

# THE PROCESS AND STRATEGY OF URBANIZATION DEVELOPMENT IN NORTHWEST CHINA

Zhang Zhiliang (张志良)

(*Population Research Institute of Lanzhou University, Lanzhou 730000, PRC*)

**ABSTRACT:** It is pointed out that the proportion of urban population is high but synthetical urbanization level is low in northwest China. The urban spacial distribution is influenced by usage of water resource, exploitation of mineral resource and constrained by transportation lines. The urban distribution is equipped with beaded characteristic.

It reveals that the main obstruction for urbanization are fragile economic basement, weak transportation facilities, low synthetical transportation capacity. It provides strategies of developing modern transportation, strengthening resource exploitation concentratively developing leading industries, establishing self—growth mechanism to improve urbanization level as a whole.

**KEY WORDS:** northwest China, urbanization, urban development

## I. CURRENT URBANIZATION SITUATION IN NORTHWEST CHINA

Japanese economic development and urbanization level were closely related to its highway system around the Pacific Ocean. Similarly, Longhai (Lianyung—Lanzhou)—Lanxin (Lanzhou—Urumqi) railway and cross railway of Lanqing Lanzhou—Xinjiang)—Baolan (Baotou—Lanzhou) are the pre-conditions of industrialization and urbanization development of northwest China. With the railway of North Xinjiang connecting with Alma—Ata railway, the second Eurasian Continental Bridge has threaded together. They are important to stimulate exploiting resources, developing economy and spurring urbanization in northwest China.

At the beginning of the founding of the People's Republic of China urbanization level in northwest region was low, only about 10.6%, less than the av-

erage level—12.4%. The Tianshui—Lanzhou section of Longhai railway was extended in 1952, Lanxin railway entered Xinjiang in 1958, and Lanxin railway began to operate in 1963. With this transportation artery opened unblocked, urbanization process of northwest China speed up. Urbanization level reached 17.24% in 1975. After reforming and opening to the outside world in 1987, it has made great progress gradually (Table 1).

From Table 1, it can be seen that the proportion of urban population in northwest China is higher than the average level of the whole country, and lower than that along coastal areas. But the proportion basement of urban population in Xinjiang, Qinghai and Ningxia is even higher than that in coastal areas. This is because many towns are formed due to resource exploitation and population assembly. Population in Qinghai is sparse and concentrate around towns with good natural conditions. In the Ningxia Plain of northern Ningxia economy is advanced relatively, and towns aggregate, and population concentrate in these towns. There are a lot of state farms in the towns, most of their population belong to urban population, in face they are engaged in agricultural production. All of these reveal that urbanization quality is low, especially in Xinjiang, Qinghai and Ningxia.

**Table 1 Proportion of urban population (%)**

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Whole country	17.6	18.0	18.3	19.0	20.8	22.3	22.0	24.0	24.8	25.8	25.8
Coastal areas	19.0	19.7	20.1	20.6	22.7	24.4	24.8	26.3	27.6	28.3	28.5
Northwest region	18.0	18.8	19.0	20.0	22.4	24.2	24.8	25.5	25.8	25.9	25.9
Shannxi	16.5	17.0	17.3	17.8	20.7	22.1	22.5	23.3	23.8	24.1	24.4
Gansu	15.2	15.5	15.4	16.2	17.2	19.1	19.9	20.3	20.3	20.9	20.6
Qinghai	19.8	20.2	19.9	20.2	26.2	29.0	29.7	30.4	30.3	30.5	30.4
Ningxia	20.0	20.5	21.1	22.6	23.2	25.0	27.9	27.3	27.8	27.4	29.1
Xinjiang	25.7	26.6	27.6	29.6	31.8	33.8	34.1	35.3	35.7	35.4	34.7

## 1. Synthetical Level of Urbanization in Northwest China

In order to evaluate urbanization level synthetically we select six evaluation indexes:  $Y_1$ —town population proportion;  $Y_2$ —the rate of nonagricultural labor force to urban population to reflect employment structure;  $Y_3$ —the number of stores, service trades and catering trades for every 100 persons to reflect the well-being level in urban living;  $Y_4$ —the number of telephones for every

100 persons to reflect the level of municipal public facilities;  $Y_5$ —the covering rate of green belt to reflect the urban environment level;  $Y_6$ —urban national income per capita to reflect urban economic developing level. All of these indexes can be transformed into a synthetic index. According to the importances, the different weighed averages of these data can be obtained. Now we can obtain the synthetic urban index ( $Y_0$ ) through weighted averaging all data of 1991 (Table 2).

**Table 2 Comprehensive indexe of urbanization in 1991**

	$Y_1$	$Y_2$	$Y_3$	$Y_4$	$Y_5$	$Y_6$	$Y_0$
Whole country	26.0	41.4	2.3	5.3	16.6	28.4	23.5
Southeast coastal area	29.0	53.9	2.5	7.1	19.0	37.1	28.9
Northwest region	26.1	37.2	1.9	4.5	9.8	20.3	20.4
Shannxi	24.5	36.9	1.9	4.8	19.7	18.1	21.0
Gansu	21.0	35.7	1.9	4.4	2.6	23.4	19.2
Qinghai	30.5	39.9	2.1	5.2	1.8	12.5	20.3
Ningxia	29.5	37.7	2.3	4.7	2.0	20.6	20.5
Xinjing	34.9	39.9	1.9	3.9	9.8	22.8	23.5

Source: the data from Chinese Statistical Annals (Chinese statistics publication 1992)

The synthetic index  $Y_0$  of urbanization reflects the urbanization level of northwest China basically. It is much less than the areas along southeast coast and the average level of the whole country. The index  $Y_0$  of Xinjiang, Qinghai and Ningxia, whose proportion of urban population is relatively high, is also lower than the average level of the whole country. These materials support the above conclusion; although the proportion of urban population is higher, some provinces and regions (Xinjiang, Qinghai, Ningxia) are even higher than the areas along southeast coast, the synthetic urbanization level of northwest China is low.

## 2. The Characteristics of Urban Spatial Distribution

The urban system is not perfect because the average urban population scale is small, and there are not many large and medium-sized cities, especially in Ningxia, Qinghai and Xinjiang.

The urban distribution is not balanced in northwest China, which is influenced by natural conditions, economic developing level, population density, urban infrastructure conditions and relation of transportation to the outside.

Among these elements, economic and natural conditions play an important role. The bad natural and economic conditions will lead to inconvenient transportation, sparse population, which are not beneficial to urban development. The essential elements which impede urban development seriously are arid, semi-arid climate and wide desert. Under such a situation the urban spatial distribution of northwest region are characterized by the following:

#### *2.1 Isolated-island-shaped distribution due to the restriction of water resources*

In general city is an economic center in a region and at a certain stage cities will group together. But restricted by water resource, cities in northwest China can only scatter in river valley basins and plains, oases on the edge of deserts, which have good water resource and convenient transportation and are suitable for developing economy. Consequently, it is very difficult to make up urban group. It is also difficult to exert division of work and cooperation among cities because bran system is not perfect and every city keeps isolate situation on the relationship between district and social economy.

#### *2.2 Bead-shaped distribution along transportation lines*

Most of cities in northwest China are distributed and develop along transportation lines. There are more than 20 cities and much more towns along Longhai—Lanxin railway, about half of the total cities in Shannxi, Gansu and Xinjiang. In addition, the rate of large and medium-sized cities is high. Moreover, others are distributed along Lanqing, Baozhong, Baolan and Xianchuan railways.

#### *2.3 Obvious resource direction of urban distribution*

Many cities and towns prospered with exploiting resources, such as Tongchuan, Hancheng, Shenfu of Shannxi Province; Jiayuguan, Baiyin, Jinchang, Yumen, Yaojie of Gansu Province; Golmud, Delingha, Da Qaidam of Qinghai Province; Karamay and Hami of Xinjiang.

### **3. Urban Function**

Urban function is the city's role in a certain district, which emphasizes urban basic activities. Because city is a result of regional economic development, and center of regional economy, the different regional conditions, different historical backgrounds of regional basis will lead to the difference in urban function types. In accordance with function situation of northwest China, they are divided into five types:

First, regional synthetic cities. They are mainly provincial capitals, as well as the center of politics, economy and culture, including Xi'an, Lanzhou, Xining, Yinchuan and Urumqi.

Second, heavy industrial cities depending on energy source, metallurgical industry, chemical industry. These cities prospered with certain resources exploitation. Later processing industry and others developed correspondingly including Tongchuan, Hancheng, Shizuishan, Qingtong Gorge, Golmud, Baiyin, Jinchang, Jiayuguan, Yumen, Kalamay and Hami etc.

Third, cities depending on processing industries, including Xianyang, Baoji, Tianshui, Shihezi.

Forth, cities as center of a district keeping independent with other cities relatively, including shangzhou, Ankang, Yulin, Weinan, Yanan, Hanzhong, Xifeng, Pingliang, Huayin, Linxia, Zhangye, Wuwei, Turpan, Changji, Kuitun, Korla, Bole, Aksu and so on.

Fifth, boundary cities and traveling cities, including Yining, Kashi, Altay, Tacheng, Artux, Dunhuang and so on.

## **II. PROBLEMS IN THE COURSE OF URBANIZATION IN NORTHWEST CHINA**

### **1. Weak Economic Basement Is the Largest Obstruction in the Process of Urbanization**

For a long time, social economic development of northwest China, has been falling behind the southeast coastal area. Before reforming and opening to the outside world, influenced by national strategy of spurring productive force to move to west on a large scale, northwest China established a set of industrial basement. But this couldn't improve the lagging economic situation completely<sup>[1]</sup>. After reforming and opening to the outside world, the investing rate to northwest region decreased greatly. The disparity in economic development between northwest and southeast regions enlarged. At the same time the development of urbanization lagged behind.

From the aspect of industrial type, the heavy construction depending on raw materials and energy source play an important role. Light industry and tertiary industry are not flourishing. The potential of absorbing agricultural surplus labor force is low. Above elements constrained urbanization development on certain degree.

The economy in most of cities in northwest region link up regional economy rarely. The binary contrast is large between town and country side. The hinterland of economic development is small, which also influence urbanization on certain degree. In addition, the restriction of agricultural production on urbanization speed is greater in northwest region than in southeast region. The

northwest region is not qualified to transform a lot of agricultural labor force to cities and towns completely. Therefore in the future before consolidating stable agriculture basement it is impossible to accelerate urbanization speed, which will lag behind coastal areas.

## **2. Poor Modern Transportation Facilities and Synthetic Transportation Ability Will Restrain Urbanization in Northwest China Seriously.**

Modern urban development is influenced by transportation and communication to a great extent. Modern industries especially advanced industries are inclined to be distributed in those places where there are convenient transportation and communication.

After 1949, we have made great progress in transportation and communication in northwest region, extending and building Longhai—Lanxin railway and Lanqing—Baolan railway to form cross frame work, but it fall far short of requirement to exploit regional resources and develop economy. Thus the situation restrained urbanization.

The railway system have been overloading for a long time, which have too much single railway, too large distance, too large freight volume, too small transportation density and heavy freight. The highway quality is low. There are not many civil aviation lines. The pipeline transportation is fragile. All of them have not cooperate to form synthetic transportation system to exert entire benefit.

## **III. URBANIZATION DEVELOPMENT STRATEGIES IN NORTHWEST CHINA**

Urbanization speed and level in northwest China fall behind coastal areas and the whole country. Urbanization lies in the initial stage, which embody on the source of population increasing, urban scale, spatial structure and function construction. Urban system is not perfect in northwest China in wide range because there are not many cities, and exists a great disparity of scale among cities. Most of cities are small, having simple function and spot distribution. So it is difficult to bring central cities into full play. It is obvious that natural and economic conditions particularly modern transportation limit urbanization. Therefore, urbanization development must depend on the real conditions. Urbanization, economic development and modern transportation must help each other forward.

## **1. Developing Modern Transportation, Improving Longha—Lanxin Railway to Accelerate Urbanization Process in Northwest China**

It is urgent to reform "bottleneck starting" of Longhai railway—Baoji—Lanzhou section. Although new Baoji—Lanzhou railway can reduce a little pressure of freight transport, the single line fall far short of freight capacity and volume needs of the second Eurasia land bridge. Reforming Lanxin railway line and establishing pipeline transport are suitable for increasing freight capability and meeting freight volume needs. On Longhai—Lanxin line, Qingxin line from Korla to Golmud was built to decrease pressure out of Lanxin line, the railway of Xining—Landzhou—Shaohua was also built to connect Yangpinguan, Xiangfan with Wuhan to Shanghai or entering the Changjiang (Yangtze) River to form a new south Longhai railway to cut down the pressure second time and to promote urbanization development along the railway, at the same time, to establish regional lines which have good conditions linked up Longhai—Lanxin railway. This action will play an important role in spurring regional economy and medium-sized cities development<sup>[2]</sup>. Through improving highway system, increasing grade to exert cooperation of highway and railway, spreading air aviation, particularly increasing lines between medium-sized cities, developing pipeline transport to form synthetic transportation system we can accelerate urbanization in northwest China.

## **2. Strengthening Resource Exploitation and Investment Traction to Stimulate Urbanization in Northwest China**

Resource exploitation is the direct power for urban development, exploiting coal, water, oil, gas resources and developing mining industry can not only form new cities but also develop cities such as Jiayuguan nearby iron ores, Jinchang and Baiyin with nonferrous metal, Qingtong Gorge nearby water resource, Shizuishan and Tongchuan with coal resource, Karamay, Hami and yumen with oil resource and so on. From the development of stage, exploiting many kinds of resource will promote urbanization<sup>[2]</sup>. According to energy source policy, exploiting water, electricity and nonferrous metal in the district along the Huanghe (Yellow) River taking Lanzhou as a center, exploiting oil resource in Karamay, Wudong and south Xinjiang will lead to urbanization development.

Investment attraction are aimed at those districts which have good spatial region and basement to adapt inclining policy of investment to stimulate urbanization. The whole nation has invested a large sum of funds in northwest China

to be beneficial to urbanization, particularly in provincial capitals. But because scattering investment direction of three lines construction leads to scattering mining sites, it is difficult to develop urbanization, productive cooperation and technical communication. In the future in the process of developing urbanization, the limited funds must be sure to invest those district equipped with regional advantage to develop urbanization, coordinate development and make high benefit.

### **3. Establishing Self-Growth Mechanism of Urbanization in Northwest China**

Current urbanization is decided by inside converting mechanism, especially for those large or medium-sized cities, mainly taking adjusting urban function and industrial composition as main motivation. Most of large cities are the first-class cities in provinces, which have certain accumulating economic, science and technical advantages and possess good developing conditions. But as Lanzhou, Xi'an they are equipped with too much function. Because of limited capacity, their urbanization has been restrained. In certain period it is very difficult to depend on national finance to develop urbanization. It is urgent to utilize current fixed assets, tap urban inside potentialities and adjust current industrial construction to develop economy on depth and width, thus not only establishing well-circles of further development, but also scattering urban function, spreading fundamental industry outside and establishing basement for developing economy.

The medium-sized and small cities which mainly belong to central industrial region based on resource exploitation and heavy industries can obtain certain supports under the national inclining policy. They should accumulate strength to adjust urban construction, strengthen urban fundamental facilities, and assure main industries bring urban increasing point into full play through accumulation and scale economy.

Developing towns is an active constructing form to arrange productivity reasonable, and to prevent much rest agricultural labor force entering large or medium-sized cities. On the other hand we couldn't only establish small towns instead of considering their rationalization. In 1991, there were 27 cities which possess less than 0.2 million population, and 687 towns. These towns haven't complete fundamental facilities, high economic benefit, high environment quality and convenient living condition. There exist large scale brain-drain situation. Therefore these towns must develop reasonably with high benefit.



#### **4. Concentratively Developing and Reasonably Arranging Leading Industry to Establish New Urban Developing Basement in Northwest China**

With current national industrial construction adjustment, northwest China are facing to utilize regional resource, energy source and raw chemical material to develop themselves in the course of developing export-oriented economy. Industrial projects incline to those districts equipped with good regional conditions to form certain scale of new cities. To utilize scale accumulation and coordination can promote regional economy around them to absorb agricultural surplus labor force and stimulate the secondary and tertiary industries. Before exploiting new resource and developing new industrial projects, it is necessary to work out the strategies to develop lead industries and construct new cities so as to exert economic and social functions of towns.

#### **5. Working out Concrete Developing Strategies for Current Large City in Northwest China.**

It is important to use current fixed assets and capital deposits to bring current technical facilities and latent advantage into full play, to absorb advanced technique to promote regional urban economy as a whole. There aren't many large cities in northwest region. But they are quipped with functions of political, economic, cultural and transportation centers. They are very important in the developmental strategies of northwest China. It is necessary for Xi'an, Lanzhou, Urumqi to control scale according to current conditions, in another word to control population increasing and urban land-use scale in a moderate degree, at the same time, to pay attention to control urban environment and other social elements. Thus, we can establish the moderate urban function to keep urban high level and synthetic level, and to promote urban development.

#### **6. Starting Economic Vitality of Medium-sized Cities and Towns to Improve Regional Developing Level**

For a long time northwest China hasn't possessed the force to develop lots of medium-sized or small cities. Therefore, it is an important problem to develop medium-sized and small cities in urbanization development. At present, the towns couldn't bring the corresponding functions into full play because the single industrial construction and serious unanimity tendency. Firstly, central cities haven't enough economic force and radiating energy. Secondly, current medium-sized cities couldn't obtain starting force. Thus, it is important for

small or medium-sized cities to improve their urban quality, to perfect urban function, to adjust large cities development, to construct towns network, and to form different developing poles.

Nowadays, we need adjust urban land-use and solve the problem of the suburb being too small. It is beneficial to receive some constructing projects. At the same time, we arrange vegetable and non-staple foodstuff supplying basement in order to provide condition for town development. Secondly, we can strengthen constructing basement to make town fundamental composition reasonable to start vitality. Thirdly, we can develop town's construction from many aspects to consolidate normal funds. Under the condition of developing towns and regional economy, we can promote urbanization depending on regional finance.

## REFERENCES

- [1] 张志良,朱莉.西北地区人口、资源、环境与经济发展态势和对策.中国人口科学.1993,(6).
- [2] 张志良.人口承载力与人口迁移.兰州:甘肃科技出版社,1993.