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Japan  
Japan International Cooperation Agency

People's Republic of China  
State Development Planning Commission  
Liaoning Provincial Science & Technology Committee  
Jiangsu Provincial Development & Planning Commission

# **Study for Preparing a Guide to Small and Medium-Sized Cities Development People's Republic of China**

## **-Final Report-**

June 2001

International Development Center of Japan

Pacific Consultants International

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## Preface

In response to a request from the Government of People's Republic of China, the Government of Japan decided to conduct a "Study for Preparing a Guide to Small- and Medium-Sized Cities Development in People's Republic of China", and entrusted the study to the Japan International Cooperation Agency.

JICA selected and dispatched a study team headed by Dr. Jinichiro Yabuta, President of the International Development Center of Japan, to China, several times between June 1999 to March 2001.

The team held discussions with the officials concerned of the Government of China and the representatives of private organizations, and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to balanced development of the small- and medium-sized cities in China, and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of China for their close cooperation extended to the study.

June 2001



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Kunihiko Saito  
President  
Japan International Cooperation Agency

## Letter of Transmittal

June 2001

Mr. Kunihiko Saito  
President  
Japan International Cooperation Agency  
Tokyo, Japan

Dear Mr. Saito;

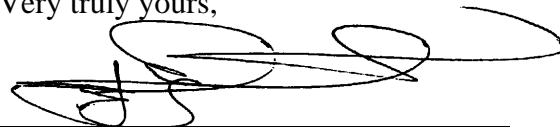
We are pleased to submit the final report of the Study for Preparing a Guide to Small- and Medium-Sized Cities Development in the People's Republic of China. This report summarized the results obtained from the studies carried out by a consortium of the International Development Center of Japan and the Pacific Consultants International.

The report contains a guide for the development of small- and medium-sized cities in China. The guide proposes four basic policies; 1) Formation of an Intensive Economic Society, 2) Formation of a Mobile Society, 3) Formation of a Civil Society, and 4) Maintaining Sustainable Development. Under these four basic policies, the guide has been prepared to cover eleven subject areas; administrative jurisdiction, land use policy, use of development zones, up-grading of industrial structure, local financing, migration, urban transportation, social security, housing policy, water resources, and municipal waste disposal.

In preparing this report, we made reference to reports and plans of PRC government, such as the Ninth 5-Year Plan for Regional Economy and Social Development of selected cities and of the Jiangsu Province. We are grateful to the Department of Regional Economic Development, State Development Planning Commission, the Liaoning Provincial Science and Technology Committee, the Development Planning Committee of Jiangsu Province, and many other government officials in China for their support to our field works in China. We are also grateful for the advice and support provided by the JICA.

It is our hope that this report will contribute to a balanced development of small and medium-sized cities in China, and further cooperation between China and Japan. Finally, we would like to express our thanks to all those with whom we have come in contact during our field works, for their valuable advice and cooperation.

Very truly yours,



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Jinichiro Yabuta  
Team Leader  
Study for Preparing a Guide to Small- and Medium-  
Sized Cities Development in People's Republic of China

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**PART ONE**  
**OVERVIEW**

## **Part One: Overview**

### **Chapter 1 Overview of Urbanization in China**

During a long period of thousand of years, the rural is the main place of production and living. Under the circumstances, the cities existed as the centers of trade. Some of such cities include Chang'an City of Tang Dynasty and Kaifeng City of Song Dynasty.

The industrial revolution changed the cities from those as the centers of trade to those as the main place of production and living. A large part of rural labors migrated into the cities to participate in the nonagricultural economic activities, including manufacturing industry. Urbanization was a process of the concentration of economic activities and population on the cities. The urbanization induced the civilian revolution such as the French Revolution, the American Civil War and the disintegration of the monarch in European countries. Actually, industrialization, urbanization and the modernization of society was a set of three major aspects of civilization.

In China, the civilization did not accompany itself, for a long time, with urbanization and modernization of society but with industrialization only. National policy was placing importance always on the industrialization as a strategic means to build a viable nation at the cost of urbanizing and modernizing the society. This was, in fact, a major failure in recent development process in China.

During a 30-year period before 1978, the government stressed the development of heavy industries. However, this government policy fell into a big trap. It was a little understanding on the fact that one could hardly expect a high profit from the heavy industries and that the heavy industries could grow only with the consumption goods industries which could usually make a higher profit thereby subsidizing the heavy ones. In place of the consumption goods industries, the government tried to use agriculture for subsidizing the heavy industries. The rural areas were forced not only to support the heavy industries, but also to supply food for the urban people. Consequently, the government tried to move people from urban to rural areas so that it could minimize

food consumption demand in the urban areas. This was a main economic reason for the forced migration of officials and students from urban to rural areas for 30 years after the establishment of the People's Republic of China.

Anti-urbanization was an essential aspect of the industrialization policy in China during that period.

The anti-urbanization resulted in splitting the national population into two groups of urban and the rural population, which were in opposition to each other in various interests such as social security, employment, education and the right to move.

Since the reform and open-door policies were adopted in 1978, the government promoted the rural industrialization, which encouraged the farmers to participate in industrial activities but without allowing them to leave the places of living. Although the rural industrialization policy resulted in a rapid expansion of so-called township enterprises in villages, it hardly created either the economy of urban agglomerations, the scale of economies in the management and operation of industries or technology development. On the contrary, it caused serious pollution extensively.

China is a late comer in industrialization. It has to go through a process of industrial development within the period being much shorter than that of the industrialized countries. It is in this regard that information revolution takes place worldwide and gives China as a late comer new opportunities of the industrialization to be led by the information revolution. Urbanization can be an important breeding ground of such industrialization cum information revolution.

Globalization will be a mainstream of the economies in the 21<sup>st</sup> century. Globalization will involve not only division of works and cooperation in the economic activities but also competition for and redistribution of the global wealth. Even today, about 60 % of the workers have lost income in the United States due to increasingly severe economic competitions. If China will expose itself to the global competition, it will have to stop a wasteful process of the rural industrialization and embark on the process of intensive urbanization.

However, urbanization does neither mean the migration of farmers to cities, mere expansion of city size, magical transformation of the rural to the urban, nor the

development of small and medium-sized cities as such. Urbanization is a process of civilization, which accompanies itself with the structural changes in the space for economic and living activities, the source of economic growth and the living style.

## **Chapter 2 Pattern of Urbanization and the Role of Small and Medium-sized Cities**

### **2.1 Factors for the Pattern of Urbanization**

Many experts and officials have paid an attention to the policy question as to which lead the urbanization in China, the large cities or the small and medium-sized cities. Answers for this question need to take into account various factors such as the population density of a country, an aggregate efficiency of development, the patterns and speed of industrialization, spread of information, the growth of service industries, economic globalization and the intensity in space use.

#### **(1) Industrialization**

The industries, heavy industries in particular, have strong propensity to operate in large cities. They need urban services, public infrastructures, plenty of labor and the efficiency of industrial agglomeration. In addition, they are very much dependent to on the large cities as a major market. In Japan, four metropolitan regions of Tokyo, Osaka, Nagoya and Fukuoka produced 70% of the national industrial output in 1960 when the development of heavy industries was at its peak, while the four metropolitan areas accounted only for 12% of the area of the national land. This is a clear example of the strong propensity of large industries to operate in large cities.

#### **(2) Information**

Someone think that people do not need large cities, and even the cities themselves and that people can exchange information through internet while living in the countryside. However, we believe that development of information technology will let the large cities to play increasingly important role in the society. If people is regarded as a vehicle of information, the information can be divided into (1) those which can be put in the form of digital, forms and languages, and (2) those which cannot be separated from human body. The information of the former type are transmitted through internet at a speed of 300,000 kilometers per second, and this intensive

information exchange does not replace but stimulates the exchange of the information of the latter type. Information economy has two remarkable benefits: intensity and speed of contacts among the people as a vehicle of information. Therefore, the best way to achieve the maximum economic benefit is to let various vehicles of information to concentrate on a limited space so that exchange and generation of information become intensive and rapid. It is in this regard that the large cities have a great advantage. During the period of rapid industrialization, economic activities concentrated in the four major metropolitan regions in Japan. It is these regions that are attracting information industries at present. A trend as experienced in Japan like this demonstrates a strong propensity of the information industries to be attracted to large cities.

### **(3) Service Industries**

The service industries are an essence of the urban economy. A large city has a large base of customers, both establishments and individuals, and thus a variety of service opportunities. Specialized services can exist only in large cities. Therefore, only large cities can offer a full range of services for consumers and producers.

### **(4) Efficiency in Development**

Urbanization is predominated by growth of small and medium-sized cities in many European countries, including Austria, Czech, France, Germany, Hungary, Italy and Switzerland. These countries are early-industrialized ones. Hundreds of years have been spent for their process of industrialization, from agriculture, textile industry, machinery industry through today's information industry. This long process has accompanied itself with a process of urbanization beginning with the labor movement to small and medium-sized cities from their vicinities.

On the contrary, late-industrialized countries have generally followed a pattern of urbanization predominated large cities on account of efficiency. In these countries, the rural-to-urban movement of labor has taken place very extensively in a limited period of time. A typical example is the industrialization and urbanization in Japan.

China is a lately industrializing country. Current economic policy for modernization calls for maximizing economic efficiency in development, under a growing trend of the economic globalization led by information technology. This warrants the urbanization led by growth of the large cities as being advantageous from efficiency point of view.

#### **(5) Economic Globalization**

Economic globalization involves strengthened division of works, intensified interactions and competitions among large cities as centers of national and international economies. With well-developed infrastructures and scale of economies, only large cities have potentials to participate in such global interactions and competitions. Metropolitan region should, in fact, be the base of a national economy, if it is to be viable in the global competition.

#### **(6) Space Use Intensity**

Modernization is a process of intensifying the use of geographical space. Economic activities enjoy high efficiency if they use space intensively. It is not possible for every region to attain an equal level of economic level in a country. National space is subject to the division into urban and rural. The urban space attracts industrial and information activities, while the rural space accommodates agriculture and natural environment. Under the circumstances, economic efficiency is much greater in urban than rural space. The larger a city, the greater the efficiency. In a modern economy, the engines of growth lie in the urban space, while the rural space specializes itself in supplying food and other primary commodities and ensuring the national environmental base. The rural space should not be made to take a main charge in leading economic growth. In stead, a mechanism should be strengthened for the rural to be supported by the urban and not vice-versa. A so-called balanced development of the national space is an unrealized dream.

To summarize, urbanization policy should necessarily give an emphasis on the development of metropolitan regions in China. A number of city groups are expected to

grow as the metropolitan regions, which lead economic development and international exchanges of China; particularly those in the Yangtze River Delta and the Pearl River Delta. These two potential metropolitan regions will attract increasingly large magnitude of the domestic economic activities and have intensive interactions with the global economy, the Asia-Pacific economy in particular. We remind the government that it has not paid due attention to the importance of the metropolitan regions for the Chinese economy despite the various policy support needed by the potential metropolitan regions.

## **2.2 Role of Small and Medium-sized Cities**

The small and medium-sized cities are important as well in the process of urbanization, which is led by metropolitan regions. They can be categorized into those within and outside the metropolitan regions. In a metropolitan region, those within form functional linkages with its central large city. Those outside the metropolitan region are the centers of administrative, economic and social services for their surrounding rural hinterlands.

### **(1) Small and Medium-sized Cities within Metropolitan Region**

A city is the agglomerations of urban and industrial activities. The larger a city is, the larger its agglomerations are. However, the large agglomerations tend to accompany themselves with urban problems such as traffic congestion, air pollution and degradation of living environment, though the agglomerations basically contribute to economic efficiency. The urban problems are a result of the diseconomies of scale being a major constraint to the economic performance of large city. A natural reaction to the diseconomies of scale is de-concentration. Industrial and residential functions tend to disperse from central large cities to their surrounding small and medium-sized cities. These cities thus increasingly play a role complementary to the central cities to form the metropolitan regions. A metropolitan region itself tends to expand with transportation development and expansion of its central large city. Some of the economic linkages have a distance of as long as 300 kilometers in the case of Tokyo



Metropolitan Region.

While a central large city is released from the diseconomies of scale by pushing out some of their functions, such functions potentially stimulate the growth of surrounding small and medium-sized cities. However, most of the small and medium-sized cities in the vicinity of large cities have not effectively make use of industrial and residential dispersal for their development sake, as revealed by our first phase study on the case cities of Haicheng, Xishan, Zhangjiagang, Rongcheng, Shunde, Pixian, Shaoxing, Gongyi and Fiqing, all not being far from large cities. On the contrary, some of them have been found to attempt to isolate themselves from neighboring large cities in administration and economic activities.

The small and medium-sized cities should be encouraged to lure large cities to release their activities so as to stimulate development of the small and medium-sized cities. They are the base of metropolitan regions.

#### **(1) Small and Medium-sized cities outside Metropolitan Region**

As centers for rural hinterlands, viability of the small and medium-sized cities depends, to a large extent, whether they have competitive industries in such sectors as tourism, physical distribution, mining and manufacturing.

A focal point in this context is the mining and manufacturing in China. Economic activities of many small and medium-sized cities outside the metropolitan regions are declining due to depleting mining resources and stagnant state owned manufacturing activities in these cities. Particularly suffer a lot are those cities with the mining and processing activities developed for the purpose of war soon after the national independence. Additional weakness of the non-metropolitan small and medium-sized cities including these is a stereotyped industrial structure imposed on them under the past centrally planed economy. In many cases, these cities lack sufficient urban functions such as social services, commercial activities and cultural activities for their own as well as hinterlands. Two major challenges of the small and medium-sized cities outside the metropolitan regions are firstly diversifying and strengthening urban functions and secondly restructuring the stereotyped industrial activities.

## **Chapter 3 the Target and Measures of Social Development of Urbanization**

The urbanization requires development of industrialization, introduction of information technology and modernization. The society with the urbanization meets social progress, economic globalization, environmental protection and efficient land-use. Here we set our target and propose measures for the future urbanized society. In this report, we develop four concepts to set the targets for China's urbanization; (1) formation of intensive economic society, (2) formation of mobile society, (3) formation of citizenship, and (4) society with sustainable development. This chapter will discuss those four concepts that are closely related with the development of small and medium-sized cities in China.

### **3.1 Formation of Intensive Economic Society**

#### **3.1.1 Process of Intensive Economic Society: Requirement of Modernization**

##### **(1) Requirement of Modernization, Concentration and Intension of Industrial Structure**

The modern economy calls for reasonable industrial location. In the past, agriculture, forestry, fishing and mining industries used farmland, mountains, waters and mines as their production base. But when the human being reached industrialized and information oriented society, the distribution mechanism of major industrial production sites had been substantially changed. For manufacturing industries, it is the indispensable requirement to lower transportation cost, to raise industrial efficiency and to utilize urban functions. The service industries have been concentrated in cities to seek merit of economic scale. Information industry intends to locate in cities where variety of information, and new technologies and products are available. In light of this condition, the backbone industries of modern economy, such as manufacturing, service and information industries, exist in the urban economy.

In today's division-based society, the selection of location of one enterprise will usually connected with other enterprises having business contacts with it. The selection

of location of one enterprise will affect the selection of location of other enterprises. In order to reduce production cost, to seek efficiency of industrial intensiveness, and to utilize urban functions, enterprises moved to cities. Labor force also moved to cities to seek employment opportunities and enjoy urban service function. Then, cities have developed as major space for social production and living. Achieving efficient, high-quality and modernized society might depend on the urbanization process.

## **(2) Requirement of Information-Oriented Society for Intensiveness**

Expansion of information-oriented society influences economic structure and industrial location in the world, including China. China will be forced to adjust and restructure its economic structure and spatial distribution of industries to cope with the expansion of information-oriented society.

Some people think that information will make production of goods and residence of people decentralized. But, we think that such kind of view is contradictory to the development rule of modern society. Information-oriented society will more and more obviously make our living centralized and intensive.

The powerful functions of information technology (IT) make enterprises and individuals able to enjoy more information resources than before and speed up information exchanges among enterprises and individuals. This allows the trade and exchanges, which were conducted among some limited major parts in the past, to be conducted in multi-direction and at multi-level among many major parts, and exchange is the premise of information economy.

The internet-based information exchange will not only increase flow of goods, but also will increase people's chances of having direct face-to-face exchanges. In other words, information results in the high-speed flow of goods and people.

The increase of flow of goods and communication among people means that the economic intensiveness is irresistible. In other words, a partial change in the society may affect the situation as a whole" in the information society.

### **(3) Requirement of Land Development for Intensiveness**

Intensiveness is the urgent requirement for land development. For example, almost all the energy requirement of transportation relies on fossil fuel today, while the function of intensiveness may reduce the consumption of fossil fuel in transportation. The land development needs to maximize efficiency of land-use and, therefore, high efficiency of energy use is required. In addition, it contributes to environmental protection in the world.

The government should take consideration of influence and function of intensiveness of economic activities when drafting regional development program and land development program.

### **(4) Intensiveness and Urban Issue Solution**

It is true that intensiveness causes urban problems, such as air pollution, traffic jam, long commuting distance and high population density. These kinds of problems are found in the cities in the world at different degrees. However, intensiveness is not the only cause of these urban problems. It should be pointed out that the most of negative influence of intensiveness is caused by the mismatched urban backbone design and infrastructure construction with the intensity of the cities. The reasonable urban design and adequate infrastructure construction matching with the principle of intensiveness may not cause urban problems.

### **(5) Problems Concerning China's Intensiveness Process**

In today's China, the most prominent problem, in term of the special economic activities, is the decentralization of industries: industrial enterprises are scattering and located in cities, towns and villages; development zones with confused function are scattered everywhere, irregular development is rampant in regions with inadequate development potential; the urbanization of small and medium-sized cities does not have reasonable distribution and overall programming; the construction of metropolis regions lags behind seriously, etc.

From the point of land development view, the development of regions with big

potential should be separated with the development of regions with small potential. The so-called regions with big potential refer to the places, which accord with intensive principle, have convenient transportation, good natural conditions, adequate water sources and are suitable for industrial and urban agglomeration. Plans and steps should be made and taken gradually to guide industrial agglomeration in regions with big development potential so as to improve efficiency of overall economic development, and to avoid disorder of industrial distribution, decline of urban function and overall economic competitiveness.

One of the shortcomings of industrial and urban agglomeration in today's China is the unreasonable division of current administrative jurisdiction as well as the barrier set between different administrative jurisdictions. The unreasonable administrative jurisdiction results in decentralization and weak urban agglomeration.

### **3.1.2 Target and Measures for Achieving Intensive Society**

The first issue raised by this guideline for the development of small and medium sized cities is to form intensive economic society. It means that we need to achieve agglomeration and intensiveness of economic activities and personal livings. In other words, urbanization should be promoted. It is important to take effective measures to restrain decentralization of urban space and the irregular expansion of urban extension at the same time.

The effective measures to achieve intensive economic society are categorized into the following three aspects:

1. Using intensiveness to improve the efficiency and convenience of the whole economic society.
2. Using intensiveness to improve the efficiency of land-use, and to protect farmland, mountains and forestry.
3. Using intensiveness to reduce energy consumption for transportation and alleviate greenhouse effects on the earth.

## **(1) Improving the Efficiency and Convenience of the Overall Economic Society with Intensiveness**

Intensiveness may help shortening the distance for exchange and trade among various economic entities. Then, the costs can be reduced and the profits can be increased. Intensiveness may improve the efficiency of infrastructure and facilities, and the enterprises and people can enjoy the convenience of modern infrastructure and facilities.

The service sector industries will be given more business opportunities through the concentration of those beneficiaries and customers and can increase benefit from the opportunities. For the service sector industries, the bigger urban scale means the bigger base of customers. However, the service sectors industries, which have complete categories, strong complementary abilities, sophisticated divisions and clear functions, can only survive and enjoy their scale merit in large cities. In return, the prosperous and flourishing service industries become attractions of the city.

In the intensive economic society, people can exchange sophisticated and useful information for innovation.

## **(2) Relying on Intensiveness to Protect Farmland, Mountains and Forestry**

Cultivated area has been decreasing in China. Forming intensive economic society lead to land-saving industrialization through development of information technology and urbanization. Dispersive and irregular urban development results in low efficient land use. Intensiveness must be encouraged to improve the efficiency of land-use in the cities.

The efficient land use in the cities contributes to preserve farmland, mountains and forestry. China lost a lot of rich natural resources on the process of present style urbanization. The land has been base for agricultural production with careful attention by peasants for generations. Considering China's huge number of population and future population increase, securing food for people is a great concern. Therefore, it is imperative to preserve farmland.

### **(3) Relying on Intensiveness to Alleviate Greenhouse Effect on the Earth**

Forming intensive economic society contributes to shorten transportation time, reduce volume of traffic, and reduce consumption of fossil fuel so as to reduce the greenhouse effect on the earth.

### **(4) Preventing Unexpected Decentralization of Urban Agglomeration**

#### **1) Drafting of national and provincial-level land-use program**

The advent of information-oriented society and economic globalization will change current social structure, economic structure, industrial structure, development mode and life style of people significantly. The central government must precisely grasp development potentials of various regions and recognize necessities for promoting agglomeration with the prospective views. Each industry should be given its own requirement for land-use and neighboring environment. The government should take account of future sustainable development and make ample studies on possibilities of developing various industries in different regions so as to avoid the unreasonable and disperse development.

The national and provincial governments should draft a set of land-use programs. The land-use program refers to space development, which includes issues, such as industrial allocation, location of metropolitan area, large cities and central cities.

#### **2) Developed areas should be controlled in accordance with the development potential**

The developed land should be controlled through national and provincial-level land use programs, and the land programs should be adjusted continuously to meet the requirement for the developed land.

#### **3) Mechanisms to restrain disordered development should be established**

The development should be achieved orderly, moderately and efficiently with the mechanism to restrain disordered development. For example, a system for preventing disordered development should include measures to raise fund, and use and manage it. Even if the development plan fails and creates a bad debt, the fund-raisers or the financial institutions should not be allowed to get relief from other entities easily.

Financial organizations should set up the strict self-responsibility system.

The development fund of the local government should not rely too much on the capital gained from the transfer of land-use rights. The over-reliance of development fund on the transfer of the land-use right is the main cause of disordered development.

Part of labors in the regions with small development potential should be encouraged to move to regions with big development potential. The change of industrial structure will result in the changes of industrial location and labor relocation.

#### **(5) Concept of Development Zone should be Clearly Established**

The nationwide “phenomenon of development zone increase” is a policy topic worthy of discussion and study. Should the development zone locate in industrial parks or new urban districts? Is the development movement based on land sale a temporary measure or a long-term strategy? How to define the power, responsibility and interests of the administration committee of the development zone? What are the reasons for the distortion of the original intention, expected effect and final objective for the development of the large-scaled development zones across the country?

Today, the scale of China’s development zone is big enough to accommodate all the factories in the world. A lot of capitals have been ensnared, lands have been underutilized, disordered development have been rampant, and the urban space has been developed with mixture of industrial, commercial and residential buildings, etc.

Thus, it is urgently required in China to clearly define the concept, function, development direction, main development entity and area of development zones.

#### **(6) Intensiveness of Urban Development**

##### **1) Accurate backbone system of urban transportation**

Although the modern transportation facilities, such as automobiles, subways and railways, co-exist in cities, choosing major transportation facility to form the urban backbone transportation system depends on the density and space of the targeted area as well as the degree of the development. In large cities, the backbone transportation system is expected to be composed mainly of railways and subways in order to avoid



the paralysis of urban functions with the automobile society. In metropolitan areas, commuter railway should be constructed to expand the space of metropolitan region. For small and medium-sized cities, the influence of the automobile society on the development of central urban districts should be taken into consideration and traffic jam in the central urban districts should be avoided.

## **2) Restructuring of administrative jurisdiction**

The present structure of administrative jurisdiction is one of the restraints for urbanization process. With the expansion of commuting circle, educational circle and shopping circle, the present administrative jurisdiction restrains the effective allocation of resources and helps to keep inefficient separate regimes. Thus, it is necessary to readjust administrative jurisdiction to cope with the expansion of the metropolitan areas

First of all, the scale of division of administrative jurisdiction should be readjusted to avoid the negative influence on the expansion of the metropolitan areas, avoid duplicated construction of infrastructure, improve administrative efficiency and reduce administrative staff.

Secondly, small administration units should focus on administrative service, social security and social welfare. As economic activities increase and living space expands and diversifies, the roles of administrative units should be changed as well. The roles are not to intervene the economic activities but to support economic activities with administrative service and to support people's life with social security and social welfare.

## **3) Making urban land use program**

The land use program in cities must be included in the development plan to avoid irregular urban development and to prevent shortsighted practices. To make urban land use program, the function of each districts of the city must be clearly set, first. Secondly, the high-efficient use of land should be encouraged. Then, some of lands should be reserved – not for development – but for amenities.

In order to encourage efficient land use, fixed asset tax system, which charges tax according to the market price of land-use right, should be introduced in China.

### **(7) Increasing City's Independent Tax Sources**

The lack of finance of local government results in the fact that a large portion of local finance comes from the sales of land and the charges of various fees. This is so-called the second and third finance in the local financial coffer. The active sale of land by government equals to the encouragement of irregular and inefficient urban development. Charges of various fee equals to disordering economic system and deteriorating economic situation. Thus, the second and third finance of local government actually facilitate inefficient development and deteriorate local economic situation. Therefore, independent tax and financial sources of local government must be increased and expanded as soon as possible.

We suggest that the individual income tax should be levied in the residential areas of people instead of in the working areas. The change of income tax levy area lead to agglomeration of population, and may change the local government's attitude to migrants who are usually expelled by the local government. The local government in residential area might be able to increase expenditure for social services.

### **(8) Optimizing Industrial Structure of Small and Medium-sized Cities**

Development of small and medium-sized cities depends to the large extent on industrial development. However, scales of enterprises are small and technological level is low in many cases in the small and medium-sized cities. This weak industrial base lead to unstable development for small and medium-sized cities. It is difficult for small and medium-sized cities to pursue stable development without achieving competitive industrial agglomeration.

China's entry into WTO is a big challenge for the small and medium-sized enterprises. The industrial structure in the small and medium-sized cities of China should be upgraded and the working conditions of the enterprises need to be improved.

## **3.2 Formation of Mobile Society**

Efficiency of economic activities depends on the best mix of essential productive

factors, while the combination of essential productive factors depends on adequate resource allocation. Globalization might help to allocate resources adequately and optimize assembly of essential productive factors in the world. Mobility of essential productive factors and exchange of people are very important factors for the improvement of economic efficiency and standard of living. Development of the cities cannot be achieved without reducing exchange cost and quick mobility of essential productive factors. Only the cities with high degree mobility can keep competitiveness in the growing international and domestic markets.

Efforts for establishing systems and infrastructures to cope with mobile society are imperative.

### **3.2.1 Freedom of Migration: Reform of Social System to Cope with Mobile Society**

Today, there are many systematic obstacles hindering the reorganization of people and essential productive factors, such as capital, technology and products. The pillar of the society is people. In this report, focuses are put on the importance of achieving free migration in China.

In China, agriculture had supported development of heavy industries and the lives of people involved in the industrialization. Agriculture had provided capital and resources to the heavy industries. However, urban population did not so much increase, as the number of workers required in the heavy industries was not big. Chinese Government adopted the policy of segregating urban and rural population by retaining rural population in countryside and limiting urban population. At that time, rural areas were responsible for providing input to industry and support for lives of urban residents. Thus, the government tried to move urban residents to rural areas to reduce burden of cities and to set up system of segregation between the urban and rural areas, mainly by introducing permanent register system. The system of separating rural and urban population resulted in generating two layers population groups: urban population and rural population. They have substantially different rights for social security, employment, education and migration.

Development of heavy industries made the difference between factory workers and farmers and between rural and urban population clear. In the 20 years after the reform and open-up policy, the rural industrialization with the purpose of letting peasants “leave agricultural works but remain in the rural areas” had been proceeded. Although industrialization in rural areas succeeded to the large extend, the objective to set the industrial economy in part of rural economy was not achieved. The industrialization in the rural areas led to wasteful development as well as decline of rural and township enterprises, which are located far away from the metropolitan areas. Furthermore, the overall environmental resources have been wasted and damaged. As a result, the whole economic interests are harmed and development of urban industrial economy is also restrained. The industrialization in rural areas is one of the major factors for the inefficient economic development in the 20 years after the reform and open-up policy in China.

Shifting economic development base from agriculture to other industries, such as information technology and service, is necessary for China’s modernization. These industries are parts of urban economy. This means that a large number of labors will move from rural areas to cities. To implement industrial shift, the difference of systems between urban and rural areas must be lessened.

The bases of modern economy are exchange and division. Thus, exchange and cooperation among citizens contribute to establish efficient economy and society. Judging from this point, the policy restricting migration has seriously hindered the economic development. Thus, free mobilization of people should be admitted as soon as possible in China.

### **3.2.2 Restructuring of Transportation System**

The purpose of restructuring transportation system is to improve overall social efficiency by shortening the transportation time of people and goods, and by reducing the transportation cost.

When the urban transportation system is established, there are three critical points. The first one is to select suitable backbone system for transportation, the second one is

to strengthen transportation system in metropolitan area, and the last one is to improve area-wide transportation system.

### **(1) Selection of suitable urban transportation system**

When the urban transportation system is established, comprehensive elements, such as scale of the city, population, development strategy and function of the city, must be taken into consideration. China is shifting to automotive society along with its economic growth and improvement of standard of living. However, the automotive society causes a lot of problems, such as traffic jam, traffic accidents, air pollution, and energy consumption increase. These kinds of problems are common in big cities in various foreign countries, including China.

Generally speaking, the number of urban resident, who uses automobile daily base, is small, except the United States where the urban population is small and population density is low. In many of Asian countries, urban population density is high, and public transportation, such as train, subway and bus, is a backbone of transportation system. In the metropolitan area, such as Tokyo with a population of 30 million, automobile-based transportation system does not work, as the system cannot afford to transport such a huge number of populations. Thus, developing public transportation system is inevitable in large cities of China. The system contributes to decrease demand for automobile, and to create efficient and cleaner cities.

Meanwhile, automobile-based transportation system might be suitable for the small and medium sized cities. Thus, space planning suitable for automotive society should be included in the development plan of small and medium-sized cities. Special attention should be paid to the relations between traffic routes and commercial districts to keep the function of central district working.

### **(2) Strengthening of transportation system in metropolitan area**

The urban area will extend as the transportation infrastructure expands. The commuting route and commuting area will also be extended with the development of transportation infrastructure. Planning of transportation system should be done

before the construction of metropolitan area. Strengthening transportation system in metropolitan area directly leads to the growth of the area.

However, only a few of big cities adopts suitable transportation systems in China. The area-wide transportation, which connects neighboring areas, is still depending upon roads. As a result, development level of each city is inconsistent. Judging from the case of developed countries, the role of commuter railroads is very important in the metropolitan areas. The development of commuter railroads expands the scope of metropolitan area and shortens the transportation time of people and goods. As a result, the economic efficiency of the city improves and the urban function of the city diversifies.

The metropolitan areas with commuter railroad systems should be established as soon as possible in Yangtze River Delta, Pearl River Delta, Beijing-Tianjin-Tangshan region and Liaodong Peninsular. The some of functions, which the metropolitan areas have, will spread to suburban area and the neighboring cities. The industrial agglomeration in metropolitan areas might expand to neighboring areas. The small and medium sized cities adjacent to the metropolitan area might grow, as these cities work as satellite cities and absorb some of functions that the metropolitan area has. The expansion of Shanghai metropolitan area leads to the recent development of Kunshan, Suzhou, Wuxi and Changzhou municipalities in Jiangsu Province. If the commuter railroad systems connecting these municipalities and Shanghai is constructed, the economic ties between these municipalities and Shanghai metropolitan area will be strengthened.

### **(3) Improvement of area-wide transportation system**

The metropolitan area plays an important role to cope with economic globalization. The area also has a potential to accelerate division of labor and to facilitate international exchange. Establishing area-wide transportation system is necessary to strengthen international competitiveness, and to promote division and of labor domestically and internationally.

The area-wide transportation system consists of ocean shipping, river shipping,

air transportation, railway transportation (including express railways) and road transportation.

As a large amount of goods can be transported in long distance at low price by ocean shipping, ocean shipping is one of the main transportation ways of goods in major coastal cities in the world from the beginning of the 20th century. Thus, world economy in the 20th century might be named “ocean economy”. Although China has a long coastal line and many deep harbors, many of large coastal cities have not been able to utilize the benefits of ocean shipping. In other words, the economy of Chinese coastal cities has not entered in the ocean economy, which strengthen the relationship with the world economy through the import and export of large amount of goods.

Passengers and goods, especially high-tech related goods, can be transported in short time with spatial extent by air transportation. In this sense, information technology industry and high-tech industry might be called air economy as these industries depend upon air transportation, while heavy industry and energy industry based on ocean shipping. It is necessary to establish worldwide air transportation network among metropolitan areas to develop air economy.

Long distance transportation mainly depends on railway transportation in China. Large amount of goods, such as energy related raw materials, is often transported by railway transportation, but railway transportation system in China has not been developed enough to achieve quick transportation of small amount of goods. Further, railway transportation network for passengers has not been well developed in China. With the increase of number of railway passengers, it is necessary to develop high-speed express railway network linking areas, which has high population density. Developing high-speed railway network is inevitable for efficient economic exchange among metropolitan areas in the future in China.

The road transportation has been developed in short period of time in China recently, and it has been becoming main transportation ways of goods and people. However, excessive dependence on road transportation should be avoided, as it will increase the overall economic cost due to the increase of energy consumption and environmental degradation. Thus, linking road transportation system with other

transportation systems is very important point.

Because of the limitation of financial and human resources, it is almost impossible for small and medium-sized cities to establish area-wide transportation system by its own resources. Thus, focus should be put on the linkage to the area-wide transportation system established by the neighboring metropolitan areas, when small and medium-sized cities try to develop its transportation infrastructure. In the Pearl River Delta, many of cities developed area-wide transportation systems by their own resources. Although these medium-sized cities spent a lot of money for the construction of area-wide transportation systems, the systems themselves are not efficient as some of railroad constructions were duplicated. As a result, the area-wide systems in the Pearl River Delta are disorganized as a whole, and the construction of the systems weakened the financial situation of these cities. This unsuccessful case should not be repeated for the future construction of the area-wide transportation systems in the metropolitan areas.

### **3.3 Formation of Civil Society**

Urbanization accelerates the movement of the working place and residence of people from rural areas to urban areas. Three basic human needs are job, social security and social exchange. In rural society, land use right is the base of social security, and the village community plays a role to create social exchange. This type of social structure has been maintained for thousands of years, and it is called “village society”.

Along with industrialization and development of information technology, society has been established highly socialized division of labor. As a result, people need special skills and professional knowledge to get jobs. Since people who migrate to cities from villages leave the ownership of their lands, employment and education opportunities should be given in the cities as social security and social exchange opportunities. This kind of social structure is called “citizen society” in this report.

Urbanization might change the stable social structure of village society, which has been maintained for thousands of years as mentioned above. As a large number



of young and talented labors will move to cities constantly, the complicated land use right system and social exchange system might be disorganized in villages in a short period of time. And, the scope of social exchange might transcend village level. The village society itself needs to be reorganized to cope with the urbanization process.

Gaining special skills and knowledge by receiving education and training is required for the people who migrate to cities to adjust to the modern social system of division of labor. The people also need new social security system, substituting for land use right. And, the people need new social exchange space to cope with the citizen society. These basic requirements in the citizen society must be covered along with urbanization.

### **3.3.1 Education and Training: the Base for Civil Society**

Receiving education is prerequisite for rural people to improve quality of living and to adjust to modern social production system. As the main industry is shifting from agriculture to manufacturing, and service and information, the required level for labor quality is becoming higher and higher. Agriculture mainly requires physical labor, while manufacturing requires technical skills and knowledge, and information industry requires higher education.

In the process of urbanization, labor will shift from agriculture sector to manufacturing sector, and service and information sectors. This kind of labor shift will be actualized with economical pain. For example, a large number of workers in manufacturing sector were laid off in the United States in the 1980s, as a result of de-industrialization. The United States succeeded to shift the workers to service and information sectors by educating or reeducating them, and giving them social inducement for decades of years. Recently, Japan has been facing same problems as the United States, such as lack of talented personnel for information technology and high unemployment rate. New industry requires highly educated personnel, and providing talented workers is one of the important points to proceed industrial structural adjustment and urbanization.

As labors are required to have higher knowledge and technology by receiving education and training to work in the modern industrial sectors, the movement of labor from rural areas to urban areas will not be accomplished immediately. Accomplishing this process takes time, probably several generations, because giving education and reeducation to young and talented rural labors is required. Thus, urbanization will synchronizes with the labor shift to the modern industry, such as service and information industries.

Setting the leading industry is important point for the development of small and medium-sized cities. And the education or reeducation for labors should be consistent ones with what the leading industry requires. This process helps accelerating industrial structure adjustment and promoting specialization of urban labors. Regarding to the education, basic education system is mainly financed by local government in China in spite of the fact that financial situation of the small and medium-sized cities is not good. Since the expenditure for basic education occupies large part of overall expenditure in many cities, it pressures the finance of the local governments. As a result, the level of basic education is low in rural areas in small and medium-sized cities. This situation needs to be resolved in a short period of time. Basic education gives foundation for higher level education or training. In other words, basic education is prerequisite for being workers in the modern industries and members of citizen society. Thus, improving the level of basic education in rural areas in China is important issue for urbanization.

### **3.3.2 Social Security: the Security for Citizenship**

Land use right, a large family and village community has been playing roles substituting for social security in agricultural society for thousands of years. Large family and community members, who have been strongly connected, have supported each other in the case of childbirth, sickness, funerals and taking care of elder persons. However, people will leave land use right, change family structure and separate from community based life style with the progress of urbanization to become a member of citizen society where people does not know each other well and does not have kin

relations. Thus, establishing perfect social security system is required to support the citizen society.

Security given by state-owned enterprises has been the base of life security in the process of industrialization and urbanization. State-owned enterprises has provided a variety of welfare benefit and security for their employees (these employees are also members of a large family) on behalf of village communities. Some of the enterprises have given education and employment opportunities to their employee's children.

The shortcoming of the security system given by the enterprises is its exclusiveness. The enterprise based security system is unfair because the system provides security only to the employees of the enterprises. The exclusiveness of the enterprises also hinders human resource transfer. The enterprise based security system is also unstable. With the acceleration of economic development, the existing span of enterprises tends to shorter and shorter. As a result, it will be difficult for the enterprises to keep responsibilities to provide life security for their employees. Providing life security by itself is too much burden for the enterprise.

Thus, establishing fair and open social security system is necessary to form citizen society. Establishing the system accelerates the transfer of human resources among enterprises or industries and socializes the burden of the enterprises.

In the process of rural labor transfer from rural areas to urban areas, the life of the transferred rural labors in the city is very tough. Although thousands of rural labors transfer to urban areas, they would not be accepted as citizens of the cities. Without being given social security in the cities, the transferred rural labors would not leave the land-based life security. Some of rural labors migrated to small and middle-sized cities would not receive permanent residence permits of the cities, as the land-based security is more stable than the one given by the cities.

Without a more perfect and fair social security system, real urbanization will not be achieved and the citizen society cannot be formed.

### **3.3.3 Social Exchange: Fulfillment of Citizen's life**

People need communications as a main part of social existence. People who left large families and village communities and transferred to cities need space for new social exchange opportunities. Even if the enterprises could provide this kind of space, the exclusiveness of the enterprises might restrain people's way of life and prevent people from being independent socially. Too much reliance on enterprises for providing social and living space will not lead to citizen society. Japan has negative experience regarding to this point.

Taking into account of creating public social exchange space, such as squares, meeting places, parks, libraries and public entertainment places, etc., is important when constructing cities. However, importance of setting up these kinds of public space has not been well recognized in most of small and medium-sized cities of China. Many of the cities do not provide enough places for citizen's communications. Producing atmosphere for accelerating social exchange is also necessary.

Social exchange may help removing loneliness or strangeness that are common feelings people have in urban lives. The social exchange may deepen people's awareness of being city residents and give incentives to make the city better. Social exchange gives power and nutrition for improving citizen society.

### **3.4 Seeking Sustainable Development Society**

Lack of resources, unbalanced distribution of resources and environmental degradation are the key elements restraining China's economic development and urbanization.

#### **3.4.1 Charging water resources: Alleviate Restrictions for Urbanization**

The most important issues to be considered regarding to restriction of China's economic development are water resource, cultivated land and energy structure.

Water is a basic need for human being and industrial production. In China, water resource distribution is unbalanced, because the amount of rainfall is big in the southern areas while it has been too small for years in the northern areas. In the northern areas where water scarcity is a serious problem, providing enough water

resource to guarantee industrial production and living activities in the cities is very difficult.

Along with urbanization, per capita water consumption and industrial water use increases by a large margin. As a result, what we call “water-using war“ on living water, industrial water and agricultural water is commonly happened in the northern part of China. It is predicted that many of cities in the northern part of China will face serious water shortage because of too much dependence on underground water. Thus, it is very important for the cities with less water resources to establish water-saving and water-circulating economic system. As agriculture is the largest water-consuming sector, improving efficiency of water use in agriculture sector is the key to resolve water shortage problem. However, consumption of underground water for farmland irrigation is increasing with the increase of rice production in the northern part of China, as the quality of rice produced in the northern areas is better than that of rice produced in the southern areas. Furthermore, almost half of plants relating to the water-consuming industries, such as heavy and chemical industries, are located in the northern areas. Thus, it is imperative to adjust the industrial structure in the northern areas to solve the water shortage problem.

Planting tree is another way to ease the reduction of water resource, as the rate of water evaporation is high in the northern part of China due to the lack of forest covering areas. The amount of rainfall is totally different seasonally, and the amount of rainfall entering to each water system is also different. Taking into account of these differences is important to think about the distribution of water in China. Many projects are under implementation nowadays in China to adjust these differences. Making reservoirs can be the way to adjust the seasonal difference of the amount of rainfall, and constructing canals can be the way to adjust the amount of entering rainfall to each water system. Central government is now making a plan for the project to divert the water of the southern regions to the northern regions. However, it should be noticed that the diverting of water has great impact on agriculture, life of residents of the region and ecological system.

Water relating problem is one of the biggest constraints that prevent urbanization

and economic development in the 21<sup>st</sup> century of China. In China, per capita water use is only one fourth of the world average, but the situation of waste of water resources and water pollution is very serious. Drought threatens about 400 million mu of cultivated areas, and the short of the irrigation water reached about 30 billion cubic meters per year, even though the coefficient of irrigation water use is only 0.4 in China while it is over 0.7 in developed countries. The amount of water shortage in cities is about 6 billion cubic meters annually, which 20 to 30 times higher than that of developed countries.

Waste of water and water pollution exacerbates the situation. According to the study conducted by the study team, almost all of small and medium-sized cities of China do not have adequate sewage treatment facilities. Actually, large cities also do not establish enough sewage treatment facilities. Statistics indicates that about 85% of urban sewage is directly discharged without any treatment, and 60 billion tons of untreated sewage is discharged to rivers each year. Untreated sewage discharge causes pollution of rivers, lakes and underground waters. As the cities are located along rivers in many cases, the river water pollution caused by the cities located in the upper stream of the river affects the cities located in the lower reaches of the river. Thus, the water relating problems are not confined to one city, and the problems needs to be resolved by all cities in the upper and lower reaches of the river.

Water is a basic need for human being as air. However, the amount of water is limited and the distribution of water resource is unbalanced while there is no limit to supply of air. Thus, water resource should be treated as a kind of public goods to guarantee supplying enough water at reasonable price. At the same time, saving of water resources and effective use of water must be encouraged. Optimized water use is accomplished when industries use water with highest productivity and public use water with the highest efficiency.

The study team suggests charging for the use of water resources in China. All fresh and underground water resources should be treated as one of the State resources, such as lands. Charging for the use of water helps deepening people's awareness for saving of water. The collected money by charging water use would be distributed to

the cities in the upper and lower reaches of the rivers, or in the regions that have the origin of diverted water. The money also would be used for treating sewage and cleaning river water. This water charging system will result in water-saving economy in China, provide financial resource for water resource protection and improve life of people, as the system can optimize water-use structure. The implementation of the charging system requires fair and strict policy system

### **3.4.2 Land Use Policy: Effective Use of Land**

Land use is one of elements that restrain the capacity of grain supply in China. The population equivalent to one-fifth of the world population is fed with 7% of world total cultivated land in China. Annual grain provision of 500 billion kilograms required has degraded lands in China. Further, about 5 million mu of cultivated land has been shifted for the another uses annually in China. This shift threatens self-sustenance of grain of China. Expansion of urban area, industrialization in rural area and scattered rural housing development are the reasons for the diminishing of cultivated land. China should promote urbanization by using land intensively and efficiently. Inconsistent land development should not be implemented to keep the areas of cultivated land. As the land use is inefficient especially in the small and medium-sized cities, the study team suggests;

1. The mechanism of controlling developed land and prohibiting land use for non-farming purposes should be introduced.
2. The tax rate on fixed asset should be raised, and the tax levying system in proportion to land-using price should be established.
3. The local government should lower the dependence on revenues gaining from transactions of land-use rights for its finance.
4. Expansion of the scope of the administrative body, reduction of planned development site, large-scale and intensive development of the city, and effective use of land are recommended.

### **3.4.3 Converting Energy Structure: For the Better Environment**

Urbanization results in not only concentration of people and economic activities, but also increase of energy consumption. As a result, environmental pollution will be prominent.

China is heavily depending upon coal for its energy source. Burning huge amount of coal has been causing damage by acid rain in many cities in China. Air pollution seriously damages health of urban residents and damages ecosystem and ruins of prehistoric sites. China is trying to solve the acid rain relating problems, and the only solution is to change energy source to cleaner ones, such as oil, natural gas, water, nuclear, wind and solar power, etc.

As China's estimated oil and gas reserve is not big, its reliance on overseas oil and natural gas will be increasing. The cities located in coastal areas are in advantageous position for using imported energy sources compared with the cities in inland area as transportation cost is cheaper for coastal cities. Coastal cities will have advantages for their industry, environment and economic growth by change of energy structure, while inland cities will have difficulties to cope with the change of energy structure. The differences of energy structural change in coastal and inland areas might accelerate the concentration of industries and people to coastal cities. To adjust energy structure, strengthen potential for economic development and improve environmental quality in inland cities, oil and gas pipelines should be constructed as soon as possible.

#### **3.4.4 Development of Waste Disposal System**

Garbage is residue generated from modern industrial production and daily lives of people. Generally speaking, garbage is divided into industrial waste and municipal waste. This report is focusing on issues relating to the latter. Annual per capita amount of municipal waste is about 440 kilograms in urban areas of China, and total amount of disposal of municipal waste in 668 cities of China is about 114 million tons per year. The increase rate of municipal waste is 10% annually.

The amount of municipal waste increases and the composition of garbage becomes more complicated with the change in people's life style. Municipal waste



has been used as fertilizer, but farmers tend to avoid using garbage as fertilizer recently due to the increase of garbage containing petrochemical substances. Further, the change of waste components makes waste disposal more difficult. Currently, China has 695 waste disposal sites, but it is not enough to cope with the increase of municipal waste. The increase of waste leads to degradation of urban environmental quality and increases pressure on urban administration.

The study team gives suggestions based on the following basic direction regarding to the waste disposal management; 1) Reduction of waste generation, 2) Encouraging re-use and recycling of waste, and 3) Implementing sanitary treatment on final disposal process.

## **Chapter 4 Urbanization Development Strategy of Jiangsu Province**

### **4.1 Preconditions and Characteristics of Development Strategy**

The urbanization development strategy of Jiangsu Province discussed in this chapter has following preconditions and characteristics:

I. This strategy is a 15-year space-based development strategy, II. The strategy is drafted according to conditions of globalization and national development, III. The strategy has taken the full consideration of the important factor -- population migration, IV. The strategy regards the formation of the Yangtze River Delta metropolis region -- with Shanghai as the core -- as the precondition for the space development of Jiangsu Province.

#### **4.1.1 Long-term Space Development Strategy**

Urbanization strategy is a space development strategy. China's five-year plan, in certain senses, is economic growth plan, and the planning period is also short. Differing from the five-year plan, the space development strategy mainly focuses on geographic distribution and development of resources, industries, population and cities. Its planning period is also long. The planning period of the urbanization development strategy of Jiangsu Province discussed in this chapter is set as 15 years -- or by the year 2015. The factors regarded as important for the plan are decided according to the 30-year prospect in the future. So, one important characteristic of the urbanization strategy of Jiangsu Province is that it is the long-term space development strategy.

#### **4.1.2 Vision of Globalization and National Development**

The globalization is the trend of global development, and globalization means the increasing enhancement of global division of labor, cooperation and competition. The basic unit of the division of labor, cooperation and competition in the globalization process is metropolis region.

### **(1) Industrial Agglomeration**

Industrial agglomeration is one of the basic phenomena of globalizing division of labor and competition. The Yangtze River Delta region, which covers Jiangsu Province, will become one of the largest industrially agglomerated regions in Asia, and even the world. "Agglomeration speeds up agglomeration" and the proportion of this region regarding industrial production will become bigger and bigger in the country. The advantages of industrial agglomeration of the region lie in: (1) solid industrial base; (2) the formation of the metropolis region with Shanghai as the core city; (3) the geographic condition of being able to conduct the large-scale sea transportation; (4) the support of large Chinese market etc. The huge industrial agglomeration will result in sustainable development in the Yangtze River Delta.

### **(2) Import of Resources**

The import of resources is the benefit offered by globalization. Most of existing raw material industries in China were established under the precondition of using domestic resources. Since most of resources in China are distributed in inland areas and oil and high-quality iron ore are scarce, China's raw material industries have such congenital disadvantages as high cost and low quality. The success of Baoshan Steel and Iron Corp., in Shanghai has proved that China's raw material industries must be developed with imported resources. China's raw material industries will not be able to survive and develop after the country's accession to the World Trade Organization (WTO) unless they import high-quality and cheap resources. The utilization of imported resources means that a large group of raw material bases will be constructed in coastal areas in the Yangtze River Delta and these areas will become the largest raw material industrial base in China.

The energy source in China still relies too much on coal, which has made the air pollution more and more serious. Most of Chinese cities are suffering from pollution. To solve this problem, the energy structure in China should be changed as soon as possible. So it is a trend to import large amount of oil and natural gas from abroad. The coastal areas in the Yangtze River Delta will become the largest base in China for the

imported oil and natural gas. The large amount of the imported oil and gas will be processed and treated in these areas and some of them will be supplied to cities in the middle and upper reaches of the Yangtze River.

The change of resources structure of raw materials and the import of energy will bring huge opportunity and duty to Jiangsu.

### **(3) Financial, Information and International Exchange, and Goods Transportation Centers**

With the economic development in China, Shanghai will gradually become one of the largest financial centers in the world and, meanwhile, Shanghai will also be developed into one of the largest information centers, international exchange centers and goods transportation centers in Asia.

How to take full advantage of and share the functions of Shanghai -- the financial, information, exchange and goods transportation centers -- is the key to the economic development in Jiangsu Province.

#### **4.1.3 Population Migration**

Industrialization and urbanization means the transfer of labors from agricultural sector to traditional and modern industrial sectors. The transfer of labors in different sectors means the population migration from rural areas to cities. Before the middle of 1980s, labors transferred in different sectors according to the rural industrialization policy, which encourage farmers to leave farming land, but not the living places (rural areas). Such transfer of labor was limited in rural areas. Starting from the late period of 1980s, the transfer of labor -- from rural areas to cities and from inland to coastal areas -- is being accelerated. The unprecedented population migration is speeding up the urbanization process and also appeals to the whole society for attaching importance to social changes caused by population migration.

Jiangsu is one of the provinces with the largest number of population migrating from elsewhere. With the development of Yangtze River Delta, more and more people will move from other provinces to Jiangsu and most of them prefer to be permanent,

instead of temporary, residents in the province. The transfer of population from other provinces to Jiangsu is the requirement and inevitable result of the development in Jiangsu and this reality must be treated seriously.

By taking consideration of population migration, the study team has made model analysis on future population in Jiangsu and the result is: the total population of Jiangsu will reach 90 million or 100 million by the year 2015. The cities of Nanjing, Suzhou, Wuxi, Changzhou and Nantong will by then become larger cities, each with the population of over 10 million.

The urbanization development strategy of Jiangsu Province is drafted on the basis of taking the full consideration of influence and requirement caused by population migration.

#### **4.1.4 Formation of Yangtze River Delta Metropolis Region**

In the year 2015, the three largest international metropolis regions in Asia will be Tokyo metropolis region, the Yangtze River Delta metropolis region -- with Shanghai as the core city, and the Pearl River Delta metropolis region -- with Hong Kong and Guangzhou as the core cities.

As an important component of Yangtze River Delta metropolis region, Jiangsu Province should put the emphasis of space development on how to induce to the largest extent the expansion of Yangtze River Delta metropolis region to areas of Jiangsu Province. This is the core of the space development strategy of Jiangsu Province.

#### **4.2 General Ideas of Urbanization Strategy of Jiangsu**

Jiangsu is one of the provinces in China with the biggest development potentials. In a long period of time in the future, the province will see sustainable industrial development and the rapid population increase. If scientific planning is not made for the space pattern of the province, Jiangsu will probably meet the chaotic situation in its urbanization process. Actually, such situation has appeared outstandingly in the province. So, the core of the general ideas of the urbanization strategy expounded in

this chapter is to encourage the intensive economic growth in the province.

The general ideas of urbanization strategy of Jiangsu Province can be summed up as "one region and four axis". The "one region" here refers to the Yangtze River Delta metropolis region -- with Shanghai as the core city and the "four axis" refer to: (1) Beijing-Shanghai Axis along the Beijing-Shanghai express railway; (2) Coastal Axis linking cities of Shanghai, Nantong, Yancheng and Lianyungang; (3) Inland Axis linking cities of Shanghai, Zhenjiang, Yangzhou, Huai'an and Suqian and (4) Yangtze River Axis covering cities along the Yangtze River.

### **(1) Yangtze River Delta Metropolis Region with Shanghai as the Core**

The metropolis region refers to areas where people may commute, go shopping and have daily business exchanges. As the commuting region, the radius of Tokyo metropolis region is about 100 kilometers. Thanks to the express railway, people is able to move within 1 to 1.5 hours in the region with the radius of 300 kilometers, so some people also define the radius of Tokyo metropolis region as 300 kilometers.

The idea of this strategy will set the radius of the Shanghai-cored Yangtze River Delta metropolis region at 100 kilometers. Among those cities of Jiangsu Province located in the Yangtze River Delta metropolis region, with the radius of 100 kilometers, three cities of Suzhou, Wuxi and Nantong are expected to be larger cities each with the population of over 10 million in the next 15 years. And the medium-sized and small cities of Kunshan, Taicang, Changshu, Zhangjiagang, Wujiang and Qidong are also expected to be medium-sized cities. Meanwhile, the idea of this strategy also sets the radius of Pan Yangtze River Delta metropolis region at 300 kilometers. The formation of Pan Yangtze River Delta metropolis region relies on the construction of high-speed railways to a great extent. According to the current programming in China, with the completion of the construction of Beijing-Shanghai express railway, all cities along Shanghai-Nanjing line will be included in the radius of the Pan Yangtze River Delta metropolis region. Among these cities, Changzhou and Nanjing are expected to be larger cities each with the population of over 10 million by the year 2015.

In the next 15 years, Jiangsu Province should put its emphasis on constructing

commuting railways and express railways linking these cities with urban areas of Shanghai, strengthen division of works in the Yangtze River Delta in such fields as goods transportation, passenger transportation, industries and living sectors and lure the expansion of Yangtze River Delta metropolis region to Jiangsu.

### **(2) Beijing-Shanghai Express Railway Axis**

The completion of Beijing-Shanghai express railway, which links Shanghai with such cities of Jiangsu as Changzhou, Wuxi, Nanjing and Xuzhou, will strengthen connections between these cities with Shanghai and promote the construction of the (Pan) Yangtze River Delta metropolis region. The area between Shanghai and Nanjing is expected to become the region with the largest industrial and population density in China. By the year 2015, all cities in Jiangsu Province, which are expected to be developed into the larger cities each with population of over 10 million -- with exception to Nantong --, are located along the axis of the Beijing-Shanghai express railway. To push the urbanization process, these cities should: (1) strengthen division of works and cooperation with Shanghai and (2) attach importance to constructing their own metropolis regions.

### **(3) Coastal Axis**

The North Jiangsu areas cannot benefit from the development of Shanghai because of the block of Yangtze River. In Jiangsu, the influence of Shanghai is mainly concentrated in South areas.

It is the key to the development of North Jiangsu areas to open up the route linking Shanghai with Nantong. After the open-up of the route, Nantong will be included in the Shanghai-cored metropolis region with the radius of 100 kilometers. By consolidating the construction of Shanghai-Nantong-Yancheng-Lianyungang Axis, the coastal areas in North Jiangsu is expected to be gradually included in the Shanghai-cored (Pan) Yangtze River Delta metropolis region. The consolidated development of the coastal axis will not only induce the northward development of Shanghai-cored metropolis region, but also bring development opportunities to North Jiangsu areas. So,

the construction of Shanghai-Nantong cross-Yangtze River passage should be speeded up.

#### **(4) Yangtze River Land Axis**

Yangtze River is the most important land axis in China. Along with the construction of railways and expressways along the Yangtze River, the connections between Shanghai and cities along the Yangtze River will be further strengthened. The import of the large amount of oil, natural gas and ore will make the Yangtze River Land Axis more and more important.

In the near future, the large amount of imported resources will be processed, conversed or transferred in areas near the estuary of Yangtze River. This area is expected to become the largest raw material, energy process and goods transferring base in China. Moreover, the amount of exported goods of cities along the Yangtze River will be increased continuously and cities in areas near estuary of Yangtze River demand bigger container-handling capacities of ports. It will become the opportunity as well as the task for Jiangsu to construct the large-scale port and raw material industrial base in areas near the estuary of Yangtze River.

With the development of Yangtze River Axis, such cities along the river as Nantong, Taizhou, Yangzhou, Zhenjiang and Nanjing will be developed into the large cities; the cities of Taicang, Changshu, Zhangjiagang, Yangzhong and Yinzhen will be developed into medium-sized cities with their own city characteristics.

#### **(5) Inland Axis**

In areas between Shanghai and Wuxi (Shanghai-Wuxi section), the Inland Axis, which links Shanghai with cities of Taizhou, Huai'an, Suqian and Xuzhou, is almost geographically overlapped with the Beijing-Shanghai express railway. The development of Jiangyin-Xuzhou section should focus on cities along the axis. Since the three cities of Huai'an, Suqian and Xuzhou are far away from Shanghai, it is the key to the development of Inland Axis to strengthen the relations between cities in the Jiangyin-Xuzhou section and the (Pan) Yangtze River Delta metropolis region. The



purpose of the construction of the Inland Axis is to develop cities along the axis in North Jiangsu: the key development will be conducted in cities along the axis when the relation between inland areas in North Jiangsu and the Yangtze River Delta metropolis region is strengthened.

### **4.3 Problems and Solutions**

A series of important problems must be solved to guarantee the realization of the ideas of the urbanization strategy of Jiangsu Province.

#### **4.3.1 Population Migration and Social Security**

Population migration is the precondition of urbanization and social security is the guarantee for population migration. The establishment and perfection of social security system is very important for guaranteeing the smooth population migration and the formation of citizen society. For urbanized society, which regards the population migration as the precondition for the establishment of itself, the social security system should try its best to guarantee interests of people who transfer in different geographic regions and different industrial sectors and provide the basic living and medical assurance for participants of citizen society.

#### **4.3.2 High-efficient Use of Land**

Compared to its population, China is a country with scarce cultivated land resources. It is the important task in China's urbanization process to strictly control the amount of land developed for non-farming purposes and use land efficiently. This task is even more difficult for Jiangsu, which is encountering rapid population increase and fast urbanization. The solutions to the problems are (1) to strictly control the amount of land developed for non-farming purposes and (2) to introduce the land-using asset tax.

##### **(1) Controlling the Amount of Land Developed for Non-farming Purposes**

We suggest that effective measures should be taken to strictly control the amount

of land used for industrial and housing purposes, encourage the intensive urbanization development and reduce encroaching of land in the urbanization process.

## **(2) Land-using Asset Tax**

We suggest that "land-using asset tax" should be introduced as soon as possible to (1) encourage the high-efficient use of land; (2) increase local financial and tax revenue; (3) push the reduction of land price; (4) guide the land-using practice by levying different taxes for different land-using purposes.

### **4.3.3 Formation of High-density Urbanized Society and City Public Transportation**

The Tokyo metropolis region benefits a lot from the perfect public transportation network, which is mainly composed by subway and light rail vehicles. The population of the region is over 30 million and the population density is the highest among cities in developed countries. The population density in 23 district of Tokyo is as high as 13,214 persons per square km (data in 1990). This population density is incomparably high compared to that of European and American countries, which take automobiles as the backbone transportation vehicles. While in the Puxi areas of Shanghai, the population density in 1991 was as high as 37,603 persons per square km, which is much higher than Tokyo. Today, the average population density in the completed urban areas in Jiangsu Province was as high as 23230 persons/square km (data in 1998), which is also much higher than the 23 district of Tokyo. Obviously, the public transportation network with automobiles as the backbone vehicles cannot support the normal economic and living operation of the cities with such a high population density. The future large cities of Jiangsu must as soon as possible make planning and construct the public transportation network with subway and light rail as major vehicles. Otherwise, the serious urban transportation jam will result in paralysis of urban function.

#### **4.3.4 Breakup of Administrative Jurisdiction Economy**

The unreasonable division of administrative jurisdiction is an important factor of obstructing the formation of China's metropolis region economy. Because China's administrative jurisdiction is divided at too many levels, the division is too complicated and governments at various levels have too much intervention on economic activities within their jurisdiction. It is very common to see that economies of different administrative districts are administrated in their own ways. In this sense, China's regional economy is the administrative jurisdiction economy, which has divided China's national land into fragments. With the expansion of circles of commuting, education, shopping and industrial division of labor, the administrative jurisdiction economy is playing bigger role in blocking the effective allocation of resources and formation of metropolis region. It has been very common to see in the Yangtze River Delta that the administrative jurisdiction blocks economic development of the metropolis region. So, it is necessary to adjust the division of administration jurisdiction as well as the administrative function of governments at all levels to meet the demand of the growth of metropolis region. The formation and healthy development of the Shanghai-cored Yangtze River Delta metropolis region and the metropolis regions of cities in Jiangsu Province to the large extent rely on the breakup of administrative jurisdiction economies.

##### **(1) Adjusting Division of Administrative Jurisdiction**

It is necessary to restructure the division of administrative jurisdiction so as to avoid the negative influence of the division on the development of metropolis region, avoid duplicated construction of infrastructure, improve administrative efficiency and reduce administrative staff.

##### **(2) Making Clear Division of Works of Governments at All Levels**

Grassroots administrative units should shift their working emphasis as soon as possible from intervening economic activities to providing administrative service, social security and social welfare. The expansion of metropolis region makes the

function of cities clearer, and the number of people whose living and working locations are in different grassroots administration districts is increasing. As the economic activities and people's living space is expanding, the governments of grassroots administrative units have stronger abilities of intervening economic activities. Meanwhile, with the improvement of living level, the citizens have bigger demand for administrative service and social welfare. So, it is inevitable for the grassroots governments to change their working emphasis.

### **(3) Drafting Development Program of Metropolis Region**

It is necessary to implement the space programming with the metropolis region as the unit, draft the development program of metropolis region and promote the reasonable development of metropolis region.

### **(4) Planning Area-wide Infrastructure as a Whole**

The area-wide infrastructure is the backbone supporting the formation of metropolis region. Because the construction of area-wide infrastructure is usually conducted in different administrative jurisdiction, it is common to see the chaotic area-wide infrastructure in China.

Since the Yangtze River Delta metropolis region covers several provinces and cities, it is very important to plan as a whole the construction of ports, airport, expressway and commuting railway systems.

## **4.3.5 Perfecting Local Finance**

A sound local finance is the guarantee for the urbanization. Meanwhile, taxation is also important for guiding the healthy development of urbanization. This report puts forward the following two suggestions on restructuring local taxation system:

### **(1) Restructuring Levying System of Personal Income Tax**

The tax-levying places of personal income tax should be changed to living place of the person, instead of the working place. Local governments should strengthen their

relations with residents in their responsibilities, rights and obligations and push the humanitarian urban construction.

## **(2) Land-using Asset Tax should be levied**

We suggest that the land-using asset tax should be levied as the local tax so as to increase the tax revenue of local government and encourage the high-efficient use of land.

### **4.3.6 Key Projects**

To realize the general ideas of urbanization strategy of Jiangsu Province, the following key projects should be launched as soon as possible:

#### **(1) Shanghai-Nantong Route**

The construction of Shanghai-Nantong Route is the key to the development of Coastal Axis and also the basic guarantee for the development of Nantong city as well as the coastal regions in North Jiangsu. We suggest that the route should be constructed as the composite transportation passage -- with expressway and commuting railway as the main component -- so as to promote the formation of Coastal Axis.

#### **(2) Lianyungang-Yancheng-Nantong-Shanghai Railway Along Coastal Axis**

We suggest that the construction of the Lianyungang-Yancheng-Nantong-Shanghai railway along the Coastal Axis, with the passenger transport as the main purpose, should be launched at the appropriate time to promote the exchange of cities along the Coastal Axis and strengthen the development of these cities.

#### **(3) Xuzhou-Suqian-Huai'an-Jiangyin-Wuxi-Shanghai Railway Along Inland Axis**

We suggest that the construction of the Xuzhou-Suqian-Huai'an-Jiangyin-Wuxi-Shanghai railway along the Inland Axis, with passenger transport as the main purpose, should be launched at the appropriate time to promote the exchange of cities along the Inland Axis and strengthen development of these cities.

#### **(4) Construction of Nantong• Taicang Port District**

The development of Nantong\_Taicang Port District should be strengthened as soon as possible. Three large-scaled international port districts are expected to be in the Yangtze River Delta to meet the growing demand of Yangtze River Delta metropolis region and the Chinese inland areas for the international goods transportation. The three port districts are: 1) Dayangshan and Xiaoyangshan port districts; 2) Beicang Port• Daxiedao Port District; 3) Taicang• Nantong Port District.

Compared with Beicang Port• Daxiedao Port District, the natural condition (depth of water) of Taicang• Nantong Port District is not very good. But its geo-political advantages -- short distance from Shanghai, near estuary of the Yangtze River, which is convenient for shipping transfer, and being supported by strong industrial base -- are incomparably better than other port districts.

We suggest that department concerned should speed up the construction of Taicang• Nantong Port District, continue to deal with silts problem in areas near the estuary of Yangtze River and deepen the Taicang• Nantong port.

#### **(5) Building Heavy Industry Belt in Areas Near Estuary of Yangtze River**

Since the energy structure in China will be changed in the future and the country's reserves of high-quality ore, oil and natural gas are inadequate, we suggest that a large heavy industrial base, which are developed by using imported energy and ore, should be established in areas near the estuary of Yangtze River so as to promote China's change of energy structure as well as the development of raw material industry.

#### **(6) Construction of International Goods Transportation Airport**

With the increasing demand for air transport of goods, it is an urgent task to establish an international goods transportation airport in the Yangtze River Delta. We suggest that Jiangsu Province should grasp the opportunity, make consultation with relevant government departments and companies from home and abroad, try to get the permission of building the large international goods transportation airport in Jiangsu so

as to promote the development of airport-based industries.

### **(7) Building Modern Inland Water Transport System of Grand Canal River System**

The Grand Canal used to be the transport artery linking the northern and southern regions of China. With the appearance of modern transport vehicles such as automobiles, railway and ocean ships, the Grand Canal played decreasing role in goods transport. However, the Grand Canal nowadays still transports part of energy, building materials and grain in Jiangsu Province. But the inland water transport system of the Grand Canal River System still lags behind the requirement of times in such sectors as waterway regulation, waterway traffic control, and water-and-land through transport and port administration.

We suggest that relevant departments should, by learning the experience of the Rhine River in Europe, develop the Grand Canal River System into a modern inland water transport system so as to promote the development in areas along the Grand Canal River System and reduce the transport cost in the Yangtze River Delta region.

The Grand Canal River System itself is a kind of very charming tourism resource and the development of the Grand Canal must take the full consideration of its humanistic value.

### **(8) Wind Power Generation in Coastal Areas of Jiangsu**

Among numerous new energies, the technology of wind generation is relatively more mature and so far as its cost, it may compete against the thermal power generation. The coastal areas of Jiangsu are very rich in wind resources and also in vicinity of the large consumption areas. So we suggest that relevant departments should make study on building large wind generation plant in coastal areas of Jiangsu so as to speed up the development of new energy in Yangtze River Delta areas, reduce the environmental pressure and create development opportunity for the coastal areas in North Jiangsu region.

# Conceptual Plan of Coastal International Metropolitan Area in the 21<sup>st</sup> Century



**图例**

大城市圈

图中国土轴带宽约200KM

比例尺 1 : 25 000 000

图中界线不作划界依据