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Study on the Current Situation of Land Use in the Process of Urbanization in Yulin City

Jiuju Zhang[1], Zhen Huang[2,*]

[1]School of Educational Science, Guangxi College of Education, Nanning, Guangxi, China
[2]Guangxi Land and Resources Planning and Design Group Co., Ltd., Nanning, Guangxi, China
**Corresponding author*

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Abstract: Removing the restriction of urbanization land use bottleneck and making full use of land resources are the guarantee for the healthy and high-quality development of urbanization. From the perspective of urbanization development, this paper analyzes the current situation of land use in the developing process of urbanization of Yulin City, points out the existing problems of land use in the urbanization process of Yulin City, and puts forward the measures to solve the problems of land use in the urbanization process. This paper also takes Yulin as an example to study the land use situations of urbanization development, solves the contradiction between urbanization development and land use, and provides decisions and suggestions for Guangxi to further implement the big city strategy, optimize the urban spatial structure and layout, improve the quality and level of urban development, and form a new pattern of urban-rural integrated development.

1. Research Background

At present, the level of urbanization in Guangxi is relatively backward. The urbanization process here is short of scientificity and sustainability, and is in an extensive and low-level expansion state, which has restricted the development of industrialization and informatization, thus affecting the development of the whole economic society. Therefore, active guidance should be offered for the healthy and high-quality development of urbanization on the basis of fully saving resources and coordinating ecological and environmental protection. Break the limit of urbanization land use, and lay the foundation for the high-quality economic and social development of Guangxi.

Yulin has outstanding regional advantages. It is not only a city in Guangxi Beibu Gulf Economic Zone, but also an important hub connecting Zhuhai, Guangdong, Hong Kong, Macao and the Great Bay Area in Guangxi. In the future, Yulin's urbanization and industrialization process will enter a stage of accelerated development. The construction of a regional big city has a promising future. Therefore, it is meaningful to take Yulin as an example to study the situation of land use for urbanization development, solve the contradiction between urbanization development and land use, and provide decisions and suggestions for Guangxi to further implement the big city strategy, optimize the urban spatial structure and layout, improve the quality and level of urban development, and form a new pattern of urban-rural integration development.

2. Urban Land Use Situation

2.1. Urban Land Use Structure of Yulin City

According to the results of urban cadastral inventory, the urban land of the city in 2017 was 24259.35 hectares. From the perspective of the share structure of the five major categories of land in the city, industrial land accounts for 25.95%, which is within the scope of national standards. Residential land accounts for 32.90%, which is within the scope of national standards. Public management and public service land accounted for 10.77%, higher than the national standards. Transportation land accounts for 11.60%. Although it is within the scope of national standards, its value remains low in the scope of standard values, which still needs to be increased. Parks and green spaces account for 2.34%, which is far lower than the national standards, and there are few parks and green spaces in the city (Table 1).

Table 1: Comparison Table of Five Major Categories of Land Use Ratios with National Standards in Yulin city

	Proportion in 2027	National Standard	Comparative results
Industrial land	25.95%	15%-30%	Conform to the standard
Residential land	32.90%	25%-40%	Conform to the standard
Public management and public service land	10.77%	5%-8%	Relatively high
Transportation land	11.60%	10%-25%	Low by standard
Parks and green spaces	2.34%	10%-15%	Relatively low

From the perspective of per capita single land for urban construction, the per capita residential land is 29 square meters, which meets the requirement of national standards. The per capita land for public administration and public services is 9 square meters, which meets the requirement of national standards. The per capita land for transportation is 10 square meters, lower than the national standard value; The per capita parks and green spaces are 2 square meters, far below the national standard (Table 2).

Table 2: Comparison Table of Per Capita Single Urban Construction Land with National Standards

Unit: Square meter

	Per capita land in 2017	National Standard	Comparative results
Residential land	29	23-36	Slightly higher than the standard value
Public management and public service land	9	≥5.5	Conform to the standard
Transportation land	10	≥12	Conform to the standard
Garden and green land	2	≥10	Relatively low

It can be seen that from the perspective of the whole city, the low proportion of urban transportation land and the small amount of per capita transportation land are one of the main reasons for traffic congestion in urban areas. Urban parks and green spaces are less, the proportion of ecological land is low.

2.2. Urban Land Use Structure of Counties and Districts

2.2.1. Proportion of Urban Land Occupied By Five Major Categories of Land in Each County

Proportion of industrial land Except Luchuan County, Bobai County and Xingye County, whose proportion of industrial land is 31.58%, 31.68% and 30.32% respectively, slightly higher than the national standard range (15%-30%), the proportion in other four counties and districts is between 15% and 30%, which meets the requirements of national standards. The proportion of "Integration of Yulin and Beiliu" industrial land is 23.26%.

Proportion of residential land Except Bobai County and Beiliu City, whose proportion of residential land is 41.67% and 41.25%, higher than the national standard range (25%-40%), the proportion of residential land in Rong County is 23.13%, lower than the national standard (25%-40%). The proportion of residential land in Xingye County is 26.43%, which is in the low limit of national standard (25%-40%). The proportion of the rest counties is about 30%, within the scope of national standards. The proportion of "Integration of Yulin and Beiliu" residential land is 32.44%.

Table 3: The situation of urban land occupied by five main categories of land in the city's counties and districts

Unit: Hectare

Department name	Urban land	Industrial land	Residential land	Public management and public service land	Transportation land	Garden and green land
Yulin City	24259.35	6295.64	7981.97	2613.93	2813.62	568.5
Yuzhou District	7816.33	1468.56	2270.64	968.09	1097.11	309.21
Fumian District	1421.69	251.45	390.38	53.55	182.31	2.42
Rong County	2258.36	658.23	522.26	216.33	551.71	20.15
Luchuan County	2600.55	821.32	902	349.61	194.48	40.32
Bobai County	3794.42	1202.22	1581.26	365.55	193.7	25.18
Xingye County	2099.45	636.58	554.57	237.46	233.24	21.46
Beiliu City	4268.55	1257.28	1760.86	423.34	361.07	149.76
Integration of Yulin and Beiliu	13344.38	3104.29	4329.03	1369.96	1616.01	464.02

Note: The scope of "Integration of Yulin and Beiliu" includes all Yuzhou District and Fumian District, 8 towns in Beiliu City and 3 towns in Luchuan north, with a total of 26 towns (streets).

Proportion of land for public management and public service the proportion of land for public management and public service in Fumian District is 3.77%, lower than the national standard (5%-8%). The proportion of land for public management and public services in other counties is generally higher than the national standard (5%-8%). The proportion of "Integration of Yulin and Beiliu" land for public management and public service is 10.27%.

Proportion of transportation land the proportion of transportation land in Luchuan County, Bobai County and Beiliu City is 7.48%, 5.10% and 8.46% respectively, lower than the national standard (10%-25%). The proportion of transportation land in other counties and districts is within the range

of the national standard (10%-25%), among which the proportion of transportation land in Rong County is 24.43%, which is in the high limit of the national standard. The proportion of "Integration of Yulin and Beiliu" transportation land is 12.11%.

Proportion of parks and green spaces the proportion of parks and green spaces in all counties and districts of the city is generally low, which is lower than the national standard value (10%-15%). Among them, the proportion of Fumian district parks and green spaces is only 0.17%. The proportion of Rongxian County, Bobai county parks and green spaces is only 0.89% and 0.66%, which is far below the national standard. The proportion of "Integration of Yulin and Beiliu" parks and green spaces is 3.48% (Table 3-4).

Table 4: The proportion of urban land occupied by five main categories of land in the city's counties and districts

Department name	Industrial land	Residential land	Public management and public service land	Transportation land	Garden and green land
Yulin City	25.95%	32.90%	10.77%	11.60%	2.34%
Yuzhou District	18.79%	29.05%	12.39%	14.04%	3.96%
Fumian District	17.69%	27.46%	3.77%	12.82%	0.17%
Rong County	29.15%	23.13%	9.58%	24.43%	0.89%
Luchuan County	31.58%	34.68%	13.44%	7.48%	1.55%
Luchuan County	31.68%	41.67%	9.63%	5.10%	0.66%
Xingye County	30.32%	26.42%	11.31%	11.11%	1.02%
Beiliu City	29.45%	41.25%	9.92%	8.46%	3.51%
Integration of Yulin and Beiliu	23.26%	32.44%	10.27%	12.11%	3.48%

Note: The scope of "Integration of Yulin and Beiliu" includes all Yuzhou District and Fumian District, 8 towns in Beiliu City and 3 towns in Luchuan north, with a total of 26 towns (streets).

2.2.2. Per Capita Single Land for Urban Construction

Per capita residential land Per capita residential land in Yuzhou district is 40 square meters, slightly higher than the national standard range (23-36 square meters). The per capita residential land in Rong County is 19 square meters, lower than the national standard range (23-36 square meters), and the proportion of residential land is low. The rest of the county area per capita residential land is between 25-30 square meters, in line with the national standards. "Integration of Yulin and Beiliu" per capita residential land is 37 square meters, slightly higher than the national standard value.

Per capita land for public management and public service The per capita land for public management and service in Fumian District is only 3 square meters, lower than the national low limit standard (≥5.5 square meters). The per capita land for public management and public service in other counties and districts is more than 5.5 square meters, which meets the national standard, of which the per capita land for public management and public service in Yuzhou District is as high as 17 square meters. "Integration of Yulin and Beiliu" per capita land for public management and service is 12 square meters.

Per capita transportation land The per capita transportation land in Luchuan County, Bobai County and Beiliu City is 6 square meters one person, 4 square meters one person and 5 square meters one person respectively, which is far below the national low limit standard. The per capita transportation land in other counties and districts is higher than the national low limit standard value (≥ 12 square meters), among which Yuzhou District and Rong County is as high as 19 square meters per person and 20 square meters per person. "Integration of Yulin and Beiliu" per capita transportation land is 14 square meters.

Per capita park and green spaces The per capita parks and green spaces in all counties and districts of the city are generally low, which are lower than the national low limit standard value (8 square meters), of which the per capita parks and green spaces in Fumian district is only 0.2 square meters a person, the per capita parks and green spaces in Bobai county is only 0.5 square meters a person, and the per capita parks and green spaces in Rong county is only 0.7 square meters a person, which is far lower than the national standard. "Integration of Yulin and Beiliu" per capita parks and green spaces is 4 square meters one person. (Table 5)

Table 5: Per capita single land for urban construction

Unit: Square meter

Department name	Residential land	Public management and public service land	Transportation land	Parks and green spaces
Yulin City	28.5	9.3	10.0	2.0
Yuzhou District	39.6	16.9	19.2	5.4
Fumian District	25.1	3.4	11.7	0.2
Rong County	18.5	7.7	19.6	0.7
Luchua County	25.9	10.0	5.6	1.2
Bobai County	28.7	6.6	3.5	0.5
Xingye County	24.8	10.6	10.4	1.0
Beiliu City	26.4	6.3	5.4	2.2
Integration of Yulin and Beiliu	37.3	11.8	13.9	4.0

It can be seen that the proportion of industrial land and residential land in each county is generally high, but the proportion of residential land in Rong county is relatively low. The proportion of land for public management and public services in Fumian district is relatively small. The proportion of urban transportation land in Luchuan County, Bobai County and Beiliu City is relatively low; The proportion of land for ecological use, such as parks and green spaces in all counties is generally low, especially in Fumian District, Rong County and Bobai County.

3. Analysis on the Current Situation of Urbanization Development

3.1. Large Total Population but Low Urbanization Rate

Yulin is the second most populous city in Guangxi. In 2017, the city's registered residence population was 7.2419 million, which is in the second place of the whole region. It is the only two prefecture level cities in the region with a registered residence population of more than 7million. The urbanization rate of registered residence population is 33.66%, with an average annual increase of 3.35 percentage points compared with 2010. In 2017, the city's permanent population was 5.8108 million, and the urbanization rate of the permanent population was 48.19%, with an average annual increase of 1.23 percentage points compared with 2010. The urbanization level of permanent residents

ranks ninth in the region, about 1 percentage point and 10 percentage points lower than the average level of Guangxi and the country respectively [1].

Table 6: Development situation of urbanization rate in Yulin City

	2005	2010	2015	2017	An average annual increase during the period of "11th Five-Year Plan"	An average annual increase during the period of "12th Five-Year Plan"	An average annual increase during 2015-2017
Nationwide	42.99%	49.95%	56.10%	58.52%	1.39%	1.23%	1.21%
Guangxi	33.62%	40.11%	47.06%	49.21%	1.30%	1.39%	1.08%
Yulin	32.33%	39.60%	46.51%	48.19%	1.45%	1.38%	0.84%
Guangxi-Nationwide	-9.37%	-9.84%	-9.04%	-9.31%	-0.09%	0.16%	-0.13%
Yulin-Nationwide	-10.66%	-10.35%	-9.59%	-10.33%	0.06%	0.15%	-0.37%
Yulin-Guangxi	-1.29%	-0.51%	-0.55%	-1.02%	0.16%	-0.01%	-0.24%

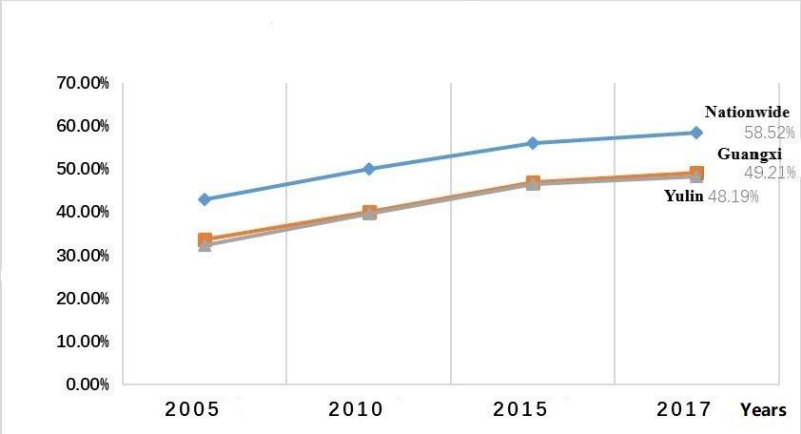

Figure 1: Comparison chart of urbanization rate changes

The urbanization level of Yulin has also been lower than the average level of Guangxi, but the gap is not large (Figure1). From 2005, Yulin's urbanization rate was 1.29 percentage points lower than the average level of the whole region, during the period of "12th Five Year Plan", with Yulin accelerating economic development, the gap of urbanization rate between Yulin and Guangxi narrowed. To 2015, the gap between the two narrowed to 0.51 percentage points, and then the gap between the two increased. By 2017, the urbanization rate of Yulin fell behind the average level of Guangxi by 1.02 percentage points (Table 6).

In recent years, Yulin has further promoted the reform of the registered residence system, further soften the terms of settlement in the city, as well as the urban area of Yulin. Furthermore, it fully soften the terms of settlement in the county (city) towns and towns in other regions, reducing the threshold for entering the city. At the end of 2017, the gap of urbanization rate between the permanent resident population and registered residence population in Yulin was 14.53 percentage points, which was 14.83 percentage points smaller than that in 2010 (the gap in 2010 was 29.36 percentage points) (Figure 2). In 2017, the urbanization rate gap between permanent resident population and registered residence population in Yulin was 3.45 percentage points lower than the average level of the whole

region. The gap ranked from small to large, and Yulin ranked fifth [2].

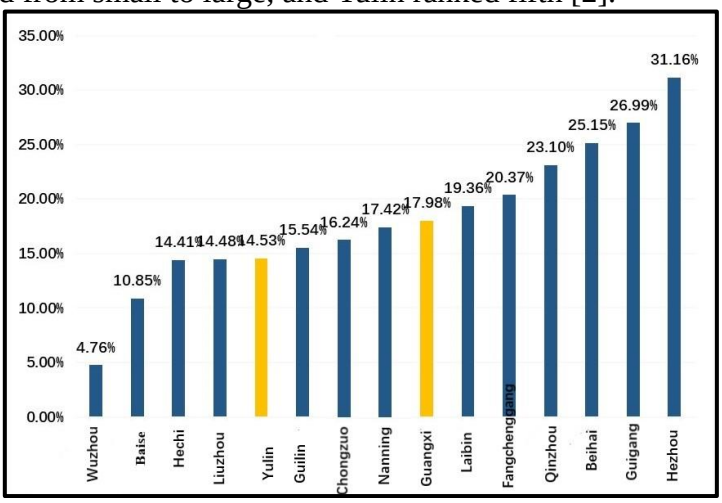

Figure 2: Figure of the urbanization rate gap between permanent resident population and registered residence population in all cities of the region in 2017

The urbanization level of all counties and districts is also generally low, and the development level is uneven. The urbanization rates of Yuzhou District and Beiliu City are relatively high, 55.47% and 78.13% respectively. The urbanization rates in the rest counties and districts are less than 45%, of which Fumian District, Bobai County and Xingye county are less than 40%. During the "12th Five Year Plan" period, the urbanization rate of all counties and districts increased by more than 1 percentage point per year, of which Fumian district and Luchuan county's rate increased faster, reaching 1.57 percentage points and 1.74 percentage points respectively. It can be seen that during the "12th Five Year Plan" period, the urbanization process of Yulin City has accelerated significantly, showing a momentum of rapid development. However, during the "13th Five Year Plan" period, the urbanization rate of all counties and districts slowed down, and the urbanization growth rate of most counties and districts was less than 1 percentage point (Table 7).

Table 7: Development situation of urbanization rate in counties and districts of Yulin City

	2010	2015	2017	An average annual increase during 2010-2015	An average annual increase during 2015-2017
Yulin City	39.60%	46.51%	48.19%	1.38%	0.84%
Yuzhou District	71.92%	76.98%	78.13%	1.01%	0.57%
Fumian District	29.36%	37.24%	38.93%	1.57%	0.85%
Rong County	33.88%	40.33%	42.07%	1.29%	0.87%
Luchuan County	33.08%	41.76%	43.35%	1.74%	0.79%
Bobai County	30.44%	36.72%	39.01%	1.26%	1.14%
Xingye County	29.85%	36.80%	37.93%	1.39%	0.56%
Beiliu City	46.98%	54.20%	55.47%	1.44%	0.64%

3.2. Large Population Density and Large Gap between Counties and Regions

In 2017, the population density of Yulin was 453 people per square kilometers (Figure 3), ranking first in the region, more than twice the average level of the region (206 people per square kilometers), more than 3 times the national average level (144 people per square kilometers), and more than 4 times that of Baise City (101 people per square kilometers), which has the lowest population density in the region. From the perspective of counties and districts, Yuzhou District has the highest population density, up to 1684 people per square kilometer, which is nearly 4 times the average level of the whole city (453 people per square kilometer), 8 times the average level of the whole region (206 people per square kilometer), and more than 10 times the national average level (144 people per square kilometer). It can be seen that Yulin has a large population density, a small per capita land area, and a large population density gap between counties and districts. Yuzhou District with the largest population density is more than five times that of Rong county with the lowest population density. (Figure 4)

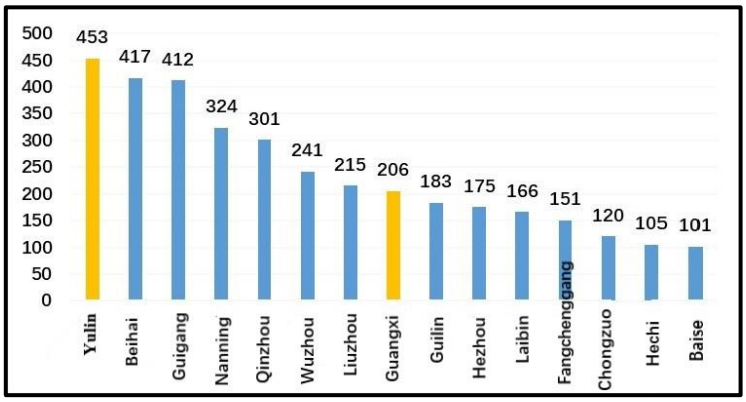

Figure 3: Statistical chart of population density of all cities in the region in 2017

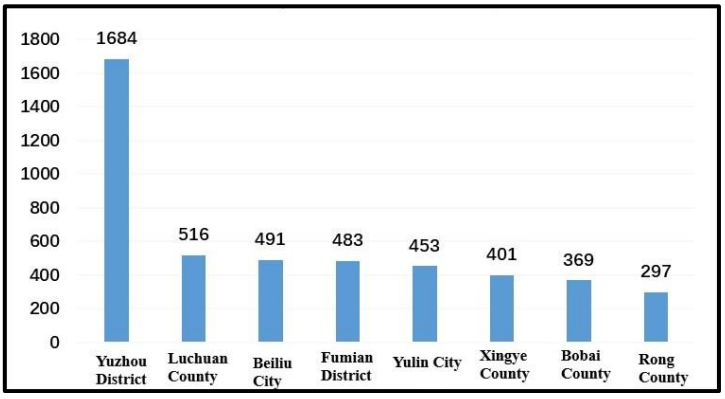

Figure 4: Statistical chart of population density of Yulin City in 2017

4. Problems in Urbanization Land Use

4.1. Unreasonable Land Use Layout and Prominent Contradiction between Supply and Demand of Construction Land

In terms of the spatial expansion layout of cities, towns and industrial parks, most cities and towns in Yulin choose areas with flat terrain and concentrated, continuous land around the main urban area to build industrial parks and new urban areas, occupying a large amount of cultivated land around the cities and towns.

At present, Yulin city is in the period of accelerated urbanization, and the improvement of urbanization level will inevitably lead to the expansion of urban construction land. Yulin is dominated by mountains and hills, and the distribution space of cultivated land and towns is highly overlapped, which makes the reserve of land resources insufficient. With the development of economy and the improvement of urbanization level, the contradiction between supply and demand of construction land is bound to increase day by day [3].

4.2. The Balance of Cultivated Land Occupation and Compensation, and the Difficulty of High Quality Occupation and Compensation

Plains and basins account for only 17% of the city's area. However, the high-quality utilization areas of urbanization and industrialization, as well as cultivated land are all concentrated in plain basin areas. A large amount of high-quality and high yield cultivated land, especially paddy fields, are distributed in the high-quality utilization area of urbanization and industrialization in Yulin City, more than 50% of which are cultivated land, and more than 80% of those cultivated land are paddy fields. Therefore, in the process of high-quality utilization of urbanization and industrialization in Yulin City, it is inevitable to occupy cultivated land. However, due to the extremely lack of cultivated land reserve in Yulin City, the indicators of cultivated land occupation and compensation in the cultivated land occupation and compensation balance pool are almost zero. On the one hand, within the scope of the city, Yulin is difficult to achieve the balance of cultivated land occupation and compensation, which is mainly achieved through supplementing the cultivated land from other cities. On the other hand, the proportion of paddy field in cultivated land in Yulin has decreased year by year. Although the balance of cultivated land occupation and compensation has been achieved in quantity, the balance in quality is extremely difficult. It is difficult to achieve cultivated land occupation and compensation with high quality. According to the situation of cultivated land occupation and compensation in the region, only Laibin City, Chongzuo City and Guigang City have sufficient cultivated land and paddy field occupation and compensation indicators. At present, the price of purchasing paddy field occupation and compensation indicators is 200 thousand yuan per mu. However, the indicators trading can only solve the occupation and compensation problems of current construction projects. From a long-term perspective, the cost of supplementing cultivated land is getting higher and higher, and the construction of urbanization and industrialization is subject to the occupation and compensation of cultivated land and paddy field, which presents plenty of difficulty to urbanization and industrialization [4].

5. Suggestions on Rational Land Use for Urbanization Development

5.1. Measures and Suggestions for Development Space Layout

5.1.1. Improvement of Urban Development Mode

In terms of the space expansion layout of towns and industrial parks, low-quality expansion mode of "urban sprawl", which is frequently employed in the past should be abandoned. The phenomenon of occupying tracts of cultivated land and permanent basic cultivated land should be avoided. Through placing belt-shaped transport line to form a cluster or a bunch of spatial pattern, and take tracts of cultivated land and permanent basic cultivated land as the green belt surrounding towns and industrial parks, and refine the regulation policy of the usage of cultivated land as the green belt of towns and industrial parks[5].

Develop the economy of satellite cities around big cities, build decentralized satellite cities, continue to build many small and medium-sized satellite cities, develop economic radiation, promote

industrial development, build a multi-level system of surrounding towns and cities. Fulfil more centralized government functions, more centralized industrial structure layout with the possibility of developing more complementary advantages. Fulfil more efficient resource allocation. Make regional central cities radiate surrounding cities and towns to form a regional economic community, as well as form a real situation of economic balance and integration [6].

5.1.2. Reclaim the Land in Mountainous Area for Urban Industrial Development

In order to speed up the process of industrialization and urbanization, traditional thinking of building industrial parks in areas with flat terrain and concentrated and contiguous land should be resolutely abandoned. The principle of protecting cultivated land should be adhered to. Plan and build industrial parks and new urban areas in mountainous, hilly, and rocky desertification areas, and take the path of sustainable development. In order to effectively promote the process of industrialization and urbanization, based on the principles of adjusting measures to local conditions, saving and intensification, giving priority to ecology, paying equal attention to construction protection, centralized and continuous renovation, and expanding the space for construction land, the site selection adheres to the principle of "three less and one none (less cultivated land, less forest land, less house demolition, and no basic cultivated land)". The site selection is also in accordance with the ideas of centralized layout, project agglomeration, intensive land use, industrial clusters, and adhering to the integration of industry and city. Through reasonable planning, the scope of urban construction will be gradually led to the mountains and avoid extending to paddy fields. There is no town that cannot be separated from the flat land, and there is also no agriculture that cannot be separated from the paddy field. The mountain characteristic agriculture should also go deep into the mountain, embed the natural ecology, and look for the joint point between characteristic agriculture development and ecological civilization development. For the construction of industrial parks and the construction site of new urban areas, we should adhere to the principle of reclaiming land in mountainous area, cutting peaks and filling valleys, and take advantage of the mountain. Continue to tap potential intensively and actively revitalize the land stock. The land that can be reclaimed in mountainous area is mainly barren and sloping land. In terms of such kinds of land, the farmers' long-term livelihood is not affected, which is easier for them to accept. The contradiction of land requisition has been basically eliminated, and the cost of land requisition and demolition has been greatly reduced. It can also protect the ecological environment, as well as adhere to the principle of "lucid waters and lush mountains are invaluable assets." By reclaiming land in mountainous area, we can avoid the occupation of cultivated land and permanent basic cultivated land, and avoid the damage to the ecological environment.

5.1.3. Scientifically Delimit the Spatial Layout of "Three Zones and Three Lines"

In view of the practical dilemma of the high overlap of cultivated land and urban distribution space in Yulin City, it is suggested to comprehensively find out and analyze the background conditions of national land space, carry out the suitability evaluation of resource and environmental carrying capacity and national land space development, as well as scientifically delineate the spatial layout of "three zones and three lines" (three areas refer to three types of space: urban, agricultural and ecological space, and three lines refer to three control lines: urban development boundary, permanent basic cultivated land, and ecological protection red line) [7]. By setting the stable cultivated land protection, especially the "red line of scale" of cultivated land, the bottom line of cultivated land protection scale should be maintained. Take the "red line of scale" of cultivated land and permanent basic cultivated land as one of the pre-requisites for the approval of urban planning and industrial park planning [5]. By setting up "expansion red lines" for urban and industrial parks, we should control the boundaries of urban development, reasonably determine the scale of urban development,

guide the decentralized and tandem development of towns, make the adjustment with both advancing and retreating patterns, and guide the orderly and intensive development of the city. Promote the formation of a scientific, appropriate and orderly land spatial layout system, and realize intensive and efficient production space, livable living space and beautiful ecological space.

5.2. Measures and Suggestions on Cultivated Land Occupation and Compensation

5.2.1. Control and Reduce the Phenomenon of Cultivated Land Occupied By Construction from the Source

Strengthen the preliminary demonstration of land use for construction projects, guide the scientific site selection of construction projects, change the mode of urban and rural construction land, encourage urban construction and industrial development projects to go to the mountain area, avoid occupying basic cultivated land or occupy as little as possible, promote the protection of cultivated land and economical and intensive land use, and reduce the total amount of cultivated land occupied by new construction.

5.2.2. Broadening the Channels and Funding Channels for Supplementary Cultivated Land

First of all, government departments should strictly implement the protection of the quantity of cultivated land, and reduce the total amount of cultivated land occupied by new construction by controlling increments, excavating stocks, and promoting intensification. At the same time, we should not only achieve the goal of “less occupation”, but also expand the channels for replenishing cultivated land by improving the responsibility implementation mechanism of the balance between occupation and compensation, so as to ensure “replenishment” and keep this key bottom line [8].

(a) Expanding the Sources of Supplementary Cultivated Land

Under the premise of strictly protecting the ecology, the state should scientifically delimit the scope of reserve resources for arable land. This means that historically formed barren orchards that are not included in the scope of cultivated land protection, gentle slopes of low-efficiency and inferior forests, sparse shrub forests and sun-dried fields, barren ponds and water surfaces that do not have ecological functions and are suitable for development should be used for agricultural land. , which can be used to implement the task of supplementing cultivated land after being identified by strict work procedures, so as to enhance the ability to supplement cultivated land [9].

(b) Expanding the Ways of Supplementing Cultivated Land

The cultivated land supplemented and transformed by projects such as land remediation, high-standard farmland construction, 100 billion (under the level of half a kilo) grain projects, comprehensive agricultural development, and farmland water conservancy projects. And the surplus of newly added cultivated land formed by linking the increase and decrease of urban and rural construction land can be included in the management of supplementary cultivated land, which can be used to balance the occupation and compensation of cultivated land. On the one hand, we propose to actively carry out various types of land consolidation and high-standard farmland construction projects at all levels to increase the amount of supplementary arable land. On the other hand, according to the potential survey of increase/decrease linking potential, Yulin City has a potential increase/decrease linking potential of about 10,000 hectares.

(c) Fully Opening up Funding Channels

On the one hand, increase the financial input for supplementary cultivated land. In addition to making good use of the funds such as cultivated land reclamation fees and paid land use fees for newly added construction land, especially after special expenses are earmarked for the general public budget, it is necessary to actively coordinate and arrange special funds for land use. All localities

should comprehensively consider the occupation of cultivated land and the quality of the land. Taking into account factors such as the cost of new cultivated land, compensation for resource protection, and management and maintenance costs, formulate differentiated standards for cultivated land reclamation fees to increase the cost of occupying high-quality cultivated land. On the other hand, we should innovate the implementation methods and vigorously promote the attraction of social capital and financial capital to participate in land consolidation and high-standard farmland construction. The state should encourage the adoption of the public-private partnership (PPP) model and the use of rewards instead of subsidies to improve the multi-input mechanism for land remediation.

5.2.3. Establishing A New Protection Mechanism for the "Quantity, Quality and Ecology" Trinity

In order to achieve the above goals, we should devote ourselves to adhering to the "three-in-one" protection of cultivated land quantity, quality and ecology, adhere to the multi-measures of cultivated land control, construction and incentive protection, and strictly control the total area of cultivated land occupied by construction, so as to promote the construction of cultivated land quality, and It can improve the compensation mechanism for cultivated land protection.

(a) Take action to protect and improve the quality of cultivated land. In the process of urbanization and industrialization, part of the cultivated land will inevitably be occupied, and the "cultivation layer" of the cultivated land is a precious soil resource obtained through long-term natural evolution and artificial cultivation. The material basis for increased income. In order to achieve the above goals, we should be committed to comprehensively promoting the stripping and reuse of the cultivated land occupied by construction, and the city and county governments should effectively urge the construction units to fulfill their responsibilities. In order to achieve the above goals, we should strive to include the relevant costs in the relevant land construction project investment budget, and speed up the process of soil "maturing". At the same time, the fertility of the soil should be improved, the quality of supplementary cultivated land should be improved, and efforts should be made to improve the quality of cultivated land. Relevant departments should also implement the "Dry to Water" project and increase the indicators of newly added paddy fields to solve some problems in Yulin City's difficulty in implementing the "Occupation of One to Make Up for One, Compensation for Advantages, and Occupation of "Paddy Fields" to compensate for paddy fields. Relevant departments should include low- and medium-quality arable land into the scope of high-standard farmland construction, implement quality improvement and transformation, and while ensuring the amount of supplementary arable land, improve the quality of arable land, and strictly implement the balance of occupation and compensation, and the superiority and the superior. We should strengthen the post-fertilization improvement of newly-added cultivated land, and comprehensively adopt engineering, biological, agronomic and other measures to carry out comprehensive management of degraded cultivated land. It should also be committed to the control and restoration of contaminated cultivated land, etc., to accelerate soil maturation, thereby improving soil fertility. In addition, soil testing and formula fertilization should be implemented to strengthen soil fertility protection. Only in this way can the productivity of cultivated land be effectively improved.

(b) Coordinating the Promotion of Cultivated Land Recuperation and the Implementation of Cultivated Land Ecological Protection Cultivated land is an important part of the natural ecosystem. Therefore, while developing and utilizing the reserve resources of cultivated land, the government must clearly prohibit the areas and land types to be reclaimed, so as to actively carry out comprehensive management of degraded cultivated land. The policy should orderly return farmland to forests and grasslands for sloping farmland with an inclination angle of more than 25 degrees, severely desertified land, and 15-25 degree slope farmland in important water source areas, as well as those severely polluted farmlands. Attention should be paid to the treatment and restoration of

polluted cultivated land, coordinated promotion of cultivated land for recuperation, and give full play to the ecological role of cultivated land. The pilot program of crop rotation and fallow shall be actively and steadily promoted by relevant departments, and the management of crop rotation and fallow shall be strengthened. Only in this way can the comprehensive agricultural production capacity be gradually improved; Strengthen the protection and transformation of crop rotation and fallow land, and give priority to the construction of high-standard farmland. We must attach importance to the strategy of adapting measures to local conditions, and implement a conservation tillage system of no-tillage and less tillage, deep loosening and shallow plowing, deep application of fertilizers, and crop rotation and intercropping, so as to increase soil organic matter content and balance soil nutrients. Only in this way can the combination of land use and land cultivation be realized, and multiple measures can be taken to protect and improve the productivity of cultivated land [10]. To "store grain in fertile land", "store grain in skills and technology", and through such measures to lay a solid material foundation and technical foundation.

5.2.4. Innovating the Balance Mechanism of Cultivated Land Occupation and Supplement

Based on the characteristics of Yulin City's cultivable reserve farmland resources and consideration of ecological security, it is recommended that Yulin take the lead in experimenting, take the lead in exploring the reform of the balance system of farmland occupation and compensation, and stop the rigid quantitative balance policy of "occupying one for one". Implementing the separation of cultivated land occupation and compensation is the only way for the local government to escape the dilemma of "right and left fighting". For the occupation of cultivated land due to special reasons such as major national or provincial projects, the rationality of the occupation of cultivated land shall be demonstrated at the examination stage. Correspondingly, the number of tasks for the amount of cultivated land in the county (city) area will be deducted. If the permanent basic farmland is occupied, the number of permanent basic farmland tasks will be deducted. For projects below the provincial level that occupy general farmland, the method of "occupying a certain proportion and then compensating for the corresponding proportion" is no longer implemented to achieve a balance in quantity. Relevant departments should switch to balancing the productivity of cultivated land within the county (city) area, and continue to collect cultivated land reclamation fees to invest in the transformation of existing low- and medium-yield fields. In addition, we should build high-standard basic farmland. Only in this way can the grain production capacity of arable land be improved to offset the production capacity loss of occupied arable land, so as to ensure that the grain production capacity of the county (city) area does not decline [10].

6. Conclusion

In a nutshell, the urbanization level of Yulin is lower than the average level of Guangxi, the urbanization development level of each county is uneven, the proportion of industrial land and residential land in each county is generally high, and the ecological land such as park green space is generally low. The layout of the site is obviously unreasonable. Yulin is dominated by mountains and hills, and the distribution space of cultivated land and towns is highly overlapped, which makes the reserve of land resources insufficient, and the contradiction between supply and demand of construction land prominent. At present, Yulin is in the stage of accelerated urbanization, thus, it can be inferred that more land resources will be required for future development. Land is an important guarantee for urbanization construction. Therefore, we should protect cultivated land, take more measures to tap the potential of land, and promote the recycling of land resources. Only in this way can we ensure the rapid development of urban land demand and promote the healthy development of urbanization.

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