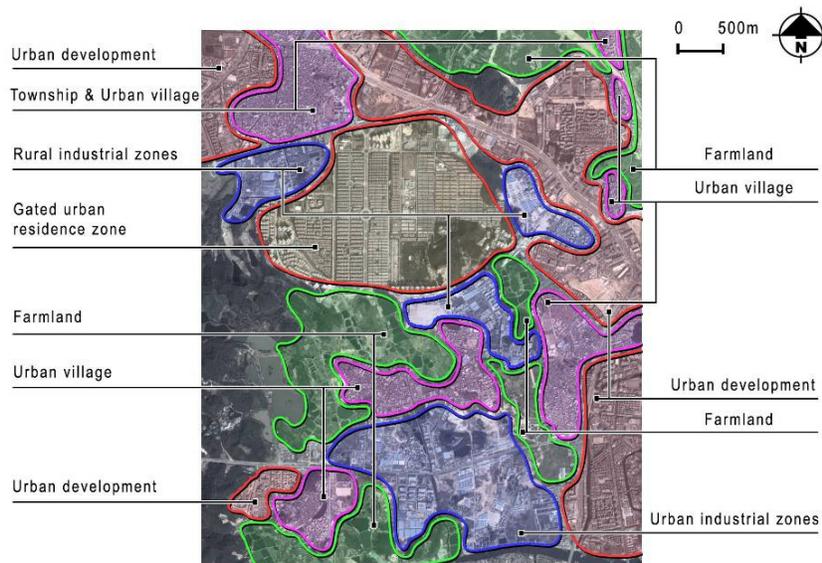


Fig. 4 a typical hybrid land-use phenomenon in Panyu district, Guangzhou

3.3 Entangling land-use regulations

With the rapid urban growth, both land-use planning and urban planning have been out of control: 1) land-use planning. According to the land-use plans stipulated in 1997, the area of farmland protection shall not be less than 1,597.32 km² in 2010, but there were only 1,469 km² left in 2004; the total construction land area shall not be more than 1,332.71 km², and village construction land shall not be more than 166.4 km², but the actual figures had already been amounted to 1,324.43 km² and 349.68 km² in 2004. 2) Urban planning. The first is the breakthrough of population control. According to the City Master Plan (amended in 2001), population of the whole metropolitan area shall not be more than 12.25 million in 2010. However, it has already reached to 12.0 million in 2005 (GASS, 2006). The second is the breakthrough of planned urban and town/township construction lands, Master Plan stipulated that the total amount of which shall not be more than 785 km² in 2010, whereas the actual amount had already over 800 km² in 2005.

Thus, both planning all tends to strengthen the construction land control, but different methods are employed respectively. This has caused increasing conflicts between different planning administrations. Taking Panyu as an example: (Panyu district was further divided into two districts of Nansha and new Panyu In 2005)

(1) In accordance with the status quo of farmland distribution, land-use planning designate farmland protection zones into each village. However, it was conflicted with the urban spatial structure in urban planning;

(2) To circumscribe LUS and guarantee USO, city government strictly controlled many lands outside the urban centre through urban planning, in which, district and town/township governments do not have the authority of planning management. E.g., In Panyu district, land controlled by city government accounting for 61.7% of the total area in the end of 2006;

(3) When very important construction projects, promoted by city government, encounter obstacles from farmland protection, which could be approved by changing protection zones. Whereas, the collective organizations and peasants can not violate the farmland protection, which triggered more illegal rural constructions;

(4) According to rural land requisition policy, 10% of which shall be converted into Collective Economic Development Land. But with the limit of planning, the land for collective economic development can hardly be provided out. Thus, the activities of illegal construction are encouraged.

(5) For the district-level governments, they also need to draw urban planning to fulfill the needs of local development, but when the city government controls lots of land, they have to planning their future in the remaining land space. However, city government often cannot approve these planning in the cause of that will hinder future USO. So, to some extent, illegal rural constructions are indulged by the district-level governments, as to influence the 'up-down land-use control' with the reality of gradual development.

4. Institutional analysis

China's urban and rural land reforms have their political purposes respectively: (1) the former aims at promoting agricultural development, raising the income of peasants and guaranteeing peasants from losing their land. First, assuring sufficient quantity and quality of arable land through farmland protection management; Second, developing non-agricultural economy through rural construction land management to absorb surplus labor, and to improve collective organizations' financial capability of offering rural welfare; (2) The latter is to meet the requirements of market economy, mobilize local governments to manage urban land assets, and promote the intensive use of urban land. First, assuring urban expansion has lower land cost through land-use planning administration; Second, guaranteeing a good urban spatial quality through urban planning administration.

With the urban growth, USO and LUS have increasingly interwoven together: (i) formal urban constructions continually extend into rural areas, (ii) non-agricultural development in rural areas also makes these areas forming huge amount of informal urban construction. In this process, different land administrant intuitions increasingly conflicted with each other.

4.1 Land-use planning and urban planning

The conflicts between two planning are mainly incurred by the central government's farmland protection policies and economic development policies. Land-use planning prescribed the locations and the annual quantities of the land that could be used for construction. The key purpose is to protect farmland and to promote intensive land-use. Urban planning prescribed the land-use function arrangements. The key purpose is to fulfill the requirement of urban development and improve spatial amenities. However, the ideas of these two are not the same, as that land-use planning focuses on protecting the current farmland whereas urban planning focuses on meeting the future urban growth.

In the past decades, economic growth is a central task with priority at all government levels. Each government will formulate a five-year Economic Development Plan (EDP). Accordingly, urban planning shall arrange new land space to meet the economic target of EDP. Therefore, city governments often adjust or violate land-use planning according to urban planning. It has produced two consequences: (i) As local government eager to develop urban economy, land resources are consumed rapidly and wastefully, (ii) the rural lands occupied by urban development usually are the farmlands with high-quality. It is consider by central government that will endanger the food security of the State. Therefore, contradictions among different central-level policies are as follows: in order to encouraging urban economy growth, extensive urban spatial growth is prevailed with the connivance of central government. At the same time, in order to holding the bottom line of farmland, the sums of the land that can be used for construction are controlled strictly.

Over the past decade, the State had formulated "The Basic Farmland Protection Regulation" (1994) and the "Regulations for the Implementation of the LAL" (1999), and other policies and administrative documents to strengthen land protection. The points are as follows:

(i) farmland protection zones shall be designated explicitly, if the farmland in which is necessary to be transferred for construction use, which shall be approved by more senior governments, even the State Council, (ii) Ensure that 180 million MU (equal to 1/15 hectare) of cultivated land will not reduce at the total amount. This amount was assigned to each provinces and municipalities, and designated into every village through land-use planning, (iii) For each municipal government, the annual construction land amount is given, the exceed amount of farmland lost to conversion must be replaced by new farmland somewhere else. The act thus imposes a so-called 'dynamic balance (no net loss)' policy.

Thus, in rapid urbanizing regions, there are increasing conflicts between the two forms of planning management: 1) urban planning fails to adjust and rearrange the location of construction lands, for the land in the same territory not only include the land for urban construction, but also the land for 'Collective Economic Development' and 'rural housing'. If urban planning try to adjust or rearrange the built collective land, it will not only need to pay compensation, but also will consume the annual construction land quantum, so city governments are more willing to requisition the rural land with less construction; 2) the designation of farmland protection zones makes the construction lands ruled by land-use planning may not meet the requirements of urban planning, vice versa.

4.2 urban planning and planning management

Under the Planned Economy before 1980s, the main technical function of urban planning is to meet the spatial requirements of the implementation of the EDP, to "materialize national EDP". Compared with EDP, urban planning was in a subordinate position; this situation has not been changed yet.

However, before 1980s , the resources of economic development were mainly arranged and allocated by central government, local EDP was the continuation of national EDP, and city governments is the local executive deputies of national EDP. With the economic decentralization, local EDP now is dominated by local governments. Though the national EDP is still playing a 'guiding' role, but the local EDP contains more local-oriented factors. That is to say, the city governments become the direct promoters of local development, and tend to make coalition with capitals. This makes the function of urban planning changed: (i) conceptualize the urban future, (ii) Establishing urban spatial strategies to accommodate the development of selective industries, and initiate economic restructuring, (iii) Promoting the strategic infrastructure development to attract more capitals.

This function reorientation has brought increasing conflicts that are embedded in the urban planning system:

(1) Statutory master plan is out of control or being invalidated. Compared with the function reorientation of the planning, the master planning system has little changed: First, according to the method of master planning, all the urban land-use functions shall be arranged in the planning range. These physical arrangements for the future 15 to 20 years, however, lack the flexibility in dealing with market changes, and need to be readjusted

constantly. Second, in terms of planning management, master plan needs to be approved by senior government. For mega-cities, it must be approved by the State Council. The approval standards are that whether the plan is consistent with the national EDP and land-use requirements. This is a long technical and political process, often taking several years. Therefore, while the approval process is carrying through, the city's spatial growth is still rapidly ongoing. Many cities have consumed the land amount in a few years that should be used for at least 15 years scheduled in the master plan.

(2) The conflicts between urban planning levels. In the absence of approved or suitable master plans, in order to have the legitimacy of spatial administration, the city governments employed a new planning tool, called the 'strategic planning' or 'concept planning'. Although this new planning form has not been formally recognized by central government, local governments acquired the legitimacy through the consultation of authoritative expert and the approval of the local council. So it has played a role of 'quasi-master planning', which is generally worked out with annexation and adjustment of administrative divisions, covering the areas which originally belong to different municipal territories. The new spatial planning also means rearrangement of original spatial interests. Because the districts newly merged have their own urban plan (may be approved), which are formulated in accord with the interests of local communities, and now will be changed according to the new strategy. The fact is that city governments are competing for the land resource from town/township governments or the local communities through the tool of strategic planning. But these 'quasi-master plans' will not be fully complied with by sub-level governments and rural communities.

5. Conclusions

This paper reviews the dual construction land regulatory system in China's urban growth. We argue that, although the land reforms promoted China's economic growth and urbanization, under the entangling land-use regulations, further urban growth of megacities has become increasingly constrained spatially. Specifically, the conflicts among different policies all focus on the construction right of rural land, and incur intense competitions among related parties. Thus, not only the transaction cost of land-use rights transfer and land administration was increased, but also the urban growth of megacities was distorted. Briefly, entangling land-use regulations will hinder the sustainable development of the whole urban society. The key institutional issue here is that: who exclusively hold the right of converting collective land into urban use is not clearly defined. The LAL stipulated that this right is exclusively belongs to the State, however, in practice, local governments are the deputy of central government; meanwhile, despite the rural construction land shall not enter the urban land market formally, collective organizations and peasants can convert the farmland into rural construction land, as to forming numerous informal urban transformations and benefiting in the process of USO and LUS.

Whether or not to define the property rights clearly depend on the will of the State and central government, but the political plight lying here is that: with a high rural population density, rural land reform has already made the land property extraordinarily fragmented. Whereas, economic growth is still the primary task of central government, so, if the conversion

right of rural land were designated to each rural household, the formal urban growth will suffer unbearable cost, such as that of land assembly, insufficient of cheaper land price to attract industrial capital, and so on; If the right were defined to city governments exclusively, the farmers, poorly educated, are likely completely lost capital to make a earning, which will inducing social instability. Therefore, in order to ensure the economic development and social stability, as well as to reduce land-use waste, central government can only continually adding new institutional constraints on the land-use, and admitting the existing benefit structures which were formed in the past reform.

The paper argues that, the spatial integration of land-use are neglected to a large extent in China's urban growth, such as the disorder of land-use functions, the low quality of urban space, the increasing social segregation, etc. Therefore, a more effective approach would be a policy reform program as follows: (i) Unified land-use regulations spatially. Farmland protection zones shall be relocated according to the spatial structure in urban planning; (ii) admitted the property rights of exiting rural constructions, whereas further illegal construction shall be controlled strictly. So the urban conversion right of collective land shall be marketized, as allow collectives and peasants to lease rural land for urban use on competitive market. But the land-use functions shall be consistent with urban planning, (iii) For the right holders whose lands are limited to farmland use, city governments shall set up an unified transfer payment system to compensate their potential land conversion benefits, (iv) under the spatial strategy , community planning reflects local needs shall be formulated and implemented at the same time, which shall be integrated with socioeconomic development, include the formal and informal urbanized land. Accordingly, spatial strategy shall be constantly adjusted with the actual spatial development. That is to say, the planning paradigm shall be reoriented from 'up-down' model into a combination of 'up-down' and 'bottom-up' model, (v) and, to some extent, central government shall relax the farmland protection polices in large urbanized areas, otherwise all these policy suggestions mentioned above will hardly to be operated.

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