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# Peasant Household Oriented Land Circulation from the Perspective of State Governance

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**Abstract** Based on the state governance background of peasant household oriented land circulation, I analyzed characteristics of peasant household oriented land circulation. The characteristics mainly include uncertain definition of rural land circulation, significant off-media feature of land circulation, long-term land circulation contract, farmers' preference of peasant household oriented land circulation, and progressive path of land circulation. The essential feature is the progressive mode of land circulation. Under the existing property right, it realizes the perfect combination of modern production factors and traditional agricultural, and the combination of traditional family safeguarding function and modern social mutual growth spirit. Thus, it shows relative independence and manifests the idea of common prosperity. The opportunity cost of peasant household oriented land circulation is minimal, institutional cost will increase circulation risk, and what's more, the cost for state governance of peasant household oriented land circulation is minimal. It comes to conclusion that building proper and harmonious land circulation mechanism is responsibility of central government and favorable for healthy development of peasant household oriented land circulation.

**Key words** Peasant household oriented, Land circulation, Attribute, Governance cost, State governance

The peasant household oriented land circulation mode based on household management is deemed as a cause for idle rural land, low allocation efficiency and lagging modern agricultural development. Although peasant household oriented land circulation has many drawbacks, latest surveys show that it is still the most popular mode that has lowest circulation cost and can safeguard benefits of small peasants. Therefore, objective understanding the characteristics, attribute and performance of peasant household oriented land circulation is the foundation for maintaining harmony of rural land circulation, safeguarding farmers' benefits and guaranteeing the state stability. Firstly, I defined the peasant household oriented land circulation and put forward the basis of division of land circulation mode. Then, according to latest surveys, I summarized the latest characteristics of peasant household oriented land circulation and analyzed attribute and cost of peasant household oriented land circulation. Finally, I presented countermeasures for optimizing performance of peasant household oriented land circulation.

## 1 Proposition of the peasant household oriented land circulation mode

In large labor exporting provinces and cities, such as Sichuan Province, Anhui Province and Chongqing Municipality, due to large amounts of rural young labor forces going out to work, some even move the whole family outside. By distinctive comparison, along with rapid advancement of urbanization, many cities in China get into difficulty of low land bearing

capacity<sup>[1]</sup>.

Some scholars contribute this situation to land system that protects small peasants. Under the land system of "land usage regulation" and "separation of urban and rural areas", the function of bearing urban development is contradictory to policy of pushing forward rural reform and effectively protecting cultivated land. From the viewpoint of keeping increase in farmers' income, it is required to implement projects as soon as possible; from the perspective of maintaining people's livelihood, land requisition should respect farmers' benefit; from the angle of guaranteeing the red line, it should ensure the balance between requisition and compensation. To settle this conflict, China should restructure the existing land management system, remove the closure barrier of comprehensive land use of urban and rural construction land, and use urban and rural land in a reasonable, high-efficient and comprehensive manner. Some scholars condemn that the small peasant management is a cause of backward traditional agricultural society. They ascribe unsmooth circulation of urban and rural land to selfishness, laziness, greediness and ignorance, and impute inadequate natural endowment of peasant household oriented resource allocation and waste of resource allocation to irrational behavior of small peasants. Theodore W. Schultz fiercely criticized this opinion in his book *Transforming Traditional Agriculture*.

**1.1 Definition of the peasant household oriented land circulation mode** From the perspective of interest-related person's oriented division power and control power over the income of land circulation, we can divide the land circulation mode into three modes, namely, the government-oriented, collective-oriented and peasant household oriented land circulation<sup>[2]</sup>. Among these, the peasant household oriented land circulation is defined as the mode where rural land is circulated between farmers and agricultural enterprises in accordance with

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market mechanism or kinship relationship without direct participation of government or collective organization and without change of land use attribute. Evidently, such definition is to distinguish the relationship between government-oriented and collective-oriented land circulation mode, but it neglects analysis of intrinsic essential attribute. Therefore, the peasant household oriented land circulation mode can be defined as the land circulation mode where farmers seek maximal allocation efficiency and benefit of economic resources and insist on preferentially circulating rural land in kinship society and acquaintance society without paid participation of a third party.

**1.2 Basis for division of the peasant household oriented land circulation mode** There are four reasons for rural land circulation taking peasant households (but not farmers) as subjects of land circulation market. (i) Congenital characteristics of resources of rural land circulation. China's rural land contract system was originated from Xiaogang Village Mode in 1979. The reform of Xiaogang Village is a typical peasant household oriented land circulation mode. Compared with government and collective oriented land circulation modes, it has longer history and more original circulation gene. (ii) Multiple disciplinary characteristics of farmers, such as politics, sociology, and management science, leading to loss of feature of economics in rural land circulation. On contrary, taking peasant households as analysis subjects not only can incorporate farmers' political and sociological characteristics, but also can analyze microcosmic characteristics of allocation of family economic resources in a better way. (iii) Farmers' decision-making actions are definitely influenced by natural endowment of family organization resources and operation purpose. As individual farmer within a family, the personal natural endowment is an important factor influencing family resource allocation, but the head of a family (often the decision maker of peasant household) allocates family' economic resources with peasant household rather than individual as the allocation unit. This allocation method can maximize individual income and optimize allocation of family resource, so it can minimize survival risk of farmers' family, income risk and social risk, and take into account the individual development and income maximization. (iv) Farmer households should consider balance between family, clan and community when circulating natural resources. Besides, the head of a family should consider quantity, property and geographical features of family land; consider gender of family population, age structure and natural endowment of labor force; consider the influence of co-existence relationship with its clan and community capital on allocation of family resources. In brief, it can fully reflect economics characteristics of small peasant land circulation.

## 2 Characteristics of the peasant household oriented land circulation mode

Since the 20th century, China's urban and rural land circulation has preliminarily formed the co-existence pattern of government-oriented, collective-oriented and peasant household oriented land circulation. However, due to different economic

development level in all parts of China, peasant household oriented land circulation takes on many different forms. In economically developed regions, peasant household oriented land circulation shows higher level of marketization and socialization; while in economically underdeveloped regions, it takes on a trend of low marketization and socialization<sup>[3-4]</sup>. In Xinyang of Henan Province, we found that the land circulation spontaneously conducted by peasant households is gradually replaced by the government-oriented land circulation mode, and it has preliminarily formed the situation of coexistence of many circulation modes with local government as the leader.

### 2.1 Manifestation of the peasant household oriented land circulation mode

**2.1.1** Boundary of rural land circulation gradually becomes unclear. Peasant farmer oriented land circulation includes two phases: the first phase is before 2005, circulated land is mainly cultivated land, and rarely touches upon construction land. The second phase is after 2005, peasant farmers increase circulation of homestead at the same time of speeding up circulation of cultivated land. From the viewpoint of boundary of circulation object, three modes have clear, definite and unwritten circulation object and boundary. From the perspective of circulation object, the peasant household oriented land circulation mainly circulates natural resources that family can dispose, such as cultivated land, homestead, and forest land; the collective oriented land circulation mainly circulates natural resources directly controlled by the collective, such as reserved cultivated land for unforeseen situations, river shoal, forest land, deserted mountain, mine, lakes and pools; the land requisitioned by government is mainly land for public welfare infrastructure (road, railway and port), ecological construction (like shelter belt) and construction land for small market towns. Taking an example of Xinyang City, in the share of cultivated land circulation, peasant household oriented circulation takes up 95.1%, the collective oriented circulation accounts for 4.6%, and government oriented circulation takes up 0.3% (sourced from survey of our research team). In the collective circulation, non-cultivated land accounts for a larger portion, about 61.7%. After this, the circulation object of three modes crosses and the circulation boundary becomes unclear. In rural areas, although different modes may adopt the same circulation, as high as 87.1% adopt the peasant household oriented circulation, 10.9% choose the collective circulation, and the rest 2% select government-oriented land circulation. From the geographical space, the survey in southern Henan Province indicates that the peasant household oriented circulation expands from villages to small towns and markets, to strive for or carve up non-agricultural income of land. From the viewpoint of purpose of circulated land, the collective and government oriented land circulation takes on significant "non-agricultural" or "non-grain" characteristic, while the peasant household mode mainly engages agricultural operation.

**2.1.2** Land circulation takes on significant off-media feature. From the regional disparity in rent of land circulated by peasant household, it shows the land circulation price is great different

due to factors, such as circulation area, region and application, but most peasant households are opposed to intermediaries' participation in land circulation. In stranger society, the circulation rent is often determined on the basis of the theory of differential land rent. Generally, the rent in mountain areas and hilly regions is lower than that in plain areas. In Xinyang City of Henan Province, the land rent for superior land is 6 000 to 9 000 yuan/hm<sup>2</sup>, while inferior land is only 3 000 to 4 500 yuan/hm<sup>2</sup>. In Luohe City, the land rent for superior land is 10 500 to 15 000 yuan/hm<sup>2</sup>, some up to 18 000 yuan/hm<sup>2</sup>; while the inferior land only has rent of 4 500 to 9 000 yuan/hm<sup>2</sup>. In Puyang City, the situation is similar. It is true that the rent in peasant household oriented circulation is determined through equal negotiation, and influenced by the status of circulation subjects in market, and the difference in between is about 4 500 yuan/hm<sup>2</sup>. The land rent of peasant household oriented circulation becomes shadow price of land circulation, while the determination of rent for collective and government oriented land circulation completely relies on the pricing mode of peasant household oriented land circulation. In Luoshan County of Henan Province, for the same quality land parcel, the land rent is 4 500 yuan/hm<sup>2</sup>, 6 000 4 500 yuan/hm<sup>2</sup> and 7 500 yuan/hm<sup>2</sup> respectively for peasant household oriented, collective oriented and government oriented land circulation. In Xinyang City of Henan Province, carrier of the rent for peasant household oriented land circulation is various, but the society of acquaintances and kith and kin relationship lead to zero rent; government oriented land circulation has clear time restriction, and its rent is settled in the form of money or in kind. It indicates that the lowest circulation capital of peasant household oriented mode is originated from the difference between pricing mechanism of acquaintance society and non-acquaintance society and comes from difference of circulation intermediaries. According to our survey, many land circulation supply and demand parties (accounting for as high as 95.7%) are opposed to intermediaries' participation in land circulation. Particularly, they object to local officials and village cadres participating in land circulation.

**2.1.3** The land circulation contract shows long-term characteristic. Since most contracts of peasant household oriented land circulation are informal, some scholars think that the peasant household oriented land circulation is short, while the government oriented mode is long. Our survey in Xinyang City indicates that oral contracts of the peasant household oriented land circulation are often two years, while that of collective oriented land circulation are often 3 to 4 years, and that of government oriented land circulation are longer than 5 years. Nevertheless, considering the fact that the circulation period of peasant household oriented mode can be extended naturally, its circulation period is not necessarily shorter than that of other modes. Other small surveys in Xinyang City show that 99% of contracts for the peasant household oriented circulation are informal but can be extended naturally. In total the contract period is up to 20 years with average period of 8 years, which is much longer than that of other modes. For the period of contracts of govern-

ment oriented land circulation, 61.3% are 5 years, 35.9% are 5 to 10 years, and few are longer than 10 years.

**2.1.4** Farmers have a preference for the peasant household oriented land circulation. Rural land circulation is mainly spontaneous action of peasant households, so it is an endogenous circulation mode with agricultural land as the object; only in few villages, with promotion of village committees or township government, non-cultivated land and forest land circulation appear, thus leading to the collective oriented land circulation, but the proportion is small. The proportion of two modes indicates that the peasant household mode takes the dominant position, while the collective oriented mode is in subordinate status. The peasant household mode accounts for 98.4%, while the collective oriented mode only takes up 1.6%. For circulation of natural resources like non-cultivated land, the collective circulation takes up a larger portion (about 55.7%), but the proportion is declining. After 2009, rural land circulation subjects become more and more varied. The rural land circulation pattern with the peasant household mode as major part is broken, and circulation subjects are changing from peasant households to local government and its subordinate organizations. Previously, local government only set foot in circulation from agriculture to non-agriculture. Now, it starts to intervene in the circulation of agricultural land. Although government oriented circulation has advantages of short time and rapid efficiency, from the overall viewpoint, the peasant household oriented land circulation still takes the leading position.

**2.1.5** The circulation route is mainly progressive. Taking Xinyang City as an example, there are great changes of scale and speed of peasant household oriented land circulation both in urban and rural areas. Before 2005, the land circulation scale is small and slow in rural areas. By 2005, the rural land circulation area had reached 1.25 million mu, accounting 13.6% of the total cultivated land in Xinyang City. If calculated from the rise of Migrant Worker Tide in 1990, the average circulation rate of peasant household mode is about 0.68%. As to the circulation way, the peasant household oriented land circulation adopts "learning by doing" method. In actual practice, it has found out many ways, such as subcontracting, letting, exchanging, assignment and cultivation in turn, accounting for 66.22%, 20.85%, 4.41%, 3.77% and 0.89% separately. From the operation method of circulation object, the circulation evolves from small peasant operation to middle peasant operation and large peasant subcontracting. Under the influence of central policies, the latest circulation mainly flows towards co-operatives, cooperative shares system and shareholding system operation. As to the payment of circulation cost, the rent in kind and labor rent evolve to monetary payment. In brief, the peasant household mode gradually takes the road of super small peasant operation, small peasant, moderately middle peasant and large peasant operation.

## **2.2 Essential characteristics of the peasant household oriented land circulation mode**

**2.2.1** The peasant household oriented land circulation mode belongs to a progressive land circulation mode. It manifests op-

timal combination of individual will and pursuit of economic development, and perfect combination of free idea of market allocating resources and people's preference for freedom. Besides, this mode also reflects the government's thought of governing by doing nothing that goes against nature, carries on creative initiative of Xiaogang Village Model, and safeguards farmers' will. End demand people of the peasant household mode may be direct relatives, neighbors or enterprises, but farmers will always take the independent negotiating status in the circulation and take the dominating status in signature of circulation contract and distribution of circulation benefits.

**2.2.2** In the existing property right, the peasant household oriented land circulation realizes perfect combination of modern production factors and traditional agriculture. For this mode, it is easier to form more stable social group structure. Thus, this kind of land circulation is more continuous, stable and predictable. The peasant household oriented land circulation achieves optimal combination of environment-friendly agriculture and ecological agriculture in traditional agriculture with chemical agriculture and intensive agriculture in modern agriculture. Therefore, it can safeguard the national grain security and avoid great fluctuation of agricultural production, optimize harmonious allocation of family resources and safeguard benefits of farmers to the maximum extent<sup>[5]</sup>.

**2.2.3** The peasant household oriented land circulation realizes combination of safeguarding function of traditional clan with modern social co-existence spirit. This kind of land circulation often occurs among farmers with blood relationship, kinship or neighborhood relationship. Some only collect token rent, but tenants consciously assume part of social duties. For circulation inside large families or clans, it is easier to bring into play safeguarding and mutual-aiding functions of land to traditional society, and it reflects the idea of benefiting mankind.

**2.2.4** The peasant household oriented land circulation is relatively independent. Compared with other circulation modes, this mode can reflect farmers' equal right to allocate land resources. The right mainly includes selection right of circulation decision, distribution of circulation income, control power of circulation process, and approval right of circulation risks, so the peasant household mode features independent personality. On the contrary, the collective oriented land circulation is based on unequal right of economic entity, unclear property right and elite decision, and farmers inflicts losses in land circulation, so it is difficult to arouse farmers' enthusiasm for rural land circulation.

**2.2.5** The peasant household oriented land circulation shows the idea of common prosperity. This mode is approved and favored by peasant households because other modes may result in mixture of land with capital, power and knowledge, and finally lead to rural polarization. On the contrary, the peasant household mode adopts progressive method, which does not widen the income gap between urban and rural areas and reflects the idea of common prosperity. What's more, the priority of rural land circulation among clans carries on mutual-aid functions of traditional clan society, and optimizes social safeguarding function of land circulation.

### 3 Cost analysis of the peasant household oriented land circulation mode

Since land circulation among peasant households seldom changes nature of land utilization, both land circulation cost and transaction cost in this mode are relatively low and simple. In this mode, land is circulated among neighbors and relatives, so there is no out of order of circulation information. Since there is no participation of third party (intermediary), benefit pursuit will not break away from media. Because there is repetitive game of acquaintance society, it is able to evade transaction cost of rural land circulation. The prevalence of peasant household circulation mode is also benefited from preference of farmers for minimal risk of progressive land circulation. A basic precondition of rural land circulation is that circulation rate keeps pace with movement of rural labor forces, to evade impact of market economy, urban economy and bureaucratic economy to agriculture, rural areas and farmers, and minimize its risk. The major land circulation mode is fixed at the peasant household mode, and makes it an ideal option for small peasants safeguarding economic benefits and integration with modern economy. From the viewpoint of income of circulation cost, the peasant household oriented land circulation is different from other two modes. On the one hand, the land circulation does not have existing mode for reference, but have to turn to "learning by doing" method for help, through which peasant households can reduce or evade impact of various risks to family income, and finally minimize agricultural operating risk and maximize efficiency of family resource allocation. On the other hand, characteristics of peasant household land circulation mode manifest perfect combination of minimal circulation cost and circulation risk, and also show the maximization of circulation subjects for pursuit of circulation benefits.

Provided that there is no change of property right of rural land, the peasant household oriented land circulation can be deemed as substitution of government-oriented land circulation. The circulation costs mainly include following three points.

**3.1 Minimal opportunity cost for the peasant household oriented land circulation** The circulation cost mainly includes: costs for evading market risks, unemployment risks, and use right risks incurred before rural land circulation for evaluation these risks; learning costs for improving individual quality and moral level to ensure family's income right; direct costs for information collection, transmission, evaluation and contract signature in the course of land circulation; supervision cost and contract implementing cost for land use after land circulation. When the non-agricultural employment income fails to maintain survival cost for living in cities, the head of a family has to consider non-agricultural cost, such as for living, employment and settlement. The employment cost includes children education and training. If governments at all levels do not bear part of the non-agricultural cost, peasant households will choose the circulation mode that has minimal risk. Since these costs can be turned into risk cost of rural land circulation, peasant households must weigh these risks and costs for preventing these risks when circulating land. All these costs should be shared by

the society, communities, and government at all levels, and finally will be coordinated by central government. Otherwise, peasant households will inevitably choose the peasant household oriented land circulation.

**3.2 Institutional costs faced by peasant households for reducing land circulation risks** Peasant households must consider policy environment and organizational operation environment encountered in all sections of rural land circulation. Compared with the collective oriented and government oriented modes, the peasant household mode can help farmers evade policy and institutional risks, and reduce circulation costs with the aid of traditional good practice, particularly, reduce costs for learning unfamiliar formal systems, costs for believing in circulation media, and costs for accepting circulation operating organizations. Since other modes have more tortuous circulation sections, peasant households' benefits will lose seriously, and advantages of the peasant household oriented land circulation will become more obvious. This does not mean that the peasant household oriented land circulation mode will not cause institutional cost. To evade market risks of agricultural products, peasant households will also incur organizational costs, operational costs, and supervision costs for "peasant associations" or "cooperatives"; costs brought about by reform of property right in the course of modern agricultural development; costs for unequal competition of system due to shortage of or backward public goods such as rural traffic, communication and water conservancy; costs for making up for blocked information or lack of technologies which seriously restricts agricultural operation on a fairly large scale<sup>[6]</sup>. Since there are many policy-induced institutional costs, central government should establish more scientific rural land system.

**3.3 Minimal state governing cost of the peasant household oriented land circulation** The governing cost includes costs for training the new generation migrant workers and costs for breach of contract for supervising use of circulated rural land. Although this kind of governing cost is not unique to the peasant household oriented mode, the peasant household oriented mode still has the advantage in safeguarding basic human rights such as freedom, equality and dignity, and in bringing into play the creativity and raising the happiness index of peasant households. On the contrary, it is easier for the collective and government oriented land circulation modes to lead to benefit grouping, accumulation of internal benefit conflict (due to unclear division of property right boundary), and social instability; while the peasant household mode can evade these costs. On the one hand, peasant households will take account of combining individual utility and family benefit of family resource allocation; on the other hand, decision makers of the peasant household mode have to consider both short-term and long-term benefits of family members, and finally take the long-term maximization of family benefits as target, so as to avoid short-term acts of collective and government oriented land circulation modes, reduce governing cost of rural land circulation, and finally improve governing performance of the state.

## 4 Conclusions

(i) The prevalence of peasant household land circulation mode in rural areas is, on the one hand, contributed to its low

cost and risk, advantages brought about by its economic attribute and inborn path lock-in effect, and better safeguarding farmers' rights and benefits; on the other hand, it is due to damage of farmers' benefits by compulsory acquisition and demolition of land. Compared with the government oriented and collective oriented land circulation modes, the peasant household circulation mode shows the idea of the central government for building a harmonious land circulation system.

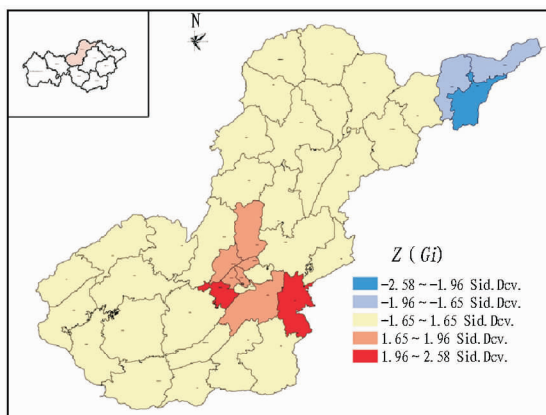
(ii) Building a harmonious land circulation mechanism is the responsibility of central government. From the perspective of state governing cost, in the society where the democracy is underdeveloped, weak groups in land circulation do not have proper channel for pursuing their benefits, central government should build the resource allocation mechanism that can overcome leading position of local government, and establish a social safeguarding mechanism that can prevent trouble before it happens. Besides, central government should provide services for training, employment, medical care, endowment insurance and unemployment insurance for land-requisitioned farmers. Furthermore, central government should govern the country with severe law during the trouble times. In a corruption prevalent society, it is required to standardize economic acts of officials in land circulation, which is favorable for reducing governing cost and economic performance of land circulation.

(iii) Establishment of an appropriate circulation safeguarding mechanism is favorable for healthy development of peasant household oriented land circulation. Since the peasant household oriented land circulation is originated from China's land contract system, which overstresses the problem of segmentation of contracted land due to fair resource allocation, it is not able to tackle this problem. Therefore, it is essential to bring into full play advantages of the peasant household oriented land circulation: on the basis of the existing peasant household contract system, and adhering to the principle of "no change of land with increase or decrease of population", the central government is organizing the third large-scale land contract in the whole country. The new contracted land combines the principles of "one household contracting one land parcel or one type of land parcel" and "distribution of little superior land but much inferior land", to encourage direct relatives to contract land in a centralized manner. At the same time, it is proposed to define right and quantify the newly contracted land to individuals, to provide favorable conditions for stable peasant household oriented land circulation<sup>[7]</sup>.

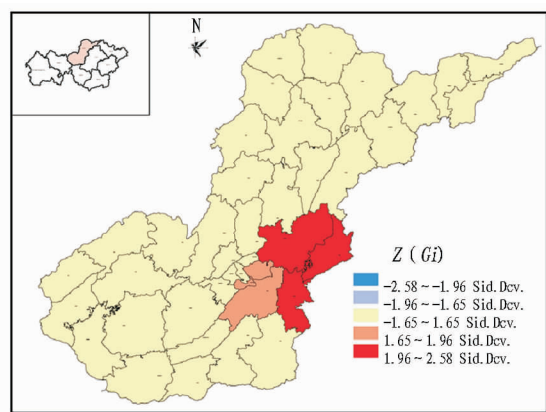
## References

- [1] HOU DW, YANG YH. The carrying capacity of land in cities approximately to limit, while idle in rural[N]. Economic Reference, 2010 - 01 - 11. (in Chinese).
- [2] YU CG. Rural land circulation way, cost and control performance analysis in China[J]. Jiangnan Tribune, 2011(6): 82 - 87. (in Chinese).
- [3] XU W, YUAN JH. Dislocation and regression of the role of collective in land transfer[J]. Asian Agricultural Research, 2011, 3(6): 55 - 59.
- [4] ZHANG CC. The major problems and the governmental role in Chinese rural land transfer[J]. Asian Agricultural Research, 2011, 3(7): 62 - 65.

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**Fig.1** The distribution of cold and hot spot areas reflected by  $Z(G_i)$  value of urban and rural construction land in 41 towns of Bijie City in the base period of planning



**Fig.2** The distribution of cold and hot spot areas reflected by  $Z(G_i)$  value of urban and rural construction land in 41 towns of Bijie City in the late period of planning

5% level.  $Z(G_i)$  value of Sanbanqiao Office and Lishu Town passes the significance test under 1% level, indicating that the total amount of urban and rural construction land in this region is high, and the land tends to be surrounded by some adjacent towns with a lot of urban and rural construction land; the central region in Bijie City is the hot spot area of urban and rural construction land,

By comparison in Fig.2, we find that  $Z(G_i)$  value of Liucangqiao Office and Yachi Town is significant at 5% level, and  $Z(G_i)$  value of Lishu Town, Xiaoba Town and Haizijie Town is significant at 1% level, indicating that under the guidance of overall land use planning, the urban and rural construction land in 41 towns of Bijie City shows greater vitality and more significant state of agglomeration over time; the cold spot areas gradually disappear, and the key point of hot spot area gradually

evolves from the central region in Bijie City to the central and eastern regions of Bijie City.

### 3 Conclusions

Based on the spatial econometrics, we use Global Moran's I index and Getis-ord  $G_i^*$  coefficient to test and process the urban and rural construction land data in Bijie City during the base period of planning and the late period of planning. We draw the distribution map of cold and hot spot areas, and conduct comparative analysis of the spatial pattern and evolution characteristics of urban and rural construction land in 41 towns of Bijie City before and after the planning.

(i) Through spatial autocorrelation test, we find that as against as the Global Moran's I index value in the base period of planning, the Global Moran's I index value in the late period of planning increases,  $P$  value decreases and the spatial autocorrelation is significantly enhanced, indicating that during the planning period, the urban and rural construction land in various towns shows increasingly strong spatial autocorrelation, and significant state of spatial agglomeration.

(ii) Using the Getis-ord  $G_i^*$  coefficient to detect the degree of local cold and hot spot areas, we find that under the guidance of overall land use planning in Bijie City, with the development of Bijie Urban Economic Zone and gradual improvement in the key state construction projects, the benefit of construction land for industrial economy and infrastructure in Bijie City will gradually play a role; the cold spot area of urban and rural construction land in northeast of Bijie City will gradually disappear, and the key point of hot spot area will be gradually transferred from the central region to the central and eastern regions; the agglomeration benefits and scale merit have become prominent, in line with the current actual situation of socio-economic development in Bijie City.

### References

- [1] QU FT, GAO YM, JIANG H. China land management policy: theory proposition and mechanism transition[J]. *Management World*, 2005 (4): 40–47. (in Chinese).
- [2] ZOU L, ZHEN H. Land use change prediction in nanning city based on markov chain model[J]. *Journal of Anhui Agricultural Sciences*, 2011(16): 10017–10018, 10024. (in Chinese).
- [3] TAN Y, XU LF. Application of DEM in land use general planning[J]. *Journal of Anhui Agricultural Sciences*, 2010(19): 10156–10157. (in Chinese).
- [4] ANSELIN LUC, DANIEL A. GRIFFITH. Do spatial effects really matter in regression analysis? [J]. *Papers of the Regional Science Association*, 1988, 65(1): 11–34.
- [5] XU QX. Dynamic change analysis of urban green land in jinan city based RS and geo-information tupu [J]. *Asian Agricultural Research*, 2011, 3(1): 90–92.
- [6] XIAO F, LIU B, JIA NF. Study on spatial structure and response of towns and villages system[J]. *Journal of Landscape Research*, 2010, 2(4): 34–37, 41.

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- [5] JAMES KAI – SING KUNG. Off-farm labor markets and the emergence of land rental markets in rural China[J]. *Journal of Comparative Economics*, 2002(3): 45–48.
- [6] ZHANG WF, MAKEHAM J. Recent developments in the market for

rural land use in China[J]. *Land Economics*, 1992, 68(2): 55–57.

- [7] YU CG. New thought rural land transition comprehensive reformation during agriculture modernization process[J]. *Agricultural Economy*, 2009(1): 356–358. (in Chinese)