

# ANALYSIS OF LAND USE ISSUES IN THE PROCESS OF URBAN-RURAL INTEGRATION

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**Abstract:** As the transition zone between urban and rural areas, the urban fringe plays an important role in the infiltration of urban economy, culture and social concepts into the countryside. This area is not only the physical boundary between the city and the countryside, but also the intersection and integration of two different lifestyles and values. Therefore, how to realize the overall planning from land layout to socio-economic characteristics through careful land use planning is a subject of great research value. This study deeply discusses the mode of urban-rural interaction, analyzes the problems faced by land use in the process of urban-rural integration, and further explores the root causes of these problems. Based on these analyses, this study puts forward targeted countermeasures to provide scientific planning suggestions and policy support for the realization of urban-rural integration.

**Keywords:** Urban-rural interaction model; Dynamic land use; Urban-rural integration

## 1 INTRODUCTION

In the process of urbanization, there is a common phenomenon in land use at home and abroad, that is, the process of urbanization is always accompanied by changes in land use patterns. In China, urbanization and its synergistic effects have driven the changes of land natural attributes, economic attributes, social attributes and ecological attributes in urban and rural areas, such as land supply and demand, land use spatial structure, land use functional structure, and land ownership relationship. Through the analysis of the impact of the suburbanization process of some cities on the land use in the urban suburbs (urban fringe), it can be seen that the dynamic succession of land use in the urban suburbs is the result of the interaction between urban and rural areas, and the non-agricultural development of land in the urban suburbs expands from the central city to the rural area, which is orderly and phased [1].

However, some scholars have two misunderstandings about China's urban-rural integration strategy: one is that urban-rural integration is to integrate urban and rural areas (even if rural areas become cities); the other is that urban-rural integration is the integration of industrial layout between urban and rural areas (that is, excessive development of rural economy). All these understandings have led to policy failure and serious waste of resources. In fact, the most fundamental goal of this strategy is to break through the institutional barriers and establish the mechanism of "industry supporting agriculture and cities supporting rural areas". The core content of this strategy is to strengthen the interaction between urban and rural areas. It is generally believed that the interaction between urban and rural areas is the flow of material, capital, manpower, information and technology between urban and rural areas. However, China has a vast territory, and there are obvious regional differences in the interaction between urban and rural areas. Therefore, urban-rural interaction shows different types in different regions, and needs different ways to express the types of urban-rural integration.

The main purposes of this article are as follows: (1) to analyze the dynamic land use of different types of urban-rural integration and urban-rural integration areas in China. (2) Propose various solutions to achieve urban-rural integration.

## 2 TYPES OF URBAN-RURAL INTERACTION PATTERNS AND CORRESPONDING DYNAMIC LAND USE PATTERNS

The urban-rural economic interaction mode refers to the dynamic balance process of gradually realizing the development of urban and rural areas on the basis of the overall improvement of urban and rural purchasing power by actively promoting the circulation of various elements such as human resources, markets, information, industry and culture between urban and rural areas to form a comprehensive communication, contact, exchange and mutual promotion mechanism between urban and rural areas in the process of economic and social development. In the process of urban-rural integration, cities and rural areas, as different types of economic subjects, will encounter a series of resource factors such as human resources, capital, land and so on, regardless of the emphasis on urban or rural development strategies. These problems must be effectively solved through the interaction between urban and rural areas. For this reason, this section analyzes the different types of development in the urban-rural interaction mode, summarizes the different land use modes, and finds out what constraints exist in the land use in the urban-rural interaction mode, in order to clarify the problems existing in the process of China's urban-rural integration and provide theoretical guidance for the implementation of the urban-rural integration strategy.

### 2.1 Types Of Urban Rural Interaction Modes

The goal of the coordinated development of urban and rural areas is to achieve the coordinated development of urban modernization, rural urbanization and urban-rural integration. The core issue is to deal with the problems of "people", "land" and "industry". Through the analysis, we can see that different urban-rural interaction patterns show different dynamic land use patterns. Among them, the urban-rural interaction mode mainly includes three types: urbanization peripheral areas, small towns and marginal areas in cities.

### ***2.1.1 The periphery of urbanization in cities - suburbs***

This type exists in the peripheral areas surrounding all cities. From an administrative perspective, the suburb refers to the area surrounding the urban built-up area, which may also encompass areas that need to be controlled for urban development, including both the inner and outer suburbs. In cities of varying sizes, the size and functions of suburbs differ. In large or megacities, due to the city-administers-county administrative system, the geographical scope of suburbs can be extensive, even encompassing several county seats and market towns. Meanwhile, the suburb constitutes a relatively stable administrative boundary. Any land use changes necessitated by development must undergo certain procedures, specifically, expanding the administrative boundaries of the city [2].

### ***2.1.2 Small-town***

China's urban development has always emphasized the integration of urban and rural areas, as well as the integration of industry and agriculture. Small towns, due to their crucial role in bridging urban and rural areas, are the most active in the urban network system. Economically prosperous small towns mainly consist of non-agricultural industries and a strong agricultural economy [3].

### ***2.1.3 Fringe areas***

Urban fringe refers to the city that relies on the development of labor force. From the perspective of spatial form and urban radiation, it describes the spatial state of urban land to rural land. It has no clear boundary of administrative delimitation, and has the characteristics of dynamic, transitional and complex. In addition, the urban fringe is a dynamic development zone with periodic fluctuation development law, which gradually evolves from the mixed state of urban and rural areas in the periphery of the city to the urban form, and has the trend of outward promotion in scope.

## **2.2 Land Use Type**

According to the literature, the promotion of industrialization, urbanization and urbanization has gradually made the rural area transition to the urban land use mode. The hierarchical division and circle structure of land use of the three urban-rural interaction models are gradually reflected, that is, four types of residential, commercial, industrial and agricultural land are successively distributed from the center to the outside, and the four types are separated and cross arranged in the whole space.

### ***2.2.1 Urbanization in cities land use in peripheral areas***

The suburban area is the peripheral area close to the urban area. The land use type of the suburban area is mainly urban agriculture, mainly Horticulture (planting flowers, bonsai, etc.) and facility agriculture (greenhouse vegetables, greenhouse agriculture, etc.). At the same time, the city's industry, storage, external transportation, large green space, etc. are distributed. The outer suburbs are far away from the urban area, mainly producing grain and cash crops, or small towns with urban industry. Based on the proportion of output value and employees of the three industries, this paper analyzes the economic regional types of small towns in the suburbs of Beijing by comprehensively using the location quotient method and Nadal method, which has a very obvious spatial distribution characteristics of "core periphery", showing a diversified development trend. Small towns in the suburbs of Beijing can be divided into four types: urban agriculture driven type, manufacturing owner led type, service owner led type and balanced development type, accounting for 34%, 10%, 31% and 35% respectively [4].

### ***2.2.2 Land use in small towns***

The land use of small towns is mainly reflected in the diffusion base of urban industry, and it is also the spatial agglomeration center of rural industrialization and urbanization in the suburbs. Satellite cities or secondary cities are established here. The real estate development is mainly based on the development of land in blocks, and the development scale of various industrial parks (including township enterprise parks, municipal industrial parks, economic and technological development zones, and individual and private economic development zones) is relatively large [5].

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According to the summary, the urban-rural ecotone is located at the junction of the two "plates" of "city" and "countryside". Driven by the two forces of urban radiation and expansion and rural urbanization, land use change is the most sensitive. Through summarizing the process of urban-rural integration in China, the urban-rural interaction model mainly includes three types of urbanization peripheral areas, small towns and marginal areas in cities. From the perspective of land use mode, land use model can be divided into several types: suburban agricultural land vegetable land industrial land residential land commercial and service facilities supporting land. From the perspective of input

factors, land use is mainly labor capital intensive, capital technology intensive, structural intensive and ecological intensive. From the perspective of urban-rural interaction model, land use model and input factors, the types and functions of urban-rural land use are complementary to urban economic development and functions, and finally form different urban-rural interaction modes. However, in the process of urban-rural integration, in addition to the advantages of facilitating urban life, promoting urban-rural industrial development, and developing rural land use, there are also many land use problems, and the root causes of the problems are more complex. This paper makes a simple sorting and analysis, in order to find out the ways to solve the urban-rural integration, and provide theoretical guidance for the realization of urban-rural integration in China.

### **3 PROBLEMS OF LAND USE IN URBAN RURAL INTEGRATION**

Through the above analysis, it can be seen that in the process of urban-rural integration, the level of urban economic development and resource conditions determine the different land use patterns. How to solve the problems of land use and household registration system is of great significance to ensure the comprehensive, coordinated and sustainable development of economy and society and the process of urban-rural integration.

#### **3.1 Occupation Of Arable Land**

The urban fringe is the area with the most concentrated non-agricultural transfer of agricultural land, and it is also the area with the most intense competition in urban and rural land use and land speculation. China's urbanization is at a stage of rapid development, and the phenomenon of suburbanization has begun to appear. With the progress of suburbanization, the migration of population promotes the rapid development of the real estate industry, occupying a large amount of land, especially high-quality farmland [6].

#### **3.2 Unreasonable Allocation Of Land Resources And Serious Waste Of Land**

The land use types in the urban-rural fringe are complex and diverse, but different land use types cross and interfere with each other in layout. For example, new residential areas are adjacent to rural residential areas, enterprises and livestock breeding are often mixed, and commercial land is sandwiched in the middle of industry and mining, which not only causes a waste of land resources, but also makes urban and rural construction extremely uncoordinated. In addition, a large number of development zones generally have the phenomenon of "expropriation but not use", untimely development and utilization, large areas of land are idle and wasted, and land use efficiency is generally low. Due to the large scale of land acquisition in these development zones, the waste of land resources is also the most serious area. On the one hand, the relationship between man and land is very tense in the urban-rural fringe. On the other hand, there are the phenomena of large construction land occupation, low building density, low plot ratio, and serious waste. Many units often have to build fences or wire mesh around the periphery of the acquired land due to the large area of land acquisition, high land acquisition costs and lack of funds for construction, resulting in serious waste of land resources [7].

#### **3.3 Household Registration System**

As China relaxed the control of household registration management on the free movement of rural population in 1984, a large number of rural people poured into the city. These floating population are mostly concentrated in the urban fringe for some reasons. There are differences between this part of the population and urban areas in terms of labor and employment, social welfare, children's education and other issues. The main reason is the restriction of household registration, which does not enjoy the same treatment, thus hindering the transition from the dual economy of urban and rural population integration to the unitary economy.

### **4 ROOT CAUSE ANALYSIS OF PROBLEMS**

Based on the above analysis of the characteristics and problems of land use in the urban-rural fringe, it can be found that the rapid development of urbanization and the expansion of urban land use is the direct reason for the disorder of land use in the urban-rural fringe. The land use and management system can not keep up with the rapid development of urbanization, and the management efficiency is very backward. Before the use procedures of a parcel of land have been completed, its use mode has been changed several times [8]. However, the deeper reason for this phenomenon and contradiction is the dual system of urban-rural division in China.

#### **4.1 Lack Of Land Resources**

With a large population, land resources are scarce and non renewable, especially the scarcity of arable land is the basic national condition of China. China has a large amount of land in absolute terms. The total area of inland land is about 9.6 million square kilometers, ranking the third in the world, but the per capita possession is small. The per capita land area is about 12 mu, less than 1/3 of the world per capita level (40 mu). The expansion of cities and towns needs land resources as support. The expansion of regional transportation facilities in small towns and the improvement of rural

living environment due to the increase of farmers' income all require a lot of land. The location conditions and economic foundation of the suburbs of large and medium-sized cities and the urban-rural fringe are good, so the land occupied by their construction and expansion is mainly cultivated land with good topographic conditions and good soil quality.

#### **4.2 Urban And Rural Economic Development And Population Growth**

The development of cities, like the growth of urban and rural population, needs certain land support in the process of development and growth, and the expansion of built-up areas will continue to erode the surrounding agricultural land (mostly fertile farmland). It is necessary to develop cities and realize the dynamic balance of the total amount of cultivated land, so the contradiction between construction land and agricultural land is becoming increasingly prominent. [9] With the continuous increase of rural surplus labor force and its transfer to cities, towns and urban and rural areas, it is predicted that in the next 15 years, cities at all levels and all types of cities, including towns, will increase the urban population by about 16million-17million each year. However, the original big cities can no longer accommodate such a large number of new people. Therefore, there will be the problem of the occupation of cultivated land by urban construction, one-sided emphasis on "making money from land", ignoring the protection of cultivated land, and the phenomenon that farmers make money by selling land and arbitrarily occupy cultivated land. Excessive occupation of cultivated land seriously affects the sustainable development of agriculture [10].

#### **4.3 The Land Use And Management System Cannot Keep Pace With The Rapid Development Of Urbanization**

Different land systems in rural and urban areas are partly responsible for the separation of urban and rural dual structures. First of all, land ownership is different. Urban land is owned by the state, while rural land is collectively owned by farmers. Secondly, the land use system is different. The acquisition of urban land use right is mainly in the form of bidding, auction and listing. There are many forms of rural land use right transfer. To sum up, there are five basic forms, namely, shareholding, leasing, subcontracting, transfer and exchange, accounting for 35.9%, 29.5%, 23.4%, 3.0% and 2.6% respectively [11]. Third, the land management system is different. In 1986, China established a unified urban and rural land management system to effectively manage land. However, the relationship between urban and rural land has not been straightened out in terms of system. In order to develop and build cities, such means as seizing cultivated land should be adopted, so that rural land can be used as the "reserve force" of urban land at any time to change its nature.

### **5 COUNTERMEASURES AND SUGGESTIONS**

#### **5.1 Choose A Reasonable Way Of Land Use**

In the process of urban land use, we should strive to achieve the maximum degree of intensive and efficient use, and optimize the allocation of land resources in this way. Through such efforts, we can effectively save some land resources, thereby reducing the occupation of agricultural land. This practice not only helps to protect cultivated land resources, but also promotes the coordinated and sustainable development of urban and rural economy, and ensures the long-term stable growth of social economy.

In order to achieve this goal, the government and relevant departments need to formulate and implement a series of scientific and reasonable land management policies. These policies should encourage land users to adopt more economical and environmentally friendly land use methods, such as promoting high-rise buildings and multi-storey buildings, in order to reduce the plane expansion of land. At the same time, land use planning should be strengthened, and different functional areas such as industry, commerce and housing should be reasonably divided to avoid the waste of land resources.

#### **5.2 Effective Urban And Rural Land Use Management**

In the process of promoting urbanization, if the land use in rural areas is lack of rationality, it will directly lead to difficulties and challenges in urban land management. Therefore, in land management, we must adopt the strategy of unified management of urban and rural land to ensure that urban and rural land management can cooperate with each other and achieve effective cooperation. Although there is a distinction between urban and rural land management systems, which seems to be a division of labor on the surface, in fact, this division may lead to the disconnection between the two, which is not conducive to the balanced and healthy development of urban and rural areas.

In order to realize the unified management of urban and rural land, it is necessary to establish a comprehensive land management system, which should cover the planning, use, protection and supervision of urban and rural land. Through such a system, we can ensure the rational distribution and efficient use of land resources, while avoiding environmental problems and social contradictions caused by improper land use. In addition, the unified management of urban and rural land also requires a good communication and coordination mechanism between policy makers and implementers to ensure the consistency of policy and implementation.

#### **5.3 Summarize The Urban And Rural Development Model**

In the process of urban and rural planning and determining the scale of land use, it is essential to conduct in-depth analysis and Consideration Based on the local actual situation. This includes reasonably predicting the future population development trend, so as to accurately determine the scale of urban land. At the same time, it is necessary to conduct in-depth summary and Research on the urban and rural development model, so as to predict the urban and rural population and its change trend in the next few years as accurately as possible. Through these comprehensive analysis and prediction, we can formulate accurate and reasonable land use planning to meet the actual needs of urban and rural development.

In addition, urban and rural planners should also consider the principle of sustainable development to ensure that the planning scheme not only meets the current needs, but also leaves room for future development. In the planning process, environmental protection and resource conservation should be fully considered to avoid disorderly expansion and over development. At the same time, the planning should have a certain degree of flexibility, so that it can be adjusted when necessary to adapt to changes in socio-economic conditions. In addition, the planning should also focus on supporting public facilities to ensure the quality of life of residents and promote social harmony and stability.

#### 5.4 Policy And System Guarantee

In the process of urban-rural integration, we must consider and solve a series of key issues in advance, which involve many policy areas, including but not limited to the household registration system, fiscal policy, tax policy and social welfare system. First of all, the reform of the household registration system is a crucial step. It will open the door for farmers to enter the city and start businesses, so that they can find new development opportunities in the city. Secondly, the reform of the rural financial system can not be ignored, which will ensure that farmers and rural enterprises can obtain the necessary loan support, so as to promote the development of agriculture and rural economy. In addition, the reform of labor employment and social security system is equally important. It will enable farmers to cross the boundaries between urban and rural areas, find jobs in cities, and enjoy the same social security treatment as urban residents. Finally, the reform of the fiscal and tax system will help to establish a more equitable and efficient public finance system. Only in this way can we effectively integrate urban and rural resources, achieve mutual benefit and win-win between urban and rural areas, and promote the balanced development of social economy.

#### COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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