

## Chapter 5

# Safeguard Measures and Suggestions for China's Urban Agglomeration Construction



In the process of urban agglomeration construction in China, there are a few grand principles that we need to stick with for prosperous and sustainable urban agglomeration development in China. First, it is necessary to implement the concepts of “five types of development”, namely, innovative development, coordinated development, green development, open development, shared development. Specifically, we must carry out innovation-driven development strategy to build innovative urban agglomerations, implement green ecological strategy to build green and ecologically friendly urban agglomerations, accelerate the pace of opening up to the outside world to build international urban agglomerations, vigorously develop intelligent industries to build intelligent urban agglomerations, develop low-carbon industries in an orderly manner to build low-carbon urban agglomerations, implement cultural inheritance strategies and strengthen the regional cultural identity of urban agglomeration construction to build cultural urban agglomerations, strengthen the leading role of market mechanisms in the formation and development of urban agglomerations to build market-led urban agglomerations, construct a modern industrial system closely related to the global supply chain to build benefit-sharing urban agglomerations. Second, it is necessary to clearly establish centralized management organizations for urban agglomeration construction, form national-level coordinated development management committee for urban agglomeration development, establish public finance mechanism and the public financial reserve systems for urban agglomeration development, promote the legislative work of the integrated development of urban agglomerations, formulate the convention on cooperation of urban agglomeration, amend the Urban and Rural Planning Law, introduce *the Measures for the Preparation and Approval of Urban Agglomerations* and *Technical Specification for Urban Agglomeration Planning*, establish standard practice systems for urban agglomeration planning, guide scientific planning for urban agglomerations, strengthen urban agglomerations’ resource and environmental support capacity and sustainable development capacity, standardize statistical data collection procedure, compile and publish *China’s Urban Agglomeration Statistical Yearbook*.

## **5.1 Strategic Security Measures for Urban Agglomeration Construction**

In order to ensure the healthy and stable development of China's urban agglomerations, we need to actively grasp, guide and adapt to the new norm of economic development, comprehensively promote the "five types of development" concepts, namely, innovative development, coordinated development, green development, open development, shared development. We need to actively promote urban agglomeration construction through strategic pathways such as innovation-driven, cultural heritage, high efficiency and low carbon, intelligent innovation, market-orientation and benefit sharing.

### ***5.1.1 Implementing Innovation-Driven Development Strategy and Building Innovative Urban Agglomeration***

Innovation is the most important driving force to lead the development of urban agglomeration. We must establish innovation as the core of the overall development of urban agglomerations, and constantly promote urban agglomeration theoretical innovation, system innovation, scientific and technological innovation, and cultural innovation, so that innovation runs through all the activities of urban agglomeration development. In this regard, in the process of urban agglomeration construction, we must first implement the innovation-driven development strategy and build innovative urban agglomerations, which is an important way to speed up the implementation of the national New Urbanization strategy and the construction of new countryside, as well as an urgent requirement to explore the new mode of urban development and promote the sustainable development of urban agglomerations. Both the *Outline of the National Middle and Long-term Science and Technology Development Plan (2006–2020)* and the *Outline of the 13th Five-Year Plan for Economic and Social Development of the People's Republic of China* have proposed to construct innovative urban agglomerations.

#### **1. Comprehensively implement innovation-driven development strategy**

Innovative urban agglomeration refers to the urban agglomeration which takes the scientific and technological progress as the primary driving forces, the independent innovation as the leading force, the innovation culture as the foundation, and mainly relies on the innovation factors such as science and technology, knowledge, manpower, culture, system and the like. At present, China has entered the comprehensively critical stage of building an innovative society by 2020. In CPC's 18th Congress Report, it has once again put forward the implementation of innovation-driven development strategy. The Seventh Meeting of the Central Financial Leading Group on August 18, 2014, clearly stated that "innovation has always been an important force for a nation to move forward, and the implementation of innovation-driven

development strategy is to promote comprehensive innovation with scientific and technological innovation as the core, sticking to the principles of demand-oriented industrialization, enterprises-led innovation, scientific and technological supported economic development, to form a new source of growth, and promote sustainable and healthy economic development". From these national-level understanding of innovation-driven development strategy, we can see that the innovative urban agglomeration is an important base and power source for carrying out national innovation activities and building an innovative country, a key link to promote the construction of the national innovation system, a core engine to speed up the transformation of economic development modes, and an important path to speed up the process of new urbanization in China and the construction of new countryside. In this regard, innovation-driven urban agglomeration development strategy has a pivotal strategic position in China's economic and social development [1].

## **2. Improving urban agglomerations' independent innovation, industrial innovation, livability innovation and institutional mechanism innovation capability**

Currently, the comprehensive innovation level, independent innovation level, industrial innovation level, livability innovation level and system mechanism innovation level of urban agglomerations in China is generally low. This is because the construction of innovative urban agglomeration is often restricted with investment, income, technology, contribution and talent bottlenecks. The primary problems include low urban and enterprise's investment in Research and Development (R&D), low proportion of new product sales, low proportion of urban high-tech industrial output, low dependency on urban internal technology, low proportion of urban invention patent application, low contribution of urban scientific and technological progress to economic growth, and the low proportion of the amount of urban public education funds in GDP [2]. Based on these observations, we propose that the construction of innovative urban agglomeration in the future should take independent innovation as the leading strategy to enhancing international competitiveness, take scientific development as the fundamental driving force for innovation, gather innovative talents as the key components for innovation, focus on industrial innovation, rely on institutional mechanism innovation, increase investment, resolve bottlenecks, promote collaborative innovation, and ultimately build a sound innovation system, with concentrated innovation elements, distinct innovation features, energetic innovation, excellent innovation environment, concentrated innovative talents, strong independent innovation capability, prominent science and technological support, good economic and social benefits. The goal is to build innovative urban agglomerations that will play significant radiating and leading roles at regional, national and global levels.

In the process of building an innovative urban agglomeration, it is necessary to regard the construction of innovative urban agglomerations as the core carriers of building an innovative nation, treat the improvement of independent innovation ability as the key to the construction of innovative urban agglomerations, take the construction of an open urban agglomeration innovation system as the focus of the construction of the new urban agglomeration, take the reform of institutional

mechanism as the starting point of building innovative urban agglomerations, take the construction of innovation platforms as the footholds of the construction of innovative urban agglomerations, and take the introduction and cultivation of innovative talents as the starting point of the construction of the new urban agglomerations.

### **3. Constructing urban agglomeration innovation pattern with innovative cities as the important nodes**

In developing China's innovative cities, there are the "1353637" standards, in which, "1" refers to that the city's per capita GDP shall be more than 10,000 US Dollars. The 3 "5s" refer to that the city's R&D investment shall be more than 5% of its GDP; the city's enterprises' R&D investment shall account for more than 5% of their total sales revenue; the city's public education funds shall be more than 5% of its GDP. The 3 "6s" refer to that the city's new product sale revenue shall be more than 60% of its total product sale revenue; the contribution rate of scientific and technological progress on economic growth shall be more than 60%; high-tech industry value added shall account for more than 60% of the city's total industrial value added. The 3 "7s" refer to that the city's internal technology dependence shall be greater than 70%; invention patent application shall account for more than 70% of the total number of patent applications; the proportion of enterprise patent application shall be greater than 70% of the city's total patent application. Based on these standards, the key areas of developing comprehensive innovative urban agglomerations in China in the future will be in the eastern coastal areas. Regions and cities in this area are the key innovation highlands to enhance the comprehensive innovation ability of China and improve China's strategic innovation position in the global arena. It is also an important support to ensure that China is built into an innovative country by 2020, and to take the vast central and western regions as the key replacement areas for future innovation of China's urban agglomerations. To achieve the strategic goal of building an innovative country, we propose to construct a national innovative urban spatial network system that is composed of five hierarchical levels, namely: global innovative cities, national innovative cities, regional innovative cities, local innovative cities, innovative developing cities. In China, such urban spatial network system is composed of 4 global innovative cities, 16 national innovative cities, 30 regional innovative cities, 55 local innovative cities and 182 innovative development cities [3]. The goal is to support the construction of China's urban agglomeration innovation pattern with innovative cities' innovation network pattern. We propose to promote the innovative urban agglomerations based on innovative resources, combination of government and market forces, enterprise-led, new and high technology support, and industrialization support. Furthermore, we also propose to integrate independent innovation + combine introduction and innovation; government-guided + enterprises-led interactive innovation, entity innovation + virtual innovation, and integrated innovation combining production, learning and research.

### ***5.1.2 Implementing the Green Ecology Strategy to Construct Green and Ecologically Friendly Urban Agglomerations***

“Green” is a symbolic color and necessary condition for the sustainable development of urban agglomerations and an important sign of the people’s pursuit of a better life. To implement the green ecological strategy in urban agglomeration development, we must adhere to the principles of green development and sustainable development, firmly take the road of civilized development that focuses on production development and better quality of life, create a modern construction pattern of harmonious development between human and nature in urban agglomerations, promote the construction of beautiful urban agglomerations, contribute to global ecological security. The Central Conference on Urbanization, held for the first time in December 2013, further proposed to promote urbanization with people as the core, improve the quality of urban population and the quality of life of urban residents, adhere to ecological civilization, and focus on promoting green development, recycling development and low-carbon development. The *National New Urbanization Plan (2014–2020)*, implemented in March 2014, once again takes ecological civilization and green low carbon development as the dominant principles, promotes the formation of green and low-carbon production lifestyle and urban construction mode, and promotes the transformation of urban development from high resource consumption, high carbon emission, high environmental pollution, low comprehensive effect to low resource consumption, low carbon emission, low environmental pollution and high comprehensive effect. Apparently, the grim reality and the transformation of the national development strategy require the future development of urban agglomerations must take the green ecological pathway.

#### **1. Green ecological development is the best choice for urban agglomerations in the future**

Ecological urban agglomeration is a new type of urban agglomeration construction model developed around the construction of ecological cities, which is a highly coordinated and harmonious complex ecosystem among society, economy, culture and nature. Its internal material transformation, flow and information transmission constitute a closely related, collaborative symbiosis network. Ecological urban agglomerations have the capacity to maximally realize material recycling, fully utilize energy, effectively regulate information feedback, best increase economic benefits, achieve high social harmony, and create co-symbiosis between human and nature. This development mode of urban agglomeration is the most ideal and the highest realm pursued by human beings. Constructing ecological urban agglomeration is the rational choice of human beings after a long period of exploration. It can be asserted that green ecological urban agglomeration is the inevitable choice of human beings, and likely even the only choice. The essential characteristics of green ecological urban agglomeration are as follows.

- (1) Natural harmony. In green ecological urban agglomerations, people and nature coexist harmoniously. On one hand, people return to nature and are close to nature. On the other hand, nature blends into cities. The development of urban agglomeration is fully integrated with the natural progress and is able to practice carbon-oxygen balance function, inter-species cooperative symbiosis function, water environment optimization function, natural and human harmonious symbiosis function, moderate capacity adjustment function and ecological style function. In the process of urban agglomerations' economic development, the environment is effectively protected; the entire society operates healthily. The green ecological urban agglomeration is not a human dwelling with only natural green embellishment on chaotic and lifeless society, but a city collection full of care and love, protection and edification for both human and nature.
- (2) Sustainable and efficient. Guided by the idea of sustainable development, construction of green ecological urban agglomerations requires the development of urban agglomerations to protect the natural environment, make greater use of renewable resources and energy, guarantee the self-renewal ability of renewable resources and energy, maintain ecological diversity, protect all natural resources and life support systems, and rationally allocation various resources, fairly protect the development and environmental needs of future generations, not to promote the temporary prosperity of urban agglomerations by plundering local carrying capacity, and not to destroy the regional ecological environment for its own development. In this sense, green ecological urban agglomeration is a sustainable urban agglomeration. This requires urban agglomerations to achieve the normal operation and best output with minimal resources and energy consumption, to improve the efficiency of the use of all resources, to obtain multi-level utilization and recycling of materials and energy, and to form a coordinated symbiotic relationship between various industries and departments. The green ecological urban agglomerations will have a reasonable industrial structure at the macro level, develop resources and energy saving production modes with efficient operation of production systems and control systems; at the micro-level, the green ecological urban agglomerations will actively develop environmentally friendly production technology, design more durable and serviceable products, minimize waste, and expand the recovery and reuse of materials.
- (3) Overall coordination. Construction of green ecological urban agglomeration is not simply to pursue the beautiful environment, or economic prosperity, but to take into account the overall benefits of society, economy and environment. The construction not only pays attention to the coordination of economic development and ecological environment, but also pays attention to the improvement of human quality of life and seeks development under the new order of overall coordination. Urban agglomerations must be integrated into larger areas as an inseparable part. If the development of urban agglomeration leaves the region's natural and humanistic supports, urban agglomerations will become isolated "islands," they will then lose their communication channels with the outside world's material, energy, population, information and culture exchanges. Apparently, isolated urban agglomerations will not be able to achieve ecological and

sustainable development. This requires that urban agglomerations need to abide by ecological principles to develop in line with the local natural and cultural conditions.

## 2. Fundamental strategies for the construction of green ecological urban agglomerations

- (1) The first strategy is to develop ecological capital, cultivate green ecological urban agglomeration by sequentially constructing ecological city and ecological civilized city. In so doing, we shall maximize the advantages of urban agglomerations' local ecological resources, treat the local natural conditions as the largest capital for urban agglomerations' ecological development. Relying on the ecological capital, we will then be able to accumulate production capital, enhance the life capital, build the urban agglomeration into green ecological urban agglomeration with the most development potentials. In the course of the construction of green ecological urban agglomeration, it is necessary to develop recycling economy and ecological economy following the four-step plan, namely, building national ecological garden city, national environmental protection model city, national ecological city and national ecological civilized city. With this strategy, we shall aim at constructing the cities in the urban agglomeration into national ecological cities and national ecological civilized cities.
- (2) Vigorously develop ecological economy and ecological industries to support the development of green ecological urban agglomeration. First, the development will mainly focus on the development of ecological industries, promote ecological economic structure within the urban agglomeration, and vigorously develop the ecological economy, including ecological agriculture, ecological industries, ecotourism, ecological commerce, ecological towns, ecological homes and ecological products. It is important to strengthen the ecological economic development and socioeconomic activities, ecological industrial development and industrial structure, and ecological urban construction so that the urban agglomeration can then be said to be a green ecological urban agglomeration [4]. Second, we also need to extend the ecological industrial chain and speed up the construction of ecological industrial agglomerated region. We need to vigorously develop ecological industries based on the material circulation mode of natural ecological processes. In the process, it is necessary to establish ecological industrial system focusing on clean and environment-friendly, high-tech, deep processing and high value-added industries. This is to fundamentally change the operation mechanism of traditional industries' "high energy consumption" and "non-recycling" modes to the healthy and sustainable development of economy and society. Third, the construction of ecological urban agglomeration must be people-oriented, vigorously develop the ecological industries that are closely related to people's lives and promote the continuous concentration of a variety of new ecological environment industries.
- (3) We should vigorously develop the recycling economy and recycling urban agglomerations. Following the principles of reduction, re-utilization, and

resource conversion, we will energetically facilitate the development of recycling enterprises and ecological industrial park, vigorously promote clean production and extend ecological industry chains, greatly promote the “green consumption”, and actively build an all-participatory recycling society and city. We intend to build sustainable green ecological urban agglomerations through the construction of recycling industries and cities.

- (4) We should vigorously develop the ecological health care industries through the construction of ecologically health-friendly cities. Specifically, we shall focus on building ecological health care bases centered on a variety of ecological health care themes. The ecological health care projects will focus on relaxation, creating a happy working and living environment to allow residents of cities to enjoy life while working hard. The environment will be dominated by the green color, the air will be clean, and the city will be full of artistic and cultural atmosphere.

### ***5.1.3 Implementing Comprehensive Opening-up Strategy and Constructing International Urban Agglomerations***

The past development experiences in China suggest firmly that opening-up and engaging into the international community are the only ways for the prosperity and development of urban agglomerations. We must conform to the trend that China's economic development is deeply integrated into the world economy. We will actively pursue a mutually beneficial and win-win opening-up strategy, adhere to the coordination between internal and external needs, balance import and export, focus on both introduction of new technology and expanding international markets, and develop a higher level of open economy. To do so, it is necessary to actively participate in global economic governance and public goods supply, scientifically and orderly construct international metropolises and global cities, improve the institutional voice of China's urban agglomerations in global economic governance, and build a wide range of urban agglomeration interest communities.

#### **1. We must firmly implement the urban agglomeration internationalization strategy and gradually build international metropolises and global cities**

China's current internationalization/globalization strategy is to focus on the pursuit of the Belt and Road Initiative. The internationalization/globalization strategy for urban agglomerations in China shall closely follow this national strategy, enrich the connotation of opening-up to the global market, improve the level of opening up, promote strategic mutual trust, investment, economic and trade cooperation, cultural exchanges, and strive to build a deeply integrated, mutually beneficial global cooperation pattern. As we are viewing from the today's era of globalization and China's current development status, we need to treat the construction of international



metropolises as a long-term strategic goal for the development of urban agglomerations in China. This is to ensure that China participates in global cooperation and competition on a larger scale, in a wider field and at a higher level, seek more initiatives and become an irreplaceable important node in the global urban system and the global industrial system. To achieve this goal, we must follow the general principles of gradually and orderly developing urban economy and urbanization, actively integrating Chinese and western ways of development, and always putting people's livelihood at the highest priority. Specifically, we need to encourage international cities such as Beijing, Shanghai, Shenzhen, Hong Kong and Macau to actively create conditions to further move towards becoming the world cities, so that we will eventually be able to construct world-class urban agglomerations in China. In addition, it is necessary to cultivate a number of cities with relatively good conditions in a focused manner, and to develop them to become international metropolises. In the end, our goal is to generate a new internationalized urban system in China, which is composed of world cities, international metropolises, and internationalizing cities.

In the process of building international metropolises and international urban agglomerations, we should carefully handle the five relations, namely, the "gradual" and "leap forward" development, "localization" and "internationalization", "building momentum" and "building a city", "specificity" and "comprehensiveness", and "political performance" and "quality of life". It is very important to construct international metropolises with greater international influence that agree with China's national conditions and characteristics. We need to learn quickly how to precisely position China's urban agglomerations in the global urban system, gradually introduce global elements to China's urban agglomerations, vigorously promote the internationalization of China's urban agglomerations and create their distinctive images in the global market. In so doing, we intend to maintain competitiveness and influence of China's global urban agglomerations in international competition.

## **2. We must build global urban agglomerations through the construction of international metropolises and global cities**

Based on the conditions and standards of international metropolises, through comprehensive analysis and comparison, we suggest that China is likely to build about 30 international metropolises in the next 20–50 years, including 3 world cities (Hong Kong-Shenzhen-Macau, Shanghai and Beijing), 12 international metropolises (Guangzhou-Foshan, Tianjin, Chongqing, Nanjing, Shenyang, Chengdu, Wuhan, Xi'an, Hangzhou, Qingdao, Dalian, Xiamen) and 15 international cities (Suzhou, Nanning, Harbin, Changchun, Kunming, Haikou, Ningbo, Wenzhou, Changsha, Hefei, Jinan, Fuzhou, Ürümqi, Zhengzhou, Tangshan), to form an urban system composed of world cities, international metropolises, and international cities [5], which becomes an important support for the construction of international urban agglomerations. We should further increase the strength, breadth and depth of China's opening-up to the global market with a strategic vision of globalization, actively explore the establishment of institutional mechanisms adapted to international economic rules, create an international service platform, and continuously optimize the

investment environment for the construction of international metropolises. To accommodate the global economy's strategic transformation from manufacturing economy to service-oriented economy, we should vigorously develop the advanced manufacturing industry at the high end of the value chain and the productive service industries such as finance, insurance and modern logistics, gradually enhance the comprehensive strength and international competitiveness of urban agglomeration construction, actively build the inland open strategic support belts based on inland central cities and urban agglomerations, and continuously promote the construction of bilateral international cooperative industrial parks. The ultimate goal is to build China's urban agglomerations into indispensable strategic nodes in the global industrial chain and global core value chain.

#### ***5.1.4 Vigorously Developing Intelligent Industries and Building Smart Urban Agglomerations***

Smart urban agglomerations are the new generation of urban agglomerations that are supported by information technology, knowledge society and the Next Generation Innovation (Innovation 2.0). Smart urban agglomerations incorporate the Internet of things, cloud computing and other new generation information technology, as well as Wikipedia, social networks, Fab Lab, Living Lab, comprehensive integration method and other tools and methods to create an ecology that is conducive to the emergence of innovation, to achieve a comprehensive and thorough perception, ubiquitous interconnection, intelligent integration of applications and sustainable innovation characterized by user innovation, open innovation, mass innovation and collaborative innovation.

##### **1. Promoting the construction of smart urban agglomerations is the new direction of urban agglomeration development in China**

The *National New Urbanization Plan (2014–2020)*, released on March 16, 2014, clearly states that we will vigorously promote the construction of smart cities. It is important to coordinate the use of material resources, information resources and intellectual resources in urban development, promote the new generation of information technology innovation and applications such as the Internet of things, cloud computing and big data analysis, and realize the deep integration with urban economic and social development. We should strengthen the construction of information network, data center and other information infrastructure, promote the sharing of government information and business synergy across departments, industries and regions, strengthen the socialization and utilization of information resources, promote the application of intelligent information and new information services, and promote the informationization of urban planning and management, the smart infrastructure, the convenience of public services, the modernization of industrial development and the refinement of social governance. At the same time, the Ministry of Housing and Urban-Rural Development of PRC has proposed 277 smart city pilot projects;

the Ministry of Science and Technology of PRC has promoted 20 smart city pilot projects. The goal of these pilot projects is to make the city healthier and more sustainable and facilitate the everyday life of urban residents.

It can be seen that the smart urban agglomeration is a new but important direction for the development of China's urban agglomeration in the future, and it is the inevitable stage of urban agglomeration into the advanced stage, which will directly affect the spatial pattern of the development of Chinese urban agglomerations. In line with the arrival of the Third Industrial Revolution, smart urban agglomeration will be the new form of future urban agglomeration development. In order to build a good smart urban agglomeration, it is recommended to integrate the world's most advanced smart technology, information technology, Internet technology, cloud computing technology, big data analytical technology, low-carbon technology and other high-tech technologies, focus on the development of smart agriculture, smart manufacturing, smart service industries and the like to build a smart industrial system. It is important to integrate smart cities with smart industries, optimize the development of smart ecological space, production space and living space to form a high degree of integration between city and industries so that the city will support the industrial development while the industries will boost urban development. In this process, it is necessary to avoid the construction of hollow urban agglomeration and industries.

## **2. Vigorously develop smart industries to provide new support for the development of smart urban agglomerations**

In order to speed up the construction of smart urban agglomerations, we propose to develop smart industries, including smart service industries, smart manufacturing and smart agriculture based on some key smart technologies such as network communication technology, information acquisition and Internet of Things (IoT) technology, cloud computing technology, GIS/GPS/Remote Sensing ("3S") technology, three-dimensional visualization and virtual reality technology, and security maintenance technology. These smart industries will become new supporting industries to support the development of China's urban agglomerations in the future. For the smart service industries, we propose to invest in vigorously developing smart transportation, smart medical care, smart governance, smart finance, smart education, smart tourism, smart management (mainly infrastructure and energy management) and smart security. These smart industries are the most important industrial supports for the construction of smart urban agglomerations, covering a variety of smart services in the construction of intelligent urban agglomerations. For the smart manufacturing, we propose to actively develop smart manufacturing products, smart manufacturing services, smart manufacturing equipment, and smart manufacturing systems. For smart agricultural development, we propose to actively explore the practices of smart farming, smart forestry, smart animal husbandry and smart fisheries. Smart agriculture is different from traditional agriculture in that it integrates Internet, mobile network, cloud computing and IoT technology, relying on various sensing nodes deployed in agricultural production sites (ambient temperature and humidity, soil moisture, carbon dioxide, images, etc.) and wireless communication networks to achieve smart perception of agricultural production environment, smart

early warning, smart decision-making, smart analysis, and online expert guidance. This practice will eventually become the new norm for agricultural production with precision planting, visual management, and smart decision-making. In addition, we also propose to vigorously develop the real-time smart cloud (computing) industry, extend the smart cloud computing industrial chain in smart urban agglomeration construction, build smart cloud computing industrial part, develop cloud computing industries focused on cloud computing data center and cloud computing platform. It is also important to accelerate cloud computing related infrastructure construction, build a cloud computing data center and a cloud computing platform for smart urban agglomerations.

### ***5.1.5 Orderly Developing Low Carbon Industries, and Constructing Low-Carbon Urban Agglomerations Based on Local Conditions and Development Status***

#### **1. China's commitment to reducing carbon emission to fight global climate change forces the construction of low-carbon urban agglomerations**

China is one of the most carbon-emitting countries in the world. A paper published in *Nature-Geoscience* in September 21, 2014 pointed out that China's carbon emission exceeded the EU and the United States combined in 2013, reaching 10 billion tons. At the same time, China's per capita carbon emissions exceeded that of the European Union for the first time, reaching 7.2 ton, but still less than half (16.4 tons) that of the United States. In addition, the paper also pointed out that although China's carbon emission has increased rapidly in recent years, China's total carbon emissions from 1870–2014 (143 years) were still less than half that of the EU or the United States' carbon emission in the same period of time.

Nevertheless, during the 2007 APEC meeting, China for the first time proposed a strategic proposition for the development of a low-carbon economy, the research and development of low-carbon energy technologies, and the promotion of carbon sequestration technology. During APEC's 22nd informal meeting of leaders in 2014, China and the United States issued the *Sino-US Joint Statement on Climate Change*, defining their respective targets for action to address climate change after 2020. The US plans to reduce carbon emission by 26–28% in 2025 based on its 2005 emission level. China plans to peak carbon dioxide emission in 2030 or early if possible and plans to raise the share of non-fossil energy in primary energy consumption to around 20% by 2030. To achieve this reduction goal and commitment, we must first start with cities and urban agglomerations because urban agglomerations, as the most important human settlements, are the main and concentrated sources of greenhouse gas emission because of energy consumption and carbon dioxide production, as well as the primary territory for the human society to validate the theory of “low carbon economy” and “low carbon society” and to achieve low-carbon development.

Building a low-carbon urban agglomeration has become the only option for China to tackle global warming, reduce greenhouse gas emission and achieve sustainable development of urban agglomerations in the future. In order to build low-carbon cities and low-carbon urban agglomerations, China has constructed 36 low-carbon urban development pilot projects, 55 low-carbon industrial park pilot projects and 1000 low-carbon community pilot projects, which will accumulate rich empirical models for the construction of low-carbon urban agglomerations.

**2. The construction of low carbon urban agglomerations is a long-term process based on national conditions, we shall never make goals that we cannot achieve blindly**

The reasons why building low-carbon urban agglomerations in China need to be based on China's own conditions, and likely will be a long-term process are as follows. First, China's energy structure, which composes 70% of fossil fuel, cannot be changed or reduced in the next 20–30 years, especially when China's energy consumption is constantly increasing with the economic growth. From 1980 to 2013, China's energy production grew at an average annual rate of 5%, while energy consumption grew by 5.6%, energy consumption reached 3.76 billion tons in 2013, grew at 3.9% annually, accounting for 22.4% of total global energy consumption. In the meantime, China's energy production was 3.4 billion tons, grew at a rate of 2.4% annually. China's energy supply gap is widening and import dependence is increasing. In addition to that, China's energy consumption structure contains 70% of fossil fuel, which is impractical to reduce to 40–50% in the next 20–30 years. Although China has adopted a variety of policies to support the development of renewable energy, but this proportion is still very low in China's energy consumption structure. As the high carbon emission energy consumption structure cannot be changed, China will not be able to build real low-carbon urban agglomerations for some time to come. Second, China's economic development is still in the stage of heavy and chemical industry dominant stage. The proportion of high-carbon emission industries is large. Among the primary, secondary and tertiary industries, the proportion of the secondary industry in 2013 still accounted for 43.9% of the entire economic structure. It will also be impractical to change this proportion drastically in the next 10–20 years. Third, China is in the medium-term rapid growth stage of urbanization with large portion of high carbon emission facilities and large population. It will also be impractical to change this fact in the next 20–30 years. As a result of the above three points, for China's economic growth to maintain a growth rate of about 6.5–7% in the future, the development of low-carbon industries, construction of low carbon cities and urban agglomerations need to be based on China's national conditions. We propose to orderly develop low-carbon industries, experiment the construction of low-carbon cities. It will be detrimental to follow blindly standards and practices as currently employed in the post-industrial countries. It will also be naive to blindly trust some international organizations' biased comments on China's construction of low-carbon cities.

### ***5.1.6 Implementing the Strategy of Cultural Inheritance and Constructing Cultural Urban Agglomerations***

Culture is the soul of urban agglomeration, and also an extremely important driving factor to promote the formation and development of urban agglomeration. The power of culture directly determines the identity of regional culture among cities within the urban agglomeration. Urban agglomerations without strong cultural identity is the urban agglomeration without cohesion and likely non-sustainable in the long run. Urban agglomeration is an important carrier of the inheritance of Chinese culture. For this matter, we must implement the strategy of cultural inheritance, and construct urban agglomeration into a cultural urban agglomeration with profound cultural connotations and common hearts.

#### **1. Strengthen the innovation of cultural inheritance and build fames for cities, towns and villages based on their historical cultural values**

The overall guiding ideology of the *National New Urbanization Plan (2014–2020)* is to take the new urbanization pathway with Chinese characteristics, which is people-oriented, four modernizations synchronized, layout optimized, ecological civilization and cultural inheritance. It is proposed to explore urban cultural resources, strengthen innovation on cultural heritage, and build cities to be culturally charming spaces with heavy historical background and distinctive characteristics of the times. We should strengthen the exploration of cultural resources and the overall protection of cultural ecology for those cities and towns, districts, ethnic towns that have heavy historical and cultural fames. The goals are to inherit and carry forward the excellent traditional culture, promote the development of local characteristic culture, and preserve the cultural memory of the city in the process of urbanization. It is very important to promote the blending of traditional culture with modern culture, native culture and external culture, and form a diversified and open modern urban culture.

According to the *Law on the Protection of Cultural Relics of the People's Republic of China*, historical and cultural cities refer to “cities that preserve particularly rich cultural relics, or have great historical and cultural value, or revolutionary significance”. Some of these cities have been elected to be the capital cities by the emperors in historical times. Some have been political and economic centers at that time. Others have been the sites of major historical events. Still others have been renowned for their precious cultural relic concentration. Yet still others have been known for their exquisite handicrafts. Their retention opens a window for today's people to look back on Chinese history. By the end of August 2014, China had listed 125 cities as China's historical and cultural cities, 181 towns as national historical and cultural towns, and 169 villages as national historical and cultural villages, which reflected the dynamic historical process and evolution of the formation of China's settlements in different regions, by different ethnicities and at different socioeconomic development stages. They serve as true records of traditional architectural features, excellent architectural arts, traditional folk customs and primitive spatial forms, and have high values for both research and cultural heritage.

## **2. It is important to enhance the visibility and reputation of urban agglomerations based on their innovative cultural inheritance**

On one hand, the development of China's urban agglomerations in the future should vigorously carry forward Chinese culture, carefully develop and protect the fame of historical and cultural cities, towns and village in China, endow each urban agglomeration with a strong cultural heritage, enhance the visibility and reputation of urban agglomerations through their famous cultural cities, improve the humanistic environment of urban agglomerations. On the other hand, we need to vigorously develop the cultural and creative industries, construct a group of cultural industry agglomerated areas and cultural industry bases, promote the great development and prosperity of China's urban agglomeration cultural industries, and form the spatial development pattern of urban agglomerations with strong cultural characteristics, rich cultural connotation and distinctive Chinese cultural symbols.

### ***5.1.7 Strengthening the Leading Role of the Market in the Development of Urban Agglomerations and Constructing Market-Oriented Urban Agglomerations***

The fundamental driving force of urban agglomeration construction is the market mechanism. Marketization is the institutional premise of the formation and development of urban agglomeration. Our analysis suggests that there is a clear positive correlation between marketization process and urbanization process. In the process of urban agglomeration construction in China, we must first rely on the role of market regulation and law of value to ensure the free flow and allocation of economic factors such as population, resources, land and capital related to urban agglomerations. We also need to promote the construction of urban agglomerations in a flexible and diverse manner and ensure that the development of urban agglomerations is always dynamic.

#### **1. Promoting the integration of markets within urban agglomeration and constructing market-oriented urban agglomeration**

To promote the integration of markets within urban agglomeration, it is necessary to adhere to the general principles of "market-led, enterprise-focused, government-coordinated, resource-sharing, market-open, benefit-sharing, overall-planning, key-breakthrough, progressively-promoted" integration mode. We need to build a multi-level regional market network and form an integrated market mechanism for the free flow of internal and external commodities and factors of production without barriers according to the regional needs for industrial development and consumption. Since we are still in the early stage of market economy, it is one of the most important contents of urban agglomeration coordination and integration to break the restriction

of administrative boundaries on economic development, promote the industrial diffusion and extension of industrial chain between urban agglomerations, and realize the integration of economy and industries. It is necessary to speed up the establishment and improvement of market mechanism, fully allow market mechanism to play the important role in the allocation of resource elements of urban agglomeration, especially the roles of important enterprise groups. Our investigation suggests that cross-regional, cross-industry, cross-ownership enterprise groups are the microscopic basis for the integration within urban agglomerations in China.

## **2. Accelerating the development of market systems to guarantee integrated urban agglomeration construction**

According to the theory of market economy, the fundamental role of market mechanism in the allocation of social resources is accomplished with a market system with sound functional structure. Developing a structurally sound market system and establishing an open, unified, competitive and orderly regional market system are not only the requirement of market economy, but also the result of effective planning. In the process of urban agglomeration construction, we should take advantage of the favorable regional commercial development and market construction conditions, start from the long-term goal of regional union and overall co-prosperity, jointly build a large market, develop big business, invigorate the great commodity circulation, so that we can focus on regional market construction, promote chain operation, supermarket management, general distribution agent, and achieve breakthrough in outsourcing export and network management and other new marketing methods. In so doing, based on the principles of "who invest, who benefit and who own", we focus on constructing a number of great regional markets with supporting facilities and services, full functions, national radiating capability in the process of transforming the operating mechanism, state-owned commercial enterprises and improving the existing major professional markets. The ultimate goal is to create modern market network system and e-commerce network system with the large wholesale markets as the leader, regional markets as the backbone, small markets and rural markets as the supplement.

## **3. Improving market forecast and decision-making capability for better urban agglomeration development**

Market forecast refers to the use of a variety of information obtained from market surveys to measure the future trend of market supply and demand in a certain period of time, as well as the degree of influence of various factors on market supply and demand. Market forecast attempts to predict the prospect of market trends. Reasonable and relatively accurate market forecast is conducive to the preparation of urban agglomeration plans based on the trends of social demands. Market decision-making refers to the choice of the best solution from a number of feasible and replaceable options that generally attempt to achieve the same goal. The solution tends to provide a basis for decision-making on major planning objectives and measures. It is the result from research on market factors. In the development planning for urban agglomeration, on one hand, we might be able to deduce the possible consequences



of current decision-making through market forecast; on the other hand, in the process of planning and implementation, we can analyze whether the original decision can achieve the desired effect at any time according to the changed conditions, and then provide information for modifying the current decision or making auxiliary decision. Such tracking forecast and decision process can make the planning and construction of urban agglomeration more predictable hence more manageable.

### ***5.1.8 Strengthening Modern Industrial System Directly Linked with Global Supply Chain to Construct Benefit-Sharing Urban Agglomerations***

The *Outline of the 13th Five-Year Plan for Economic and Social Development* of the People's Republic of China states that sharing is the essential requirement of socialism with Chinese characteristics and that it is necessary to adhere to the principles that the purposes of socioeconomic development is for the people; development relies on the people; the benefits of development must be shared with the people. It is hence necessary to make more effective institutional arrangements, so that all people have a greater sense of gain in socioeconomic development and are willing to steadily move in the direction of common prosperity. It can be seen that the construction of modern urban agglomeration industrial system that is closely related to the global supply chain is the most important support for the sustainable development of urban agglomeration. The optimized industrial structure and good industrial growth environment are the keys to enhance the industrial competitiveness and international competitiveness of urban agglomerations.

#### **1. Developing urban agglomerations to seize the opportunity of the reconstruction of global supply chain and quickly integrate into the global value chain and become the primary players**

In the era of globalization, the future development of China's urban agglomerations should aim at developing at the international level and highlighting the "internationalization" of their development. This "internationalization" of China's urban agglomerations specifically refers to that China's urban agglomerations must participate in the international division of labor, build international functions that support their international integration. Urban agglomerations will no longer just develop within the domestic arena but build their international images and reputation. For this matter, it is suggested that we should make full use of the international cooperation and international reputation that China's urban agglomerations have already gained, share international resources in the international arena, actively integrate into the global industrial chain and global value chain. In addition, through technology integration, business integration, market integration and industrial integration, we must emphasize the industrialization driven by informationization, and firmly promote the development of high-end leading industries, scale-up of emerging industries, and branding of traditional industries. It is also very important to vigorously

develop advanced manufacturing and productive service industries such as finance, insurance, modern logistics, information services, research and design, education and training. We need to actively pursue the development of high-end integrated and comprehensive service industries based on the demands of concentrating productive services, creating chains for livelihood services, building networks for basic services, and equalizing public services. We shall follow the pathway of product upgrade from low-end, to midrange, to high-end, to terminal level, actively promote the high-end development for key industries, key enterprises and key products, extend a number of industrial chains with global significance, build the urban agglomerations into highly internationalized manufacturing bases and modern service bases, enable China's urban agglomerations to be indispensable strategic nodes in the global industrial chain and the primary players in the global core value chain.

## **2. Actively cultivating multinational enterprise groups, promoting the construction of industrial agglomerations, enhancing industrial concentration and international competitiveness of urban agglomerations**

In the world of enterprise-led development, it is found that large enterprise groups are more stable and stands stronger against inevitable market risks having the ability to compete at a global level. For this matter, encouraging the development of large enterprise groups is an important measure to enhance the international competitiveness of enterprises, and then will help to enhance the capability of urban agglomeration's own competitiveness in the global arena. To achieve the goal of integrating urban agglomeration's industries to the global industrial chain, we must accelerate the construction of industrial belt, industrial corridor and specialty industry agglomeration area in urban agglomerations and speed up the construction of specific industrial parks according to the requirements of intensive land use, development of industrial chain, enterprise cluster combination and resource recycling. In the process of the construction, first, we need to guide enterprises in industrial agglomeration area to effectively form enterprise groups, business clusters and internationalized industrial clusters. Second, we should guide the industries to concentrate in the park, build advanced manufacturing industry agglomeration area, modern service industry agglomeration area, energy saving and environmental protection industry agglomeration area and other types of industrial agglomeration so that we can improve the concentration level of urban agglomerations' industries and enhance the agglomerated efficiency. Third, we should guide the industries to concentrate along major traffic lines, major river banks to take advantage of the transportation convenience and form industrial agglomeration belt. Via concentration and agglomeration of industries and enterprises, we will be able to enhance urban agglomeration's industrial radiating and driving capability.

## 5.2 Policy Suggestions on the Construction of China's Urban Agglomerations

To achieve the development strategy and construction goal of China's urban agglomerations, it is necessary to clarify the national centralized management organization through the establishment of four major safeguard mechanisms, namely, clear organization and coordination, dedicated public finance, specific laws and regulations, and comprehensive resource and environmental protection. It is necessary to establish a national-level Coordinated Development Management Committee for urban agglomeration management and Cross-city industry coordination organization for managing urban agglomerations' industrial development. It is important to establish dedicated public finance mechanism and public financial reserve system for sustainable urban agglomeration development. It is imperative to promote specific legislative work for the integrated development of urban agglomerations, formulate the Convention on Cooperation in urban agglomerations, revise the *urban and Rural Planning Law of the People's Republic of China*. Update the content of urban agglomeration planning, and introduce the *Measures for the Approval of Urban Agglomeration Planning*, the *Regulations for the Implementation of Urban Agglomeration Planning*, and technique guidance of urban agglomeration planning, establish strict and dedicated urban agglomeration planning practice system, practice scientific planning for urban agglomerations. It is critical to strengthen urban agglomerations' resource and environmental support capacity and sustainable development capacity, standardize statistical data collection, compile and publish China's Urban Agglomeration Statistical Yearbook [6].

### 5.2.1 *Innovating the Organization and Coordination Mechanism and Establishing the Management Committee of Coordinated Urban Agglomeration Development at Various Levels*

If we look back at the development course of China's urban agglomerations, we can see that the fundamental reason why it is difficult for urban agglomerations to form harmonious economic development pattern lies in the lack of unified, coordinated and effective competition rules and the lack of authoritative institutions to formulate and implement rules. Lewis Mumford [1] once pointed out that "if economic development is to be done better, it is necessary to establish a legally qualified regional authority with the right to plan and invest" so that the authoritative organization can have necessary administrative and regulatory power, responsibility and funding to ensure that they operate efficiently. The *National New Urbanization Plan (2014–2020)* clearly states that it is necessary to establish and improve the coordination mechanism of cross-regional urban development, with urban agglomerations as the primary platforms, to promote cross-regional inter-city industrial division of labor,

infrastructure construction, environmental governance to be efficiently coordinated and linked. We specifically focus on establishing the coordination mode of urban agglomeration management, innovating the factor market management mechanism of urban agglomerations, breaking down administrative barriers and monopolies, promoting the free flow and optimal allocation of production factors, establishing the mechanism of cost sharing and benefit sharing among urban agglomerations, promoting the co-construction and sharing of infrastructure and public service facilities, promoting the efficient allocation and open sharing of innovative resources, promoting joint regional environmental protection, control and treatment, and realizing the integrated development within urban agglomerations.

### **1. Clearly establish national focal management organizations and establish the national-level Urban Agglomeration Coordinated Development Management Committee**

We propose to establish a national-level Urban Agglomeration Coordinated Development Management Committee, which shall be the topmost urban agglomeration development and planning coordination authority, led by the State Council, belong to the National Development and Reform Commission. The Urban Agglomeration Economic and Social Development Planning, Urban Agglomeration Urban System Planning and Urban Agglomeration Land Use Planning as compiled by the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development and the Ministry of Nature Resources shall all be combined into an integrated Planning Document under the leadership of the Urban Agglomeration Coordinated Development Management Committee. The master plan of Urban Agglomeration will be compiled and approved by the National Urban Agglomeration Coordinated Development Management Committee, and the planning and implementation are organized and implemented by the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development and the Ministry of Nature Resources. The National Urban Agglomeration Coordinated Development Management Committee will be focused on the overall planning and governance of urban agglomerations and their overall economic development related issues, especially for urban agglomerations that are cross-provincial, such as the Yangtze River Delta Urban Agglomeration, Chengdu-Chongqing Urban Agglomeration, Beijing-Tianjin-Hebei Urban Agglomeration, and the Middle Reaches of the Yangtze River Urban Agglomeration. The National Urban Agglomeration Coordinated Development Management Committee aims to break local protectionism, establish a common market of urban agglomerations, realize the benefit sharing mechanism of urban agglomerations, and promote the governance and coordination structure of urban agglomerations to form a new system with equal interaction, mutual benefit and mutual regulation.

The National Urban Agglomeration Coordinated Development Management Committee shall have the authority to govern and allocate fund in regional environmental remediation or major infrastructure construction and have the authority to advocate for regional financial loans, so that it has certain economic control ability

and investment management ability, so as to realize the development priority of the overall interests of the region.

## **2. Clearly establish local management department, and establish the local-level Urban Agglomeration Coordinated Development Management Committee**

The local-level Urban Agglomeration Coordinated Development Management Committee shall be led by the provincial government. It will combine and integrate the economic and social development planning of urban agglomerations, originally compiled by the provincial Development and Reform Commission, the planning of provincial urban systems, originally compiled by provincial Department of Construction and land use planning, originally compiled by the provincial Department of Land Resources into one single planning document. The master plan of urban agglomeration at the provincial level will be compiled and approved by the local Urban Agglomeration Coordinated Development Management Committee, and the planning will be implemented by the provincial Development and Reform Commission, provincial Department of Construction and provincial Department of Nature and Resources, respectively. More than half of the members of the local Urban Agglomeration Coordinated Development Management Committee should be independent experts and scholars who will play important roles in the approval, arbitration and adjustment of the planning. The local Urban Agglomeration Coordinated Development Management Committee will focus on the overall planning and governance of provincial level urban agglomerations, such as the Central Plains Urban Agglomeration, Shandong Peninsula Urban Agglomeration, the Central Shaanxi Urban Agglomeration, the Northern Slope of the Tianshan Mountains Urban Agglomeration, Areas in Ningxia along the Yellow River Urban Agglomeration, the Central Shanxi Urban Agglomeration, the Central Guizhou Urban Agglomeration, and the Central Yunnan Urban Agglomeration. Just like at the national level, the local-level Urban Agglomeration Coordinated Development Management Committee also aims to break local protectionism, establish a common market among urban agglomerations, realize the mechanism of benefit sharing in urban agglomerations, and promote the governance and coordination structure of urban agglomerations to form a new system with equal interaction, mutual benefit and mutual regulation at the provincial level. Similarly, as at the national-level, the local-level Urban Agglomeration Coordinated Development Management Committee shall also enjoy the authority to govern and allocate fund in local environmental remediation or major infrastructure construction and have the authority to advocate for local financial loans, so that it has certain local economic control ability and investment management ability, so as to realize the development priority of the overall interests of the local area.

### ***5.2.2 Innovating Public Finance Mechanisms and Establishing Public Financial Reserve System for Urban Agglomerations***

Public finance is an important guarantee for the construction and maintenance of urban and rural areas. A considerable proportion of public financial expenditure is spent on urban and rural infrastructure construction and the development of urban and rural public utilities. An urban agglomeration is an integrated urban and rural area with high density of closely integrated cities, public finance is an important guarantee to meet the needs for resource allocation and optimal spatial layout in urban agglomeration area.

#### **1. Public finance plays an important role in the process of implementing urban agglomeration planning**

Urban agglomeration planning is based on the overall social interests of urban agglomeration area, and its operation must be supported by strong economic input in order to ensure that planning does not deviate from the orientation of the overall value of its society. Urban agglomeration planning can only be adequately implemented with sufficient economic and financial support from public finance. The role of public finance in the implementation of urban agglomeration planning is mainly reflected in the following aspects. The first aspect refers to the direct investment in urban agglomeration construction. The government is responsible for organizing the implementation of urban agglomeration planning. The fund will be invested directly to construction projects relevant to urban agglomeration development, such as cross-regional road network facilities, water supply and sanitation facilities, and other public facilities to achieve the goals of the planning. The second aspect refers to the raised funds for the construction and development of urban agglomerations from stock or debt options. The government, through the necessary procedures, may issue fiscal bonds to raise funds for the construction and development of urban agglomerations. The third aspect refers to regulating the construction activities and investment in urban agglomerations to allow for balanced financial support for various construction projects with different priorities. Governments can promote or limit certain investment and construction activities through tax leverage in order to achieve the objectives of urban agglomeration planning. Examples include the introduction of investment adjustment tax, or exemption from part of the development project business tax and transaction tax. The former intend to limit certain investment and construction activities and to curb the overdevelopment, while the latter intend to encourage the development of projects in specific areas with higher priorities.

#### **2. Establishing public finance mechanism and professional committee of public finance for urban agglomerations**

As a public policy, urban agglomeration planning can be implemented and realized only with sufficient and strong economic support. As an important means of providing economic support, the allocation of public finance in urban agglomeration must

be coordinated with the policy of implementation of urban agglomeration planning, which is often reflected not only in the spatial layout of urban agglomeration, but also in the time arrangement, so that the construction of urban agglomeration can be carried out in an orderly manner. For this reason, we propose to establish a professional committee of public finance in urban agglomeration similar to the Council of the European Union under the Urban Agglomeration Coordinated Development Management Committee to jointly coordinate the fiscal policies of the region and jointly exercise the power of regional financial integration. This regional institution must be established based on the voluntary cooperation of local governments in urban agglomerations.

### **3. Establishing the public financial reserve system and supervision system for urban agglomerations and constructing and sharing regional public goods**

Drawing on the experience of the European Union (EU) to build and share regional public goods, the source of funds can be drawn from establishing regional common finance system, so as to avoid the repetitive construction of competing for national financial resources in the construction of public transport. The financial structure of the regional public goods shall be allocated proportionally. The entire region will support a portion since everyone will benefit from public goods, and governments of locations that enjoy higher benefit could share more based on their corresponding benefit received. The construction of the regional information Network and the cost of information analysis and dissemination should be shared by the common financial system of the entire region. As for the common financial sources in urban agglomerations, we can also draw on the experience of the European Union. First of all, the incomes that are prone to cause allocation contradiction shall be shared among participating parties. For instance, the income from the regional transport network shall be proportional to the investment, and part of the income can be allocated into the reserve of regional financial resources, to avoid repetitive construction. In the meantime, value-added-tax revenue can also be properly paid or surrendered to the Urban Agglomeration Coordinated Development Management Committee in proportion to the local GDP.

In addition, it is also essential to establish a supervision system for common fiscal expenditure in urban agglomerations. The surrendered portion of the financial income from various government needs to be supervised by independent financial supervision institutions.

#### ***5.2.3 Promoting the Establishment of Legislative System and Strengthening the Authority and Legal Status of Implementing Urban Agglomeration Planning***

At present, the policy regulations and the integrated planning foundation among various governments within an urban agglomeration in China are very weak. It is urgent

that we start to establish sufficient legal status for the cooperation of various governments within the urban agglomeration so that we can formulate the integration policy and plan for urban agglomerations and provide the policy regulations and planning guarantee for government cooperation within the urban agglomeration. Currently, China's existing laws and regulations only state that by all levels of government only have authority to manage matters within its jurisdiction. Cross-jurisdictional matters can only be administered by higher level authorities. There is very little information regarding the issue of regional and local government cooperation, and there is almost no information regarding the specific provisions and regulations on government cooperation in the Constitution and local organization laws. This often makes the cooperation between governments within urban agglomerations lack legal protection. Therefore, it is imperative that the government cooperation within urban agglomeration should be clearly established into the legislative system so that we can formulate the integration policy and plan for urban agglomerations and provide policy regulations and planning guarantee for government cooperation within urban agglomerations.

### **1. Establishing laws and regulation to promote the integrated development of urban agglomerations and formulating a convention on cooperation among urban agglomerations**

As early as 1787, the United States defined the legal status of interstate agreements in the Constitution, and the States were bound by contracts, similar to those in commercial transactions where participating parties were bound by the contract. In the 1920s, such interstate agreement began to be applied widely to the areas of protection of natural resources, criminal jurisdiction, control of public utilities, taxation and interstate auditing. From 1941 to 1969, the United States has enacted more than 100 interstate agreements. During this period, States changed from passive receivers of such agreements to active engagers of initiating such agreements, and interstate agreements were seen as an effective way for intergovernmental cooperation. Interstate agreements address a range of issues, in particular the management of rivers, such as the rational distribution of water resources. In order to guarantee the legal effect of the interstate contract, the United States Constitution and related laws decide that the effectiveness of interstate agreements takes precedence over previous regulations enacted by the member States, and even takes precedence over subsequent newly enacted regulations. Once they have participated in interstate agreements, the participating States cannot arbitrarily modify or revoke the agreement unilaterally, and the executive body of the agreement is defined in the terms of each interstate contract. EU regional cooperation is also based on a complete legal system. EU Member States have developed legal systems to promote regional cooperation. For example, Germany's Federal Constitution stipulates that the federal government and the state government have a coordinated relationship, in which the federal government must assume a 50% share of any tasks. The *Regional Economic Framework Plan* of Germany is even regarded as the most exemplar model for regional cooperation .



Drawing on these regional cooperation experiences, we propose to create relevant legal status for urban agglomeration development and planning as well. First of all, in order to further improve the authority of urban agglomeration government cooperation, the Chinese government can also include provisions in existing laws and regulations on “promoting the coordinated development of urban agglomerations’ economy and society, regulating the gap between urban agglomerations” and “clarifying the legal effect of inter-provincial agreements”. We propose to establish special executive organizations in accordance with the specific areas of cooperation to fully implement the relevant agreements and effectively enhance the implementation of government cooperation. Secondly, we should formulate the *Urban Agglomeration Conventions* jointly supported and agreed upon by the member cities of the urban agglomeration in order to strengthen the standardization and legalization of local government regulation and control policies. At the same time, it is also important to construct the government cooperation policy of urban agglomerations, standardize the reasonable competition among urban agglomeration governments, eliminate local protectionism, establish the dispute settlement mechanism of various enterprises’ trade and investment in different provinces and regions, and gradually form a unified mechanism for complaint, regulation and arbitration.

## **2. Revise the Urban and Rural Planning Law of the People’s Republic of China or introduce the Regional Planning Act, supplement contents of urban agglomeration planning**

Urban agglomeration planning is one of the important means for the government to implement macro-control of regional development and urban system evolution. How to translate various “reasonable goals” of urban agglomeration planning into concrete and feasible “action process” is the key to the success of implementing urban agglomeration planning. At present, China’s urban and rural planning is under the regulation of the *Urban and Rural Planning Law of the People’s Republic of China*. The overall land use planning is under the regulation of *Land Administration Law of the People’s Republic of China*. Urban agglomeration planning, however, does not have any specific laws or regulations to guarantee its successful implementation. This seriously affects the authority of urban agglomeration planning, and also makes the urban agglomeration planning gradually marginalized, lost its proper position and guidance in the spatial planning system. Moreover, due to the lack of legal status, urban agglomeration planning is often not put into practice, which makes it merely a descriptive exercise that departs from the original intent of planning and loses the legal justification for its existence [7]. For this matter, it is urgent to establish relevant laws and regulation to ensure successful implementation of urban agglomeration planning.

Looking at any modern legal states, we see that the administrative power of the state is granted by law, and the policy formulation and management duties of the administrative organizations are based on the law, especially the administrative law. As an important content of public policy and management means, the main body,

content, compilation method and means of implementation of urban agglomeration planning should be stipulated by the corresponding laws. Many countries in the world have enacted a series of laws and regulations related to regional planning. These include Japan's *Land Use Planning Act (1974)*, the *Capital Circle Preparation Act (1956)*, the United States' *Regional Renewal Act (1961)*, Germany's the *Federal Construction Act (1960)*, the *Regional Planning Act (1965)*, France's the *Land Planning Act (1941)*, the British's *Industrial Development Act (1945)*, the *Industrial Layout Act (1945)*, and the like [8]. For China, however, there is still a blank in this respect. At present, only individual provinces have begun to try to provide urban agglomeration planning legal status in the form of local legislation, such as the *Hunan-Changsha-Zhuzhou-Xiangtan Urban Agglomeration Regional Planning Regulations* passed in Hunan Provincial People's Congress on September 29, 2007. Therefore, it is imperative for us to legislate the urban agglomeration planning at the early stages of urban agglomerations' development, give the urban agglomeration planning due legal status, and connect with various planning laws and regulations such as the current *Urban and Rural Planning Law of the People's Republic of China* and the *Land Administration Law of the People's Republic of China*, form a relatively complete planning and regulatory system, clarify the division of labor between different spatial planning systems, the administrative subject of compilation and implementation of urban agglomeration planning, and makes the urban agglomeration planning truly become a new "system," and truly implemented. After the formulation and approval of urban agglomeration planning, it shall then acquire legal status. With the legal status of urban agglomeration planning established, the people could then rely on such planning to properly restrict the administrative behaviors of local government. In addition, higher administrative governments can also use them to approve or disapprove certain acts proposed by local governments. Through urban agglomeration planning, we can strengthen the guidance and restraint role of local planning and industry planning as well.

### **3. Rely on the authority of the Standing Committee of the National People's Congress to highlight the legal status of strengthening urban agglomeration planning**

Since there is no urban agglomeration planning laws or regulations established as of yet, the finished urban agglomeration planning is considered to have legal effect and binding force as long as it is adopted by the Standing Committee of the National People's Congress. With established legal status, policy barriers and administrative barriers can be removed to truly realize resource sharing, open markets to each other, the flow of scientific and technological talents, close industrial cooperation and cross-regional infrastructure co-construction, and promote the sustainable development of urban agglomerations.

### ***5.2.4 Scientifically Preparing and Implementing Urban Agglomeration Planning and Establishing Urban Agglomeration Planning and Practice System***

#### **1. Define the entity of implementing and compiling urban agglomeration planning**

The *National New Urbanization Plan (2014–2020)* clearly proposes that it is necessary to formulate and implement urban agglomeration planning in an integrated manner, to clarify the development objectives, spatial structure and development direction of urban agglomerations, to clarify the functional orientations and division of labor of the cities within the urban agglomeration, to coordinate the layout of transportation infrastructure and information network, and to accelerate the process of urban agglomeration integration. We should strengthen the connection between urban agglomeration planning and urban system planning, land use planning and ecological environment planning, and conduct planning environmental impact assessment based on environmental laws and regulations. The central government is responsible for the planning and organization of urban agglomerations across provincial administrative boundaries, and provincial governments are responsible for the planning and organization of urban agglomerations within the administrative boundaries.

#### **2. Introduce the Measures for Approval and Compilation of Urban Agglomeration Planning**

In order to standardize the compilation of urban agglomeration planning and improve the scientific nature of compiling and approve urban agglomeration planning, it is suggested to introduce the *Measures for Approval and Compilation of Urban Agglomeration Planning* (the Measures for short) as soon as possible, considering the contents of relevant national laws and regulations. In the Measures, we need to clarify the relevant provisions of urban agglomeration planning, including: ① the definition criteria for the spatial extent of urban agglomerations; ② qualification management system and conditions for urban agglomeration planning; ③ prohibition provisions for urban agglomeration planning; ④ qualification and requirements of professional and technical personnel in urban agglomeration planning; ⑤ preparation requirements for urban agglomeration planning; ⑥ technical specifications and requirements for approval and compilation of urban agglomeration planning; ⑦ provisions of expert and public participation; ⑧ approval procedures for urban agglomeration planning. By introducing the Measures, we aim to focus on the following aspects. First, we should integrate the new system of urban agglomeration planning into urban and rural planning and clarify the relationships among the planning at various administrative levels. We need to especially strengthen the roles and specify the contents of provincial and municipal urban system planning and urban agglomeration planning. Second, we must effectively integrate the currently separated urban agglomeration planning and management, highlight the role of planning as a public policy, and properly integrate with the effective control and protection of ecological green space, surface water body, historical and cultural values, and infrastructure land use. Third, we

must emphasize the mandatory provisions of urban agglomeration planning instead of regarding it merely as a guidance document. Fourth, we need to broaden the level of public participation in the planning and review process at all levels.

### 3. Issue the Technical Specification for Urban Agglomeration Planning

Urban agglomeration planning is a program of actions to guide eventual sustainable urban agglomerations development. A well thought-of, prepared and compiled plan will be the government's greatest wealth and largest capital in effective governance. On the contrary, a cursive plan could result in huge waste of governmental and other resources. It must first be established that urban agglomeration planning is not a simple "summation" of individual urban planning in the region, but a strategic deployment and regulation of the overall development of urban agglomeration based on the regional-level consideration of the entire urban system [9]. In recent years, with the rise of urban agglomerations, the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development, the provinces and autonomous regions have all compiled different levels of urban agglomeration planning, which have played important roles in guiding urban agglomerations' development. On the other hand, because urban agglomeration planning does not belong to any of the existing legal spatial planning systems, the lack of unified standards for urban agglomeration planning and the lack of long-term stability of the establishment of organizational institutions for long-term tracking and supervision result in insufficient continuity of urban agglomeration planning, and very different urban agglomeration planning at different levels and regions. Moreover, the planning for urban agglomeration and the planning for urban and rural areas are often mismatched in both time and space, which renders the guidance of planning for urban agglomerations is hardly put into practice.

Therefore, it is necessary to put in place technical specifications for urban agglomeration planning to guide scientific and practical urban agglomeration planning. The *Technical Specification of Urban Agglomeration Planning* is a series of policies and technical requirements for meeting the demands of urban agglomeration development, providing solutions and answers to outstanding problems and planning-related hot issues of general concern to the public in different periods. The *Technical Specification* aims to emphasize, deepen, and supplement the policy and technical issues in urban agglomeration planning based on the current Urban and Rural Planning Act, Land Act and other existing planning standards.

The mandatory requirement of the *Technical Specification for Urban Agglomeration Planning* requires clearly delineated "three zones," that is, the construction forbidden zone, the construction restricted zone, and construction suitable zone, and "four lines", that is, the Green Line of ecological green space protection and control, the Blue Line of the urban surface water body protection and control, the Purple Line of historical and cultural district and the historical building protection, and the Yellow Line of the regional infrastructure land use control. Once the urban agglomeration planning is approved and implemented, the prescribed "three zones" and "four lines" must then become mandatory binding contents with strong rigidity and

maintain stability during the planning period, and the development of any cities in the urban agglomeration must strictly abide by it.

The *Technical Specification for Urban Agglomeration Planning* should also provide detailed guidance for the development nature of urban agglomerations, the total amount of construction land in each city, the functional structure and planning policies, and the location of regional major infrastructure. It is suggested that the National Urban Agglomeration Coordinated Development and Management Committee organizes the preparation and compilation of the *Technical Specification for Urban Agglomeration Planning*; the local Urban Agglomeration Coordinated Development and Management Committee prepares the detailed implementation rules of the *Technical Specification for Urban Agglomeration Planning*. The procedures for compiling the *Technical Specification for Urban Agglomeration Planning* include the formulation, feasibility study, preparation, reconsideration, evaluation and approval, publication the implementation, and modification. Through the compilation of the *Technical Specification for Urban Agglomeration Planning*, the planning of urban agglomeration in China will be integrated into the scientific and standardized track of planning compilation. The key contents of *Technical Specification for Urban Agglomeration Planning* include in-depth analysis of the dynamic mechanism, developmental conditions and limiting factors of urban agglomerations' formation and evolution, the scientific orientation, development goals and development strategies of urban agglomeration development based on local resources and environmental carrying capacity, the concrete guidance and direction of achieving high degree of integration and urbanization in urban agglomerations, the rational spatial radiation range and spatial structure of urban agglomeration, the planning for urban agglomeration supporting systems and space control planning, the policy level, finance level, and organization and coordination level security mechanisms that can ensure healthy and sustainable urban agglomeration development.

#### 4. Establish urban agglomeration planning practice system

Judging from the current status of China's urban agglomeration planning, it is clear that the compilation of urban agglomeration planning in China is quite chaotic. Various colleges, universities, scientific research institutions, planning companies, organizations and even foreign organizations all intend to compile their versions of the master plans for China's agglomerations with different types, different goals, and different spatial scales. Such chaotic "urban agglomeration planning" only serves to confuse the local governments and muddle the quality of urban agglomeration planning. Apparently, the planning market for this new type of urban spatial organization, urban agglomeration, needs to be standardized. This is especially true if we look at successful stories of the Department of Construction, Department of Land Resources, and Department of Tourism, which all have standardized their practice systems, introduced market competition system, and standardized the planning entry and exit thresholds for urban planning, land planning and tourism planning. Many studies have suggested that the lack of a standardized urban agglomeration planning practice system is the main reason why the planning and compilation of urban

agglomeration have been “snapped up” by various Ministries and Departments at the same time, partially causing the planning practices to get out of control.

In order to provide better management of the entities for urban agglomeration planning compilation, standardize the planning and compilation of urban agglomerations, and ensure the quality of urban agglomeration planning, we propose that we shall implement the standardized practice system of urban agglomeration planning as soon as possible. Entities engaged in the planning of urban agglomeration shall obtain the *Qualification Certificate for the Compilation of Urban Agglomeration Planning* (Qualification certificate for short). The compilation entities shall perform the planning and preparation business of urban agglomeration within the scope of business stipulated in the *Qualification Certificate*. Similarly, for any urban agglomeration planning, they must be accomplished by entities with the *Qualification Certificate*.

### ***5.2.5 Standardizing the Statistical Data Collection Procedure, and Compiling and Publishing Annually the Statistical Yearbook of China's Urban Agglomerations***

The lack of standardized statistical data collection procedure in the development of China's urban agglomerations has brought great difficulties to carrying out research, conducting dynamic monitoring and system evaluation. It is suggested that the relevant statistical departments should introduce a standardized statistical index system for the social and economic development of urban agglomerations in China, establish a standardized database system of social economy in urban agglomerations, and standardize statistical data collection procedures. On the basis of standardized data, measurement, and criteria, we propose to compile and publish annually the *Statistical Yearbook of China's Urban Agglomerations*, or at the very least devote a separate chapter in the current *China's Statistical Yearbook* and the *China's Urban Statistics Yearbook* for the release of socioeconomic statistics for urban agglomerations in China. Accordingly, the provincial statistical yearbooks shall increase the standardized statistics of the urban agglomerations in which the province has a part in.

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