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## How to Draw on the Urban-rural Space Evolution Experience of Foreign Metropolis for Xi'an?

### Lufeng DUAN \*

Institute of Industrial Economics, Xi'an University of Posts and Telecommunications, Xi'an 710061, China

Abstract "Space" is the place where people take social and economic activities, as well as the carrier supporting any public life style and rights and acts. Urban and rural places are the two main parts that comprise the regional economic system, and only when they are developed harmoniously can the overall economic optimization and social welfare maximization come true. On basis of analyzing the experience and mechanism of urban and rural spaces of London, New York and Tokyo 3 typical international metropolitan area and learning from their development experience, the study has proposed development strategies for the integration of urban-rural space of Xi'an City according to its current development situation.

Key words Metropolitan area, Urban-rural space, Integration

### 1 Introduction

Metropolitan area is the urbanized area taking metropolises as its center, as well as keeping close social and economic relationship with their adjacent areas. In the period of urbanization and rapid development of economy, metropolitan area in China has come into shape dramatically, and it has become the space carrier closely related to residents' daily lives. "Space" is the place where people make social and economic activities, the carrier supporting public life forms and rights and acts. With the development tendency of economic globalization and global urbanization, competition between metropolises is not just between single metropolis, but increasingly between metropolitan area that has taken metropolis as its center. Development Planning on The Central Shaanxi Plain -Tianshui Economic Area approved and implemented by the State Council in June, 2009 has made the vision that Xi'an moves toward internationalization upgrade to a national strategy. And Xi'an has entered to a period of rapid development in industrialization and urbanization, and its urban-rural space has changed dramatically. Learning from evolution of urban and rural space in international metropolises is conducive to further implementing the strategy of the Development of Western Regions, as well as developing Big Xi'an, driving Big Central Shaanxi Plain and leading the Big Northwest, and it is also favorable to dealing with the impact of current international financial crisis, carrying on the industrial transfer of the East and Central area, and promoting the balanced development between regions.

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### 2 Historical evolution of the urban-rural space development in typical international metropolitan area

**London** The Great Britain was the first country that embarked on Industrial Revolution, as well as the first one has realized urbanization. The number of population in London in 1801 was only 960 000, and it reached 4 540 000 in 1901. The rapid expansion of its scale has caused overwhelmingly heavy urban traffic, inferior public health environment and housing shortage. To solve the problem of over-concentrated population and industries, the Big London Planning implemented by P. Patrick Abercrombie in 1944 proposed decentralization of population, industries and employment, and put forward the idea that limiting the expansion of inner cities by greenbelt, and establishing satellite towns on its outskirt to disperse the over-dense population and industries in Central London. The plan has divided London into four layers from the inside out i. e. London Administrative County, Inner City, Outskirt and Agriculture Area. The strip shape of the four layers was a circular taking the heart area of London City as its center. The common characteristic of 8 first-generation new cities surrounding London from the period of 1946 to 1950 was their small scales with planned 6 - 80 000 population, as well as an emphasized job - housing balance. This construction project was just about solving the crowded problem in central cities and building new towns in the agriculture area far away from the cities with large investment without garnering positive support from the government of accepting area, and its main service function was still dependent on central area. After the reflection on the first-generation new cities in the middle of 1960s, the thought of London planning was transferred from controlling inner cities scale to expanding it to a large area, changing its concentric circle with single center mode and building 3 cities at the end of its extending belt 80 - 140 kilometer away from it. By the cooperation and negotiation between London Government and outskirt accepting government, constructing on the existing towns, London is more considerable to build the new cities to economic growth centers and real-

 $<sup>\</sup>ast$  Corresponding author. E-mail: duanlf999@126.com

ize the balanced development of economy, population and city of London and its surrounding area. At the same time, it has met the demand of the development of the tertiary industry, and paid attention to improving the public service facilities, as well as cultural and recreational facilities, therefore it has made great success. The spatial development mode that the integration of greenbelt and new cities controls the spread of center cities, radioactive rays and concentric circulars (loop circuit) ease the through traffic proposed by the Big London Plan has solved the problems such as heavy traffic, ecological deterioration and housing shortage and the like, and it has become one of the development modes of metropolitan area followed by different countries in the world after World War  $\Pi^{[1]}$ .

**New York** New York Metropolitan Area, i. e. Big New York City or Big New York Area, comprised by 5 districts including Manhattan, 10 counties of the State of New York, 12 counties in the north of New Jersey and 1 county in the south of Connecticut, with an area about 13,000 square meters, one of the largest metropolitan areas in the world. It has a population of about 20 million, also the most populous area in the United States. At the beginning of the 20th century, with the rapid development of suburbanization and the dramatic increasing in private car ownership, the working places and resident places were increasingly scattered, and the spread of cities became much severer, therefore it was necessary to consider metropolises plan from a much wider territorial scope to overcome the limitation of the traditional plan [2]. New York Planning Association made the first region plan about New York metropolitan area from 1921 to 1929, including 3 states and hundreds of boroughs. The Regional Planning about New York and Its Outskirts was promulgated, and it proposed countermeasures about infrastructures and regional management and community system such cross-state common services from the regional integration aspect. The Regional Planning about New York and Its Outskirts is the first overall plan about metropolitan area, and it has affected cross-region development plans in western countries as long as half a century. The suburbanization in the United States has developed dramatically since 1960s, and they were named " spreading cities". The overwhelming spread of Low-dense residential buildings along the traffic facilities in the metropolitan area of New York City has caused such severe issues as infrastructure shortage, ecological deterioration and the like<sup>[3]</sup>. The second regional plan of New York metropolitan area put forward 5 principals to solve the sprawling of metropolitan areas in 1968; First of all, constructing new city centers to stimulate employment and reconstructing New York metropolitan area by multi-centered mode; secondly, building better public transportation system to secure the relationship between multi centers; thirdly, renewing infrastructure and environment in old city and improving its attraction and vitality; fourthly, providing housing diversification to meet residential demand with different income levels; fifthly, emphasizing the protection of natural ecological areas. The plan laid basis for the booming of New York Metropolitan Area in the last 1980s<sup>[4]</sup>. To meet the globalization challenge. New York Planning Association made the third regional plan of New York metropolitan area in 1996<sup>[5]</sup>. The plan put forward the 3E goal to upgrade life quality, i. e. Economy, Environment, and Equity, and integrate 3E goal by 5 activities, i.e. Greenbelt, Center, Mobility, Labors and Governance to improve the life quality in regions and breakthrough the limitation of pursuit of dollars and cents, highlight the importance of fairness and environment, as well as its wide vision to be global-oriented, and improve its regional competitiveness. 2.3 Tokyo Tokyo has become Japan's economic, political and cultural center since Meiji restoration and industrial revolution, and it has become one of the world cities since World War II. Facing the rapid growth of Tokyo city, National Capital Reconstruction Acts and National Capital Region Development Acts passed by Japan in 1956 have explicitly stipulated that the area in a 100 kilometer radius around the center of Tokyo is the national capital area, including Tokyo and the surrounding 7 counties. In the following planning history, controlling the expansion of the scale of Tokyo City, as well as preventing the population, industries and function from excessive centralization, especially centralizing toward core areas has always been the main target of planning<sup>[6]</sup>. The first overall planning of capital area promulgated in 1959 took Big London Plan in 1944 as a reference, tried to set a 5 - 10 kilometer width greenbelt in the area about 16 - kilometer radius to the center of Tokyo to prevent the metropolis form expanding infinitely, and constructed Shinjuku, Shibuya and Ikebukuro as comprehensive sub-centers. In the outskirt of greenbelt, urban development area and satellite towns were built to prevent population. industries and functions from centralizing excessively toward the core areas and embark on a transfer from traditional mono-centric cities to multi-centric cities. The second overall plan in 1968 suggested changing the mono-centric city development mode and constructing multi-centric structure in a much wider territorial scope, reducing its dependence on Tokyo Central Area by dispersing industries, universities and large-scale service institutions, making reasonable arrangement of space functions, increasing the population appropriately and taking it as the basis to construct sub-centers. Sub-centers usually were situated at the traffic modes and the places with large unexploited land with promising future, and they would become the future business centers, as well as the multifunctional regional comprehensive center with high independence to meet the job-housing balance between regions. In 2000, Tokyo proposed the overall goal to struggle is to "become an attractive international metropolis leading the world" oriented toward the 21st century, and proposed that the urban spatial structure is "multipolar and multi-core". At present, Big Tokyo Metropolitan Area has been taking the form of multi-centric structure by centers-subcenters-satellite towns in outskirt-adjacent counties. The centers at different levels are mostly comprehensive, and each has its own characteristics, as well as completing each other. The satellite town in the outskirt is about 30 kilometers away from the center,

mainly for residential function. The centers of Tokyo's adjacent 8

counties are about 50 kilometers from its center, mainly accepting the scientific and educational institutions and constructing scientific town mainly on conducting research and studies. The forming of multi-centric urban structure of Tokyo has changed the original mono-centric mode, and realized the vision to decentralize urban sub-functions and control excessive population growth and concentration by constructing sub centers in some extent <sup>[6]</sup>.

78

### 3 Practical experience for reference to promote the integration urban-rural development of Xi'an

The overall urban-rural planning is the prerequisite to realize urban-rural spatial integration Across 3 municipal administrative areas, Xi'an has a large number of towns, as well as vast villages. In the macro control integrating urban-rural development by the government, the overall urban-rural planning is always an important tool. It is the prerequisite for the realization of urban-rural spatial integration of Xi'an to break the administrative boundaries, put effective regional coordination mechanism in place paying attention to the harmony between urban-rural places and economic, social and environmental development, as well as paying attention to the close relationship between urban development and resource allocation and change in industrial structure, and make overall planning from an overall perspective taking urban and rural region as a whole. Taking overall urban-rural planning and land use planning to control the use of urban-rural land, make the urban-rural development coordinated, prevent the city and towns from sprawling fundamentally and protect the development of agriculture. It is necessary to shorten the distance between urban and rural place by constructing highly-developed road traffic system and providing convenience for the transportation for people and goods to realize a thriving society and economy in the whole region. Currently, most cities and town in Xi'an has stipulated development plan, and new rural construction is under its own way vigorously. Many cities have experienced much revision and modification. Only by taking legislation to strengthen planning's binding force can guarantee its authority. We should completely transfer government's functions, people-oriented, pay full respect to the benefit of the public and strengthen service consciousness, as well as instruct and help the public to change the development environment by reinforcing their participation and supervision in urban-rural plan and administration.

3.2 Exertion of government functions is the key to realizing the integration of urban and rural space For China such a developing country, especially for Xi'an which is situated in its west, its overall development of urban and rural space calls for the support and protection in agriculture, rural places and agriculture from the government. Some people trust market forces, and consider urban-rural dual structure in western developed countries will fade away with social economic development, and Xi'an can eliminate urban-rural dual structure by speeding up urbanization, and integrate the urban-rural space rapidly. And this idea is not only inadvisable, but also very harmful. The development of market

economy is not laissez-fair, and public articles, externality, monopoly and information asymmetry such factors will always cause disorder and chaos to market economy. And as the representative of public interests, the government should strive to regulate and correct the obstructive factors influencing the social economic sustainable development in free competition and development. Furthermore, as agriculture has strong externality and commonweal with long productive period and low demand and supply elasticity, the regulation that the market has made to the agriculture is limited. In the development of urban-rural integration, the support and participation the government has made in rural reform and the modernization of rural places have deeply impacted the social participation and change in rural appearance. To eliminate the urbanrural dual structure, it is necessary to take strong measures to support the development of agriculture and rural places, and to improve their productive capacity and competitiveness depending on government's active actions from the international and domestic environment Xi'an is situated in.

3.3 Advancing agricultural industrialization is the way to realize the integration of urban-rural space The experience of urban and rural spatial development in developed countries tells us the highly developed urbanization has not eliminated agriculture. And rural places as the places for agricultural production, as well as a form for human settlement, it will fade away completely. Conversely, the healthy development of agriculture is the basis and prerequisite for advancing industrialization and the coordinated development of urbanization. Xi'an should reinforce the optimization and adjustment of agricultural products and product structure from specific policies and capital investment as well as the support in agricultural industrialization. Under current situation of agriculture marketization, we should organize the scattered single household together to solve their worries about easy in production and hard in selling by contract farming of leading enterprises, play market's guiding and coordinating functions in producing and lead farmers to producing crops with optimized structure and optimized variety mix facing the domestic and international market, and improve the profit growth in production and circulation sectors. Meanwhile, it is important to further implement the development strategy of "industry promotes agriculture, city leads countryside ", make further innovation about land system, foster and strengthen agricultural leading enterprises, give great impetus to agricultural industrialization, improve agricultural comprehensive benefits and comparative income. and further improve the new rural construction [7].

3.4 Improving the social insurance system is the basis of realizing the integration of urban and rural space Social insurance system in the urban-rural integration has narrowed the gap between the urban and rural area, and promote the urbanization construction of rural area. With the implementation of relating policy about the urban-rural integration, social insurance system in Xi'an has made some advancement, however, social insurance system in Xi'an has a relatively narrow coverage, and it is imperfect

been applied in production, can also be used in asparagus. Secondly, chemical pesticides with high efficiency and low toxicity should be selected. By the tests on 32 bactericides commercially available, the following 6 pesticides which have significant inhibition effects on asparagus corynespora cassiicola and wilt fusarium are picked out: 50% of carbendazim, 400 g/L of Nustar, 70% of thiophanate-methyl, mancozeb, bromothalonil and 75% of chlorothalonil. These pesticides all deliver a good effect proved by field trial, it is recommended to use in turns.

5.5 Balanced fertilization and reasonable irrigation To prevent pathogenic bacteria being brought into field, we should heavily dress mature organic and biological bacterial manure, topdress moderate potash fertilizer and phosphatic fertilizer according to soil fertility and control the application amount of nitrogen fertilizer, so as to facilitate the plants to grow healthily and improve their disease-resistance. The application of organic fertilizer in autumn can deliver a greater result of disease prevention and yield increase than that in winter. It is easy to make deeper application of organic fertilizer in autumn, and this feature meets the requirements of the deep rooted plant asparagus, is in favor of recovery growth of asparagus plant in autumn and increasing the number and activity of antagonistic bacteria and competitive microorganisms in the soil as well as has a active significance in reducing pathogenic bacteria

in the soil. We should irrigate the asparagus reasonably based on the weather, the soil condition and the sprout and prevent slow irrigation, thus avoiding the disease being epidemic due to excessive humidity in the field.

2013

**5.6** Making a good job of field management Pay attention to the drainage in rainy season to avoid water accumulation in the field. Cultivating and weeding should be conducted duly and the diseased stem should be cut out in time. A research shows that the incidence of a disease and its severity have significant difference in the spring of next year when comparing the situation that remove the diseased stems remaining on the root plate and burn them outside the field in winter to the situation without cleaning up. Clean up the fields and gardens means to clear of the overwintering place and habitat for pathogenic bacteria, which has a very significant effect on the reduction of primary infection source in next year.

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(From page 78)

enough with weak administrative base. It faces a high pressure that a large amount of capital should be paid on time, and part of the mass have been treated unfairly in insurance, especially the unbalance and no joint between the urban and rural area. Then, the insurance in rural area is still weak. First of all, rural subsistence security system has been just established, basic livelihood security of impoverished farmers calls for improving. Secondly, cooperative medical service supporting funds are not in place and the security level is relatively low. Thirdly, rural social endowment insurance system has failed to be oriented, and there is obviously lack of system in rural social security for the elderly.

#### 4 Conclusions

In the 21st Century, the urbanization in China has embarked on a key period for rapid development. The rapid growth in the number of cities and towns and the continual expansion in their scales have driven the rapid economic development, as well as brought great pressure to the infrastructure of urban and rural area and their ecological environment. Under the given condition of ecological capacity, technologies and economic scale, as committed to developing to a international metropolis, it is of important theoretical and practical significance for Xi'an to take the

successful experience and lessons from the gradual process of international metropolis space as reference, follow the law of centralization and diffusion of population and industries, make adjustment of the layout in urban-rural spatial function, optimize the distribution of urban-rural population, and realize the sustainable of urban-rural economic society and promote the urbanrural spatial optimization and integration.

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