

Peri-Beijing–Tianjin–Hebei Cross-boundary Mega-region Planning towards Sustainability in Urbanizing China

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1. Introduction

China has experienced unprecedented urbanization and the urban population increased from 10.64% in 1949 to 49.95% in 2010 (Zou, 2010; Zhou, et.al, 2013). Under the rapidly urbanization, mega-region planning have become the motors of the global economy in the accelerated urbanization. Facing the fiercely competition pressure between metropolitan areas, cross-boundary mega region are engaged actively in cooperation and collaboration in planning and institution building in an effort to turn urbanization and globalization as far as possible to achieve sustainability.

It is well known that there has been a mega-region planning fever since 2000s in post-reform China (Lin, 2001; Yang and Wang, 2008). There are abundant of research on Chinese urbanization. However, recent studies on mega-region planning are confined to the discussion of city-region or urbanization pace and rate of China. This study attempts to discuss the mega-region Peri-Beijing-Tianjin-Hebei Area (*Huanshouduquan*, PBTHA) planning as a cross-boundary case to probe into the significances and difficulties of the cross-boundary mega-region planning. It is not only preliminary enquiry on the practice of mega-region planning, but also an experimental attempts to discuss the cross-boundary planning and mega-region governance at the international planning platforms.

This paper is organized as follows. The first part considers the current status of mega-region area and mega-region planning in post-reform China to provide a background for this study. Following that, the paper introduces the characteristics of the PBTHA. Three main features are analyzed in this part. In the third section, the major issues and main ideas of the planning are discussed. It addresses the difficulties and main contributions of the planning. Moreover, the process of planning implementation is analyzed and assessed. Experience in the cross-boundary planning is discussed in the final parts.

1.1 Chinese Mega-region Area Planning

In recent years, many city governments have attempted to build mega-region area planning during the transition from state socialism to market economy in post-reform China. In order to enhance the competitiveness of the region to achieve sustainability, mega-region planning is becoming a new initiative in Chinese spatial planning (Gao, 2004; Qian and Xie, 2004; Zhang, 2003; Luo and Shen, 2008). A series of mega-region planning has been phased and proposed from central government to provincial government, including Jingjinji Mega-region planning, Pearl-delta River Mega-region planning, Chengyu Mega-region planning. Most parts of mega-region planning are cross-boundary plan, which cover different provinces and the difficulties and significances of the planning are self-evident.

1.2 Peri-Beijing-Tianjin-Hebei Area

Peri-Beijing-Tianjin-Hebei Area (*Huanjingjinji*, PBTHA) refers to those areas which locates around the outside of the capital city of Beijing (*Huanshoudu*) and includes four prefecture-level cities Zhangjiakou, Chengde, Langfang and Baoding. The four cities include 12 districts, 6 cities, 45 counties and 359 towns with a total area of 103, 000 km². The Upper Peri-Beijing

area (*Huanshoudu Qianyan Diqu, UPBA*) includes those 17 counties, which locate tightly with the capital city of Beijing and have a total area of 34.8 km².

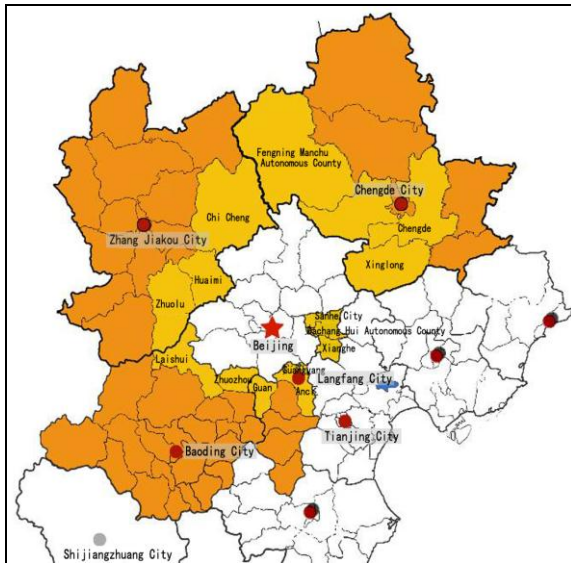


Figure 1: PBTHA Cities

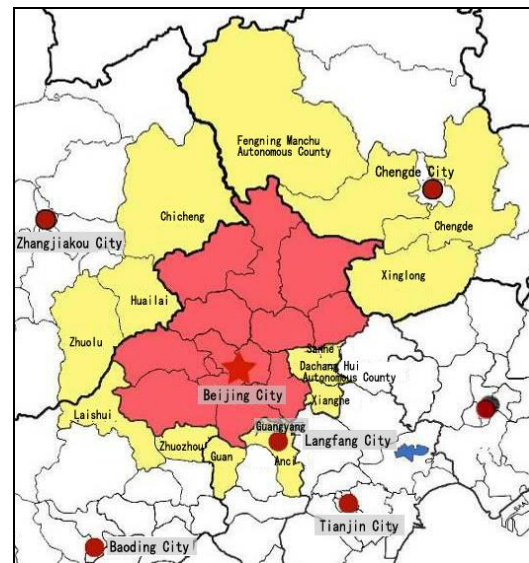


Figure 2: UPBA Cities

Table 1 PBTHA Cities Statistics

SCOPE	AREA (km ²)	TOTAL POPULATION	Urban population	The urbanization rate (%)	GDP (Billion Yuan)	GDP per capita (Yuan)
Zhangjiakou	37,000	4235,000	1863,000	44.0	80.03	19,000
Chengde	40,000	3442,000	1330,000	38.6	76.01	22,000
Langfang	6,000	4122,000	1950,000	47.3	114.75	28,000
Baoding	21,000	11017,000	3950,000	35.9	173.0	16,000
Sum	103,000	22816,000	9093,000	39.9	443.8	19,000
Hebei Province	188,000	70344,000	30769,000	43.7	1723.55	246,000
Proportion of four cities in total province (%)	548,000	324,000	296,000	—	2.57	—
Beijing	16,000	17550,000	14918,000	85.0	1186.59	69,000

Sources: HBSB, 2009

2. Characteristics of PBTHA

2.1 Significant differences in natural condition

The total area of PBTHA is five times more than the area of Beijing and UPBA area is twice more than the total area of Beijing. There are significant differences in natural condition of the four cities of PBTHA. Besides the huge differences in the total area, the natural condition varies with the topography and natural landscape. The cities in the northwestern part, Zhangjiakou and Chengde, are mainly mountains and hilly and the cities in the southeastern part, Langfang and Baoding, are mainly plain landform. Thus, the huge differences of natural condition lead to the imbalance distribution of the regional population. The total population of four cities is one thirds of the population of Hebei province, equals to 1.4 times more than the population of Beijing. Furthermore, the total population of UPBA is one thirds of the population of Beijing and the urban population difference is even larger. The urbanization

rate of UPBA is merely 37.3%, compared with the urbanization rate of Beijing of 84.9% in 2008.

Table 2 UPBA Cities Statistics

SCOPE	TOTAL POPULATION	AREA (km ²)	Urban population	The urbanization rate (%)	GDP (Billion Yuan)	GDP per capita (Yuan)
UPBA	5629,000	33,000	2101,000	37.3	121.2	20,200
Beijing	16950,000	16,000	14391,000	84.9	912.2	60,100

2.2 Poor economic condition and primitive industrial level

Compared with the economic development of Beijing, the total GDP of PBTHA four cities are much lower. The per capita GDP of UPBA only accounts for one thirds of per capita GDP of Beijing. Among them, the economic development of Baoding and Langfang is comparatively higher than the economic development of Chengde. However, the per capita GDP of most parts of the counties are much lower than the average provincial per capita GDP level.

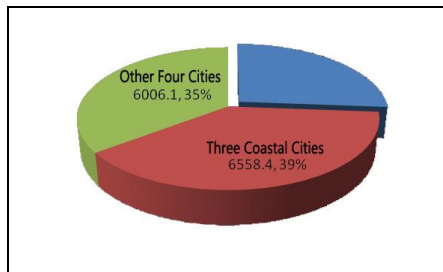


Figure 3: UPTHA cities and coastal cities economic proportion (0.1billion, %)

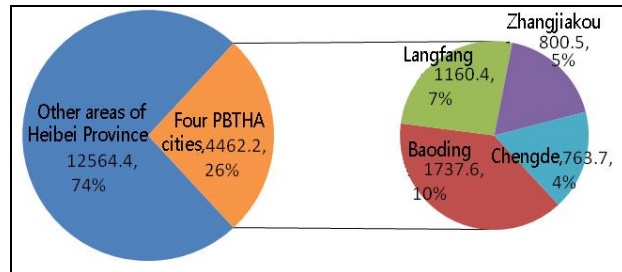


Figure 4: UPTHA cities economic proportion

Concerning the economic level of UPBA, the 17 counties could be divided into three groups, with the phenomenon of “east rich, west poor”. The first group includes those counties with GDP 10 billion above, including Sanhe, Zhuozhou and Xianghe, which accounts for 43.48% of total GDP of 17 counties. The second group includes those counties with GDP level between 5-10 billions, which accounts for 40.43% of total GDP of 17 counties. The third group includes the counties with GDP level above 5 billion.

In regard to the development level of the PBTHA four cities, all of them stay at the primitive industrial development stage. Most of the cities mainly focus on the development of heavy industry, which make a significant impact on the environment of the whole area.

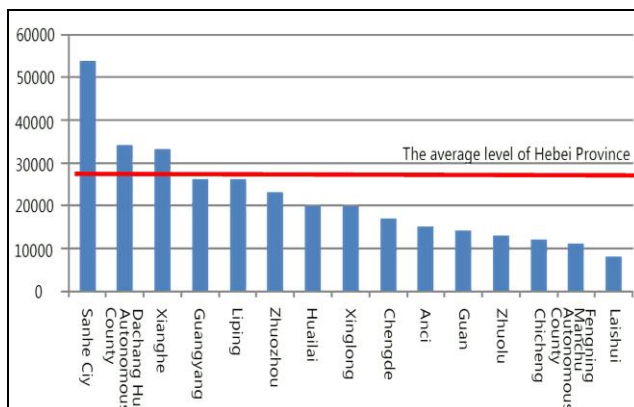


Figure 5: Per-capita GDP of UPBA Cities (Yuan)

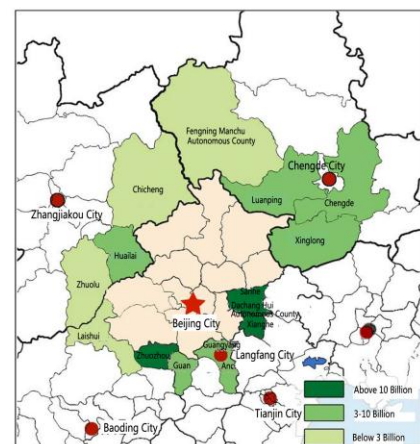


Figure 6: UPBA three groups

2.3 Imbalance Urbanization Development

Another significant feature of the whole area is the imbalance urbanization development. In 2009, the urbanization rate of PBTHA four cities are merely 39.9%, lagging behind the average urbanization rate of Hebei province 43.7% and national average rate of 46.6%. Regional differences of urbanization lie in different cities. Among the four cities, the urbanization rate of Langfang, Zhangjiakou, Baoding and Chengde is 47.3%, 44.0%, 35.9% and 38.6% respectively. However, the urbanization growth rate is comparatively amazing. The average PBTHA urbanization growth rate has increased from 32.0% to 40.1% with an annual increase rate of 1.35%.

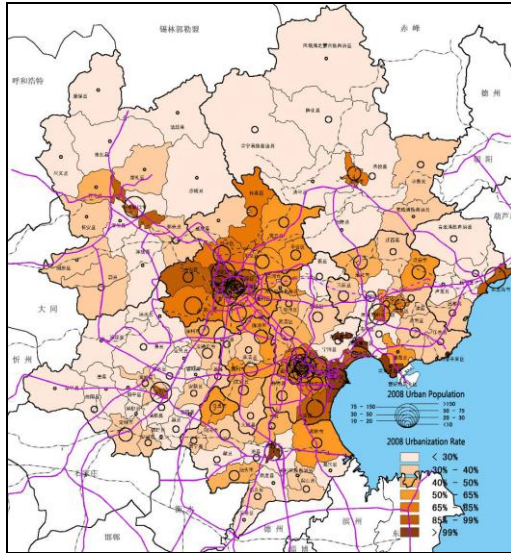


Figure 7: Urbanization Rate

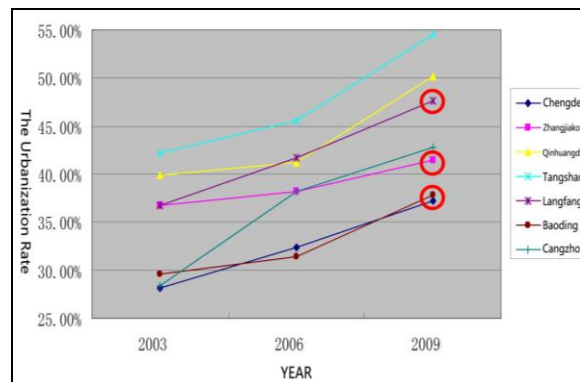


Figure 8: Urbanization Growth Rate

The urban population of four cities distribute along the traditional transportation corridors. The towns and counties are main attractors to the total population. As shown in Figure 9, towns contribute most to attracting urban population to cluster around the main urban area. It is suggested that the urbanization pattern of PBTHA shows a form of urbanization from below, different from those urbanization from above. Theoretically, the prefecture-level cities, often known as core cities, should be played a significant role in attracting urban population. However, the contribution index shown in the figure 9 suggests that the counties and towns play a more significant role in attracting urban population. This urbanization pattern identifies that there are regional inequalities of the cities of PBTHA.

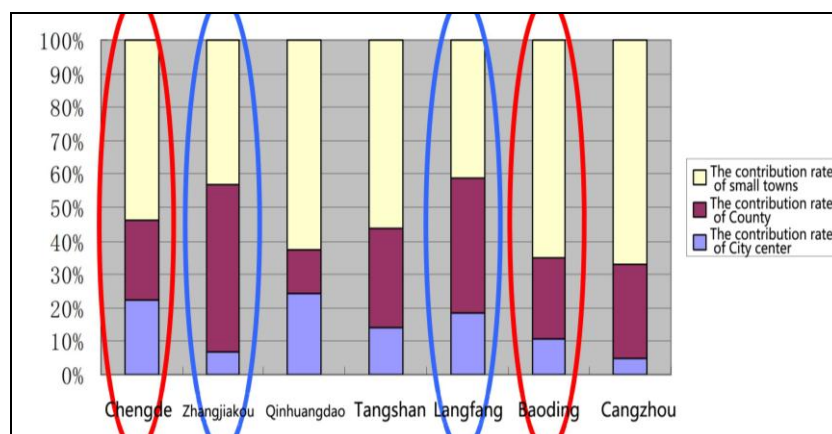


Figure 9: Contribution Rate of Towns/County/City Center

2.4 Discussion

Generally speaking, the three main features of PBTHA illustrate the significances and difficulties of the project that need to be solved and working on. The diverse natural

conditions contribute to the unequal development of the cities and different economic level of the cities. The unequal distribution of urban population attributes to the imbalance level of urbanization rate. The regional inequalities make the cross-boundary regional cooperation hard to put forward. Thus, the planning proposes a series of strategies and planning measures concerning the regional inequalities.

3. Key Issues of Cross-boundary Mega-region Planning

As discussed above, the PBTHA mega-region consists of four prefecture-level cities of Hebei province, Zhangjiakou, Chengde, Langfang and Baoding, which locate outside the capital city of Beijing. The PBTHA region can be seen as a new regional entity created by the Hebei provincial government. Previous research by Asian Development Bank has identified that there was a significant poor belt around the capital city of Beijing, quoted as Peri-capital Poor Belt (*Huanshoudu pingkun dai*)¹. The economic development of PBTHA cities has been lagged thousands of times behind the capital city of Beijing. Moreover, the PBTHA cities have less advantage in competition for foreign direct investment (FDI) and infrastructure projects such as railways and airports with the giant Beijing. As shown in figure 10, the different economic level between Beijing, Tianjin and the PBTHA cities had been exacerbated during 1994 and 2008.

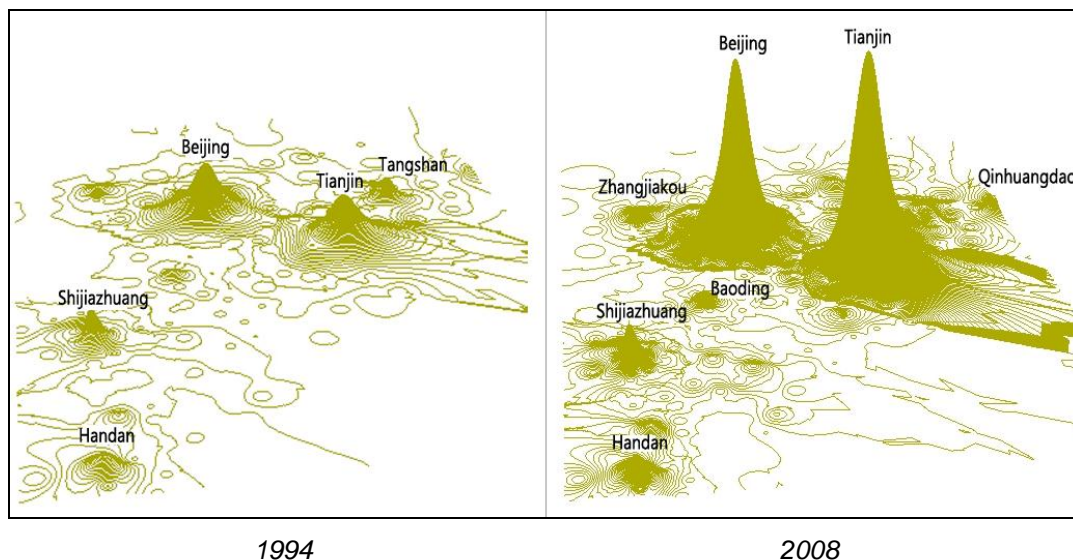


Figure 10 Jingjinji Cities Economic Energy Level

In order to alleviate the serious problems of vicious urban competition between Beijing and PBTHA cities, the provincial government of Hebei initiated the cross-boundary mega-region planning to coordinate the development of four cities to probe into a balance way to achieve sustainable development for both Beijing and PBTHA cities, when Beijing intends to rephrase its master plan. The provincial Construction Commission authorized the planning task to China Academy of Urban Planning and Design to produce the plan. The PBTH mega-region plan can be viewed as a blueprint for cooperation initiated by the higher-level provincial government of Hebei. Actually, it is the good wishes of Hebei province to solve its development problem rather than a cooperation and negotiation between Hebei and Beijing. Officially, major objectives of PBTH mega-region planning are stipulated.

- The first objective is to make use of the dominant role of the capital city of Beijing for regional economic development. The PBTHA region should become an engine of development in the Beijing-Hebei-Tianjin (*Jingjinji*) Metropolitan area. Most importantly, it will pursue a difference strategic development role to enhance the cooperation with Beijing, stimulating the development of northern regions of Hebei.
- The second objective is to alleviate problems of environmental pollution and serious vicious urban competition between PBTHA cities and Beijing and to enhance urban and regional competitiveness and achieve regional sustainability.

- The third objective is to improve the relationship between the PBTHA cities and Beijing. It is self-evident that development of PBTHA cities has not been benefited from its proximity to Beijing. On the contrary, Beijing plays a negative role in the regional economic development, plundering the capital and resources of the PBTHA cities. Many preferential policies were offered to manufacturing investors of Beijing, competing against the investment of the region and decreasing the competitiveness of PBTHA cities in manufacturing industry. The planning intends to probe into the adjustment of the relationship between Beijing and PBTHA cities.
- The fourth objective is to enhance regional competitiveness to achieve sustainability in post-reform China. Beijing is the capital city of China. It is undeniable that the role of PBTHA cities is also significant politically as well as economically.

Thus, the planning focuses on poverty alleviation between different regions, increasing of environmental protection, cross-boundary infrastructure construction and establishment and cross-boundary mega-region governance. It was a comprehensive process covering industrial development, spatial planning, environment protection, poverty alleviation and more.

3.1 Poverty Alleviation

The planning proposes industrial development to alleviate the regional poverty and inequality regional economic distribution. It plans to increase the economic level of PBTHA four cities to a certain level. The GDP will achieve 35% of the total GDP of Hebei province. The added-value of tertiary industry will account for 45% and the total industry of the area will upgrade from the labor intensive manufacturing industry to capital intensive industry. It advocates developing low carbon industry and high-tech industry. It also illustrates to transform and upgrade the traditional equipment manufacturing industry, electronic information industry and urban industry and actively incubate new energy, new material and bio-industry. Furthermore, it calls for actively develop leisure industry, modern logistics industry, financial services,

On the other land, the planning proposes to accelerate the urbanization through an accelerated urbanization strategy to achieve poverty alleviation. The urbanization strategy is stipulated as follows:

- The first strategy is to enhance the development of the urban center of PBTHA four cities, Chengde, Zhangjiakou, Langfang and Baoding. The first strategy is to adopt the urbanization from the above strategy to reinforce the development role of urban center cities. The specific different development strategy of each city is as follows:
 - Changde, previously known as Jehol or Rehe, situated northeast of Beijing, best known as the site of the Mountain Resort, a vast imperial garden and palace formerly used by the Qing emperors as summer residence, aims to become international tourist city. It is phased to become an extra-large city with the population of over 1 million in 2020.
 - Zhangjiakou, bordering Beijing to the southeast, best known by its critical transport node for travel between Hebei and Inner Mongolia and connecting northwest China and Beijing, aims to build regional center city and ecological tourist place with a population of over 2 million in 2020.
 - Langfang, located approximately midway between Beijing and Tianjin and bordering Baoding to the southwest, Beijing to the north and Tianjin to the east, is the smallest prefecture-level division in Hebei province by land area. It intends to adjust the administrative zone, promote the urban development with different parts of districts and incubate it become the regional growth pole for the whole mega-region area.
 - Baoding, bordering Beijing to the northeast and Shanxi to the west, aims to establish capital modern infrastructure and high-tech base, national historic and cultural city and national low-carbon experimental zone, aims to achieve over 2 million population in 2020.
- The second is the strategy to develop new towns. The planning proposes a series of new towns in PBTHA to construct the public transportation and railways by two sides.

- The third strategy is to improve the quality of the urbanization of the towns and counties from the below. Counties and towns are considered the bottom-up engine for the urbanization from below. The planning proposes to improve the construction of the towns and counties through different channels, including increasing the public transportation and public facilities, promoting the upgrade of the industries.

3.2 Regional Spatial Strategy

Due to the different distribution of regional resources, the planning stipulates a spatial development strategy, which is centered to build multi-layer spatial development framework and adopt a diverse strategy to different cities. The establishment of the multi-layer spatial development framework is based on the transportation corridor.

In the first place, the regional spatial strategy is centered on the spatial strategy of Beijing. Concerning that Beijing intends to develop along the transportation corridors towards the east and north side, the first layer is centered on Beijing metropolitan region, called commuter ring. It includes the towns and counties within a radius of 30 kilometers of East fourth Ring Road and the North Fourth Ring Road. The first layer served for Beijing and the spatial structure is transited from the corridors-led to network. The layout is consistent with the urban transportation of center city of Beijing.

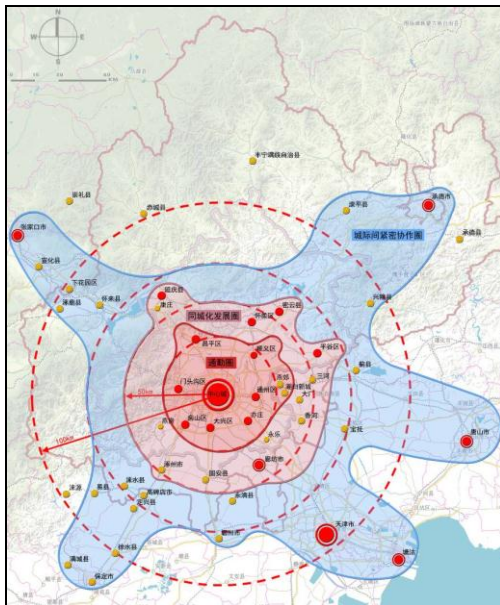


Figure 11: Regional Spatial Layout

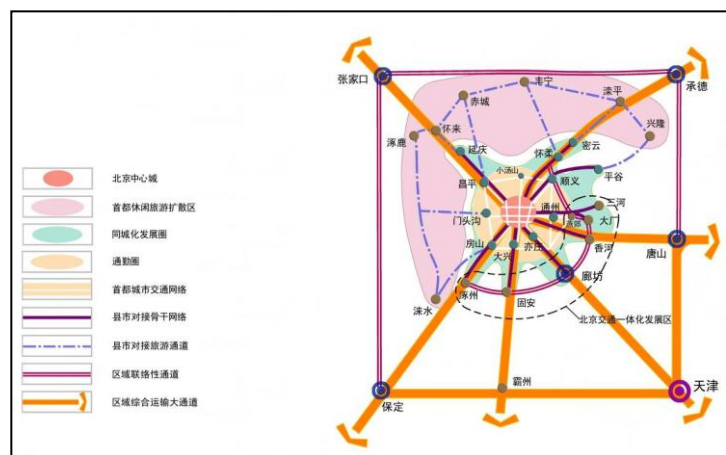


Figure 12: PBTHA Transportation Spatial Structure

The second layer is the city development circles. It is extended 20-25 kilometers out from the commuter ring. It allocates the new towns and those core nodes to serve for the capital. It serves for the transportation of Beijing and reinforces the main roads connection between those new towns and Beijing to avoid the outside sleeping cities.

The third lay is inter-city cooperation circle, which is centered within a radius of 70 kilometers and extended to a radius of 150 kilometers to Beijing, Tangshan, Baoding, Zhangjiakou and Chengde-which serves for the industry transition and commercial and logistics connection. It depends on the inter-city transportation and extends along Beijing six radial integrated transport corridors and distributes outside center cities and professional integrated nodes.

The forth layer is Jingjinji North integrated development zone, which is based on a radius of 150-200 kilometers and covered those metropolitan areas to promote the competitiveness of capital city area.

Generally, the whole spatial structure will be formed as the figure 12 shown.

3.3 Environmental Protection

The planning stipulates a series of measures to promote environmental protection to achieve sustainable development. The most important part of the planning is to phase an ecological planning protection structure (Figure 13), which is structured by green screen-corridor-ring. Green screen is to protect and restore those northwestern mountains, water conservation areas, and to reinforce the protection of natural protection areas and forests to protect the regional ecological security barrier.

The green corridors are six main rivers from the mountains to the plains to protect the river ecosystem of water and improve the water landscape.

The green rings are those green ecological corridors, serving as the significant ecological isolated belt to effectively improve the spatial environment of the PBTHA mega-region.

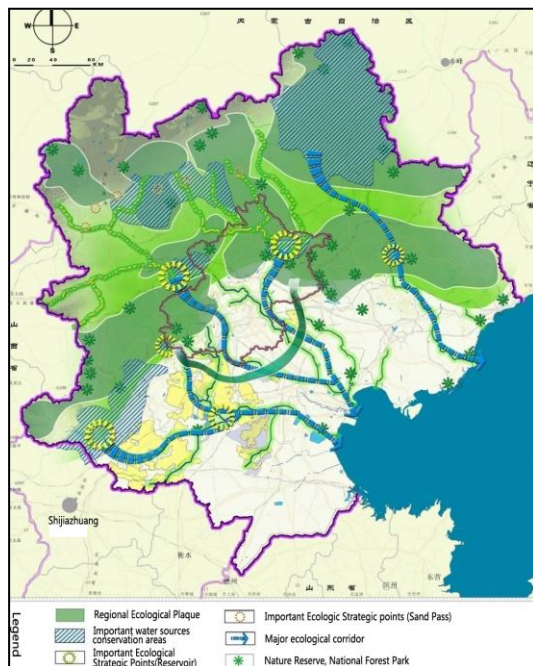


Figure 13 UBTHA Cross-boundary Ecological Protection Planning Structure

3.4 Cross-boundary Infrastructure Construction

The planning also proposes cross-boundary infrastructure construction plan to serve for the whole region. A series of railways, airports, highways are proposed in the infrastructure parts. Under the plan, it aims to establish a series of transportation hubs, including international gateway hubs, national transportation hubs, regional transportation hubs and regional connecting hubs. International hub includes Sanhe and Dachang, which are within the international airport serving area and Langfang, Guan, Yongqing, Zhuoahou, which are within the second international airport serving area.

National transportation hubs are those national stations which serve for national highways and high-speed railways, including Beijing station, Beijing south station, Beijing west station, Beijing north station and Fengtai station.

Regional transportation hubs include those five hubs, Tongzhou, Langfang, Baoding, Chengde and Zhangjiakou, which act the regional transportation services.

Regional connecting hubs include those new towns to serve for the connecting hubs.

The cross-boundary infrastructure system serves for the cross-boundary region to form a systematic transportation structure as figure 14 shown.

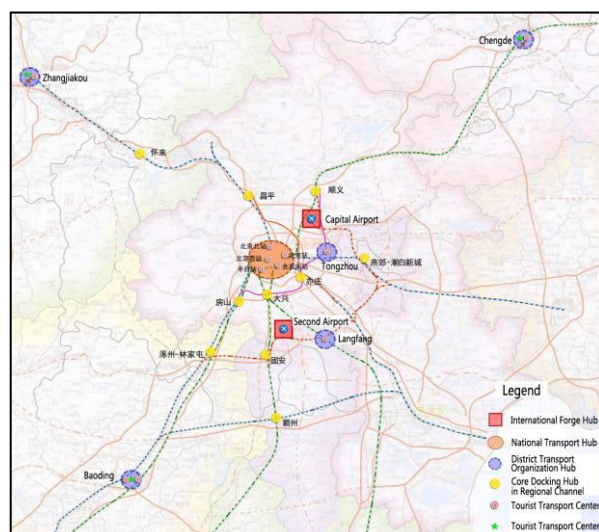
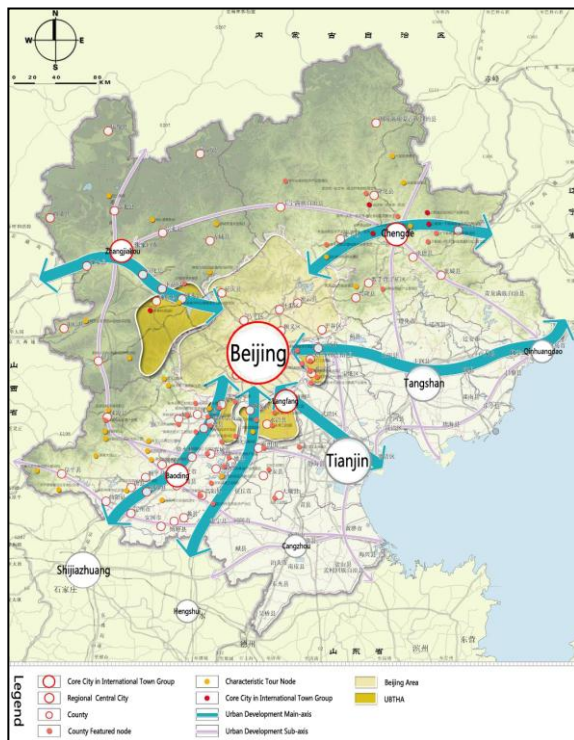


Figure 14 UBTHA Cross-boundary Systematic Transportation Structure

3.5 UBTHA Mega-region Planning Spatial Structure



Under the strategy proposed above, the planning stipulates a spatial structure for the mega-region area, characterized as one-center, four-cores, six-axes, four-zones and multi-points (Figure 15). One core is Beijing-centered and four cores are Baoding, Langfang, Chengde and Zhangjiakou, four regional cores. Six axes are six developmental corridors. Four zones are four growth poles in peri-capital areas. Multi-points include those industrial parks and towns. The spatial structure of the UBTHA identifies the main cores and nodes to serve for the whole regions.

Figure 15 PBTHA Spatial Structure

3.5 Cross-boundary Mega-region Governance

In the final part of the planning, it proposes to organize cross-boundary commissions to put forward the implement of the plan. It proposes

the State Council to act as the leaders and governed by the central ministries and Beijing, Tianjin and Hebei provinces. It also proposes a bottom-up approach from the market to the state. A series of policies are suggested to implement the planning, including the establishment of experimental zone to reinforce the cooperation and public fund for particular cross-boundary environmental protection projects.

4. Assessing

The planning is still undergoing, thus it is hard to evaluate the performance of the plan implementation now. However, it could be assessed the planning scheme process. The first experience is that the cross-boundary mega-region planning is an important instrument for building competitiveness and sustainable development of the whole region. Although cooperation is reinforced during the planning scheme, there is much competition in the cross-boundary region and cooperation is rare. With the accelerated urbanization of Beijing, a series of urban problems have emerged, including server urban transportation, environmental pollution, urban explosive expansion and etc. On the other hand, the lagged economic condition of Hebei has not benefited from the proximity to Beijing. Moreover, it causes a series of vicious problems to the whole regions. Thus, the development of the PBTHA cities have become the core issues of the development of the whole region. However, the planning is proposed by the provincial government of Hebei. The political power of the provincial government is hard to compete with the government of Beijing, the national capital city. Thus, it calls for the central government from the above to coordinate the cross-boundary issues and put forward the implement of the planning. Moreover, the phase of the planning is intended to act as a negotiation platform for both sides to discuss the cross-boundary issues of the regions in post-reform China. Thus, a bottom-up approach is still needed in the implementation process and an effective coordinating mechanism among cities for plan implementation should be further introduced and put forward and the items specified in the plan should be materialize though the involvement of central government into concrete actions.

5. Conclusion

In the western world, city-regions planning are considered effective instruments for situating the institutions of post-Fordist economic governance (Scott et al., 2001). Cross-boundary planning are also important arenas for city and regional to negotiate and cooperate in different spheres. The paper uses a case of PBTHA cross-boundary mega-region planning to probe in to the significances and difficulties of the planning. The contributions and main points of the planning have been discussed and the implementation and experience has been elaborated. Several lessons could be learnt from the planning. In the first place, regional inequalities lead to the uneven development of the whole area. Poverty alleviation, environmental protection and cross-boundary infrastructure construction are three important issues needed to be solved in the planning process. Another experience is that the cross-boundary regional government relies on the effectiveness of the power of central government. The up-bottom approach will be needed. A powerful coordination from above will be effective in the implementation. Although the provincial government should play an enabling role in the regional coordination, the higher-level government should also launch some concrete initiatives to put forward the implementation process. Thirdly, the successful of the planning is the establishment of an urban forum which may serve as the platform for member cities to share their views and visions on the development of the region. The planning offers a platform for the Hebei province to call for the preferential policies to further promote the sustainable development for the whole region.

1. [Electronic resources] <http://baike.baidu.com/view/4689714.htm> quoted June 29 2013.

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