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Rural Settlements' Potential for Consolidation in Makit County, Xinjiang Uygur Autonomous Region

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Abstract On the basis of the analysis on the status quo of land for rural settlements in Makit County, Xinjiang Uygur Autonomous Region, we estimate its potential for consolidation, and put forth the following recommendations: establishing a unified land market in urban and rural areas in the process of promoting new urbanization; achieving the goal of market allocation of rural construction land; dispelling the urbanization at the expense of the interests of agriculture, countryside and farmers.

Key words Makit County, Rural settlements, Potential for consolidation

The 18th Congress of China's Communist Party, the National People's Congress and the Chinese People's Political Consultative Conference in 2013 proposed to promote the new urbanization. Premier Li Keqiang wrote that urbanization is the great engine of China's economic growth^[1]. The core issue of advancing the new urbanization is farmers, and the core issue of farmers is land rights protection. However, due to the local governments' dependence on "land finance" and constraints of construction land, all eyes are fixed on the consolidation of rural settlements. Currently, the common practice is to use power of the government to seize rural resources in essence. Therefore, in the process of promoting new urbanization, we should not repeat the mistakes of the past but use market mechanisms to achieve the rational allocation on the basis of reasonable estimates of rural settlements' potential for consolidation, so that the interests return to agriculture, countryside and farmers. In this paper, we take the current situation of land for rural settlements in Makit County as the study object to estimate its potential for consolidation, and propose to use the market to allocate the land for rural settlements.

1 Overview of the study area

1.1 Natural and socio-economic conditions Markit County (77°28'–79°05' E, 38°25'–39°22'N) is located in the southwest of Xinjiang Uygur Autonomous Region and the middle reaches of Yarkand River, west to the Taklimakan Desert and north to the Karakoram Mountains, surrounded by the Hetian area, Yecheng County, Shache County and Bachu County. It has a temperate continental dry climate, with abundant sunshine, a windy spring, a hot summer and a cold winter. The county has jurisdiction over 10 townships, 3 farms of agriculture and forestry, where 13 ethnic groups inhabit such as Uygur, Han, Hui and Kazakh. In 2011, the local GDP reached 2.03 billion yuan, an increase of 7.59%

over the previous year; the per capita GDP was 9 184 yuan. The primary industry GDP was 1.09 billion yuan, the secondary industry GDP was 0.375 billion yuan, and the tertiary industry GDP was 0.565 billion yuan; the fiscal revenue was 150 million yuan, and per capita net income of farmers was 5701 yuan. There is a total population of 213 400 people in the county, including 47 800 of non-agricultural population and 165 600 of agricultural population, with urbanization rate of 22.41%. The county's total land area is 1 088 299.08 hm², including 139 267.32 hm² of agricultural land, 15 821.79 hm² of construction land and 933 209.97 hm² of other land.

1.2 The current situation of land for rural settlements and existing problems

1.2.1 Land use structure. As of the end of 2011, the area of land for rural settlements in the county was 6 349.92 hm², and the area of per capita land for rural settlements reached 383.45 m². The county is a typical desert oasis, and more than 80% of its land is desert and other types of land, leading to small share of homestead area in total land area (only 0.58%).

1.2.2 Existing problems. First, the land is in a natural settlement status, patchily distributed around the arable land, resulting in scattered arable land distribution. Second, there are many scattered villages, lacking unified land use planning and management. Third, the bungalows are the majority, and the phenomenon of "hollow village" is serious. Fourth, with a large number of labor forces flowing to the cities and towns, the number of dilapidated and idle houses is increasing year by year (Fig. 1, the red part is rural settlement).

2 Estimate of rural settlements' potential for consolidation

Rural settlements' potential for consolidation adopts the per capita index method^[2–3] for estimate, that is, firstly predicting the total rural population in the target year, then according to the per capita homestead standard, calculating the total homestead needed by rural areas in the target year, and finally using the total area of rural

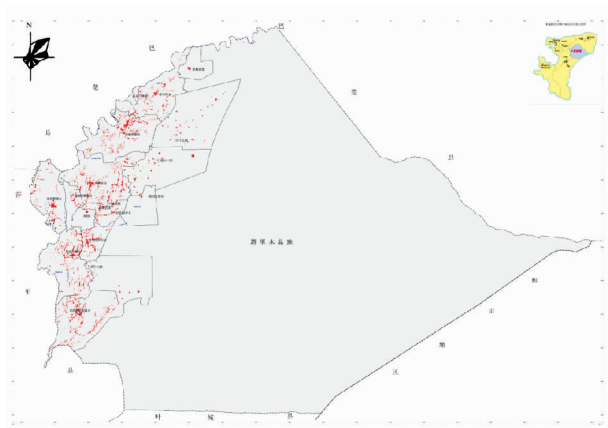


Fig. 1 Rural settlement distribution in Markit County

homestead in the base year to subtract the area in the target year to get potential for consolidation. The paper takes 2011 as the base year and 2020 as the target year.

2.1 Population forecast

2.1.1 Total population forecast. The consolidated balance method, the moving average method and the data in Table 1 are used to forecast total population of Makit County in the target year.

Table 1 Total population change in Makit County during the period 2003 – 2011

Year	Total population	Non-agricultural population	Natural growth rate/%
2003	173 058	27 986	7.63
2004	182 180	35 885	5.96
2005	189 593	37 429	6.8
2006	192 969	39 582	8.03
2007	197 835	40 159	13.36
2008	203 949	41 826	14.5
2009	207 692	42 051	13.33
2010	210 539	45 397	12.52
2011	213 417	47 828	12.94

Data source: *Markit Statistical Yearbook* (2003 – 2011).

(i) Consolidated balance method

$$\text{The formula: } P_t = P_0 (1 + r_1 + r_2)^n \quad (1)$$

where P_t is population at the end of the planning period; P_0 is population in the early planning period; r_1 is the natural growth rate of population; r_2 is the mechanical growth rate of population (take 0.34‰); n is the planning deadline.

Substituting the data into expression (1), the total population in Makit County in 2020 is calculated at 241 200.

(ii) The moving average method

$$\text{The formula: } P_t = P_0 + k \times n \quad (2)$$

where P_t is population at the end of the planning period; P_0 is population in the early planning period; n is the planning deadline; k is the average growth number of population in the planning year.

With the continuous and rapid growth of county economy and continuous optimization of the environment, there will be more large-scale projects in Markit. In terms of industrial project, the labor-intensive projects should be in the majority, so the mechani-

cal growth of the county's population will gradually change the current negative state.

$k = 7\,900$ (mean) is substituted into expression (2), to calculate the total population in Makit County in 2020 at 294 600.

Based on the above two methods, the total population in Makit County in 2020 will be 267 900.

2 The rural population forecast

According to the 12th Five-Year Plan of Makit County, Markit County's urbanization rate will reach 60% in 2020, so the rural population is 107 200.

2.2 Potential for consolidation Village and Town Planning

Standards (GB50188 – 93) provides that when conducting planning of existing towns and villages, land for rural settlements should be determined on the basis of per capita level and per capita residential land index level. The control standards of rural construction land index are shown in Table 2.

Table 2 The control standards of rural construction land index

The current level of per capita construction land m^2/person	Level of per capita construction land index	Adjustment allowed m^2/person
≤ 50	First, second	Should increase 5 – 20
50.1 – 60	First, second	Can increase 0 – 15
60.1 – 80	Second, third	Can increase 0 – 10
80.1 – 100	Second, third, fourth	Can increase or decrease 0 – 10
100.1 – 120	Third, fourth	Can decrease 0 – 15
120.1 – 150	Fourth, fifth	Can decrease 0 – 10
> 150	Fifth	Should be decreased to 150 or less

Note: The planning adjustment is the sum or difference between the planned per capita construction land index and current per capita construction land index.

In 2011, the area of per capita land for rural settlements in Makit County was $383.45 m^2$. According to Table 2, the area of per capita land for rural settlements in the county will be adjusted to $150 m^2$ in 2020. Substituting the current area of rural residential land, the predicted population data and per capita construction land index into expression (3)^[2], the rural settlements' potential for consolidation in Makit County in 2020 is calculated at $4741.92 hm^2$.

$$S = S_{\text{staus quo}} - S_{\text{standard}} \times Q_t \quad (3)$$

where S is rural settlements' potential for consolidation (hm^2); $S_{\text{staus quo}}$ is current land for rural settlements (hm^2); S_{standard} is per capita standard area of land for rural settlements (m^2/person); Q_t is the rural population in the target year.

3 Recommendations for rural settlements' potential for consolidation in Makit County

3.1 Rationally determining the consolidation direction of land for rural settlements

3.1.1 Rationally determining the scale of reclaimed arable land. The surface water in Makit County comes mainly from Yarkand River, with little precipitation recharge, and irrigation water is mainly groundwater. Therefore, the shortage of water resources is

a bottleneck restricting the development of agriculture; land reclamation must follow the principle of "determining land based on water", and the total arable land can not exceed the capacity of the water.

3.1.2 Ensuring the new rural construction land. The consolidation of rural settlements should primarily meet the housing needs of farmers, then ensure the land for basic public services in the rural communities, and finally ensure the land for the rural collective to develop characteristic industry.

3.1.3 Using the remaining part as land for urban development. Under the precondition of ensuring the above two types of land, the remaining part can be used for the construction of cities and towns through the operation of the market.

3.2 Deepening the reform of the land system and eliminating the obstacles to consolidation of rural settlements The existing land system as the basic form of the urban-rural dual system is the main source for the widening gap between urban and rural areas and growing inequality between urban and rural residents^[4]. Nowadays, the land system problem has become the biggest obstacle to the consolidation of rural settlements. In the process of consolidation of rural settlements, it is necessary to improve the living standards of farmers steadily to come into a well-off society with urban residents, which objectively requires the land system reform to adapt to urbanization^[1].

3.2.1 Promoting the registration of rural land and right confirmation to ensure the interests of farmers. It is necessary to complete the work of rural land registration and right confirmation as soon as possible to protect farmers' usufructuary right to the land, especially homestead, thereby laying the legal foundation for the rural homestead.

3.2.2 Establishing rural homestead reserve system. Rural homestead reserve system is used mainly for the management of the rural homestead, to encourage the farmers to transfer the surplus homestead with compensation. The transferred homestead is mainly under the village collective's self-management, and the land revenue is mainly used for the new rural construction and farmers' resettlement, by democratic decision making of the collective. In the actual operation, the rural homestead reserve center can be set up with the administrative villages or rural communities as unit, to be responsible for the recovery, consolidation, transfer lease and distribution of the collective homestead.

3.2.3 Establishing the unified land market and realizing the asset value of rural construction land. It is necessary to establish unified land market to realize the equal rights on rural land and urban land. The rural collective can sell its construction land in the market, and the construction of cities and towns can obtain the construction land index by bidding or auction. In this way, it can not only realize the asset value of homestead, but also put an end to taking low-cost urbanization road, force the cities and towns to take the road of intensive development, return the homestead re-funding to agriculture, countryside and farmers, thereby making the farmers enjoy the benefit in accordance with the law.

3.3 The state should increase financial transfer payments to backward, remote and poor areas As can be seen from Markit's fiscal revenue, the financial status of China's backward, remote and poor areas is poor, so the state should intensify efforts to increase financial transfer payments to these areas, promote the consolidation of rural settlements, and promote the interaction between new urbanization and new rural construction.

3.4 The consolidation of settlements should be combined with the ecological construction

3.4.1 The consolidation of rural settlements should be carried out in accordance with local conditions^[5] and lay emphasis on ecological priority. On the basis of respecting the the local folk customs, it is necessary to give full play to the leading role of the planning, to promote farmers' houses to concentrate in the community. The small natural villages must be merged. The newly established rural community infrastructure should reflect the effect of beautiful landscape ecology.

3.4.2 Establishing ecological compensation mechanism to achieve normalization of environmental protection. Markit County is located in the edge of the Taklimakan Desert, with fragile ecology, so in the process of consolidation of settlements, if blindly pursuing economic efficiency and ignoring ecological benefits, it is bound to make worse the already fragile ecosystems. Therefore, in the consolidation of western rural settlements, ecological construction is the focus, and it is necessary to encourage the implementation of ecology-based land consolidation; strengthen the close cooperation of departments and regions, and integrate the ecological construction funds, to establish ecological compensation mechanism^[6] and reward the rural communities with excellent achievements of ecological construction.

4 Conclusions

China's rural homestead's potential for consolidation is large. Since the 21st century, due to the constraints of the construction land index, considerable rural homesteads have flown to the city at low prices. It is unsustainable and low cost path to urbanization, harming the interests of farmers. The 18th Congress of China's Communist Party, the National People's Congress and the Chinese People's Political Consultative Conference in 2013 proposed to promote new urbanization. It is required objectively that the interests of farmers should be put in the first place, and the low cost path to urbanization should be eradicated. Therefore, it is necessary to give full play to the advantage of enormous consolidation potential of rural homestead, and use market mechanisms and other initiatives to realize the asset value of rural homestead, so that the interests return to agriculture, countryside and farmers.

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trial concentration in the park" and forms the agglomeration effect but also alleviates the contradiction of shortage in town construction land. Construction of industrial parks can settle farmers' employment around the parks to some extent and improve the living condition. With the formation of agglomeration effect, local government can collect more taxes to increase financial incomes and improve the overall economy.

2.3.4 Mode of commercial residential land. With bid invitation, link index can be used for real estate development and financial commercial land to increase local business, fully release differential rent and obtain high land transfer rent.

This mode is applicable to the region with relatively better economy and developed business and is beneficial to raising more capital for reclamation and resettlement.

2.3.5 Mode of infrastructure construction. This mode means that construction remaining index is to be used for construction of public facilities like road, water conservancy project and power grid construction to perfect local public service, strengthen the construction of rural human settlement environment, combat the conspicuous issues of village road, water supply and drainage as well as rubbish treatment, improve farmers' living and production and foster rural development.

This mode is applicable to the region urgently requiring the perfection of public service and the rapid economic development.

3 Conclusion

The research analyzes the involved three key sections in increase and decrease link of urban and rural construction land, namely construction of rural residential area, capital raising and management of link turnover index, and proposes relevant modes which can be applied to most areas and concludes different applicable regions.

Increase and decrease link of urban and rural construction land is only implemented in some testing areas, still in trial and groping. Since the obtained materials in this essay is limited and not comprehensive, there are still some deficiency in many aspects and the proposed modes may be restricted, which requires further study. Meanwhile, the proposed link modes in the essay are hoped

to be reference for the further researches and practice.

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