

Self-organization phenomena of land governance in rural China: the induction and evaluation based on multi-cases

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Abstract: In recent years, in order to use collective land more efficiency and realize village economy and society development, some villages in China reached collective action of land governance, appearing the phenomena of self-organization. The paper aims to analyze this governance structure in the background of new countryside construction in China. The effect of capable people and principles of collective action shared by households in rural communities are the core characteristics of self-organization. The effect of capable people consists of entrepreneurial spirit and resources access capacity. The principles of collective action include governance cost sharing, allocation on demand and benefit sharing, graduated sanction and monitoring. We choose two village cases in Eastern China and a village case in Western China to show how the community members are self-organized in land affairs. In decision-making of collectively-owned land, the capable people often play an important role as rural entrepreneurs. And in distribution and utilization of rural residential land (*zhaijidi*), equitable distribution and graduation principle seem to be more important. Further, we develop a set of evaluation criteria, and make a simple evaluation on performance of self-organized structure. The paper may provide some evidence from China for achieving collective action in the field of rural land governance.

Keywords: land governance; self-organization; capable people; principles of collective action; performance evaluation

1 Introduction

The concept of self-organization has a long history and is used by various theories (e.g. complex theory) (Morçöl, 2014). This concept is also used by Ostrom in the field of common pool resource, and based on it a series of frameworks are developed to identify the collective action process which organized by the community members (Ostrom, 1990; Ostrom, 2009). From a perspective of governance structure, self-organization established on trust and collaboration could be regarded as a structure of “network” (Thompson et al, 1991), or a hybrid structure as a mixture of market and hierarchy (Williamson, 1996).

In practice, the self-organization phenomena is observed in many fields of natural resources, such as fisheries, forest resources, irrigation etc (Yandle, 2003; Pagdee et al., 2006; Sarker et al., 2014). The success of self-organization is influenced by many factors, such as group size, leadership, and social capital (Plowman et al., 2007; Plummer and FitzGibbon, 2006). Many studies argue that self-organization

based on individual cooperation is a good way to solve public goods provision and maintain social-ecological systems (Ostrom, 1990; Fleischman et al., 2014). The significant advantage of self-organization lies in that this bottom-up and decentralized structure can use local knowledge scattered in community to mitigate problem of information asymmetry (Ostrom and Gardner, 1993; Ostrom 1998).

In addition to focus on specific natural resources (e.g. fisheries, forests), there is little consideration for self-organization governance in collective land (e.g. collective construction land) owned by villagers. This is because the land in most western countries is private property, and the situation of using land collectively by several members is rare. However, in the context of China's public land property, concerning about the self-organization phenomena of land governance may be particularly urgent. With the rapid transition of social economy, the utilization of collective land especially rural residential land (*zhaijidi*) is facing great challenges in rural China. On the one hand, the utilization of collective land is inefficiency generally. Land violations (e.g. illegal land conversion, "one household, multiple rural residential lands") are prevalent. The main reason of inefficiency phenomena is that the collective rules for land governance are not formed or well operated in villages, resulting in the dilemma of collective action which Olsen called. On the other hand, with the goal of rural land governance focusing on new countryside construction, how to achieve this goal effectively through the development of self-organization has become a main question concerned by the Chinese government. Therefore, to study self-organization phenomenon of land governance has two important meanings. First, it has the practical meaning of improving governance performance of rural collective land and promoting the sustainability rural development. Second, it can provide empirical evidence of self-organization phenomenon in the field of land resources from China.

In fact, we can find the clues of self-organization phenomenon of land governance in the historical research and practical investigation of Chinese rural governance. Under the background of weak imperial power in rural traditional society, the bottom-up village autonomy by rural elites was operated through the pattern of difference sequence and rules of rite order, which achieved the goal of social stability and basic public good provision (Fei, 1992; Fei, 1980). In this traditional autonomy structure, the network of power relationship (e.g. clan force, human feelings) forms a kind of important social capital. Though it has weakened, this social capital or so called acquaintance community is still embedded in the rural areas of contemporary China, shaping the behaviors of villagers (Fei, 1992; Chen, 2011). The capable people (e.g. village cadres) play an important role in rural governance, based on the incentive

of reputation effect (He, 2003). And the existence of social groups (e.g. clan), combined with network of relationships in the village, can play a positive role in community cohesion and moral constraints (Xiao and Shi, 2002; Huang, 2004). Some evidence shows that the capable people and social capital improved public good provision and achieved good performance of rural governance (Luo et al., 2013; Tsai, 2007).

The previous studies show that China does have the historical background for the issue of self-organization. Therefore, in the field of land resources, the so-called self-organization may already appear to deal with public good provision in rural China. To this end, the research question of this paper is: (1) based on the background of new countryside construction, how does the phenomenon of self-organization of land governance appear? (2) What are the characteristics and operating rules of this self-organizing phenomenon? (3) What's the performance of this governance structure?

The following sections are organized as follows: Section 2 describes basic background, realistic motivation for the appearance of self-organization phenomenon in land governance. In section 3, we generalize core mechanism and effects of this governance structure, based on three village cases involve implementation of new countryside construction in China. This section shows the effect of capable people and the principle of collection action in self-organized process. Section 4 simply evaluates the performance of land self-organization, using a set of evaluation criteria adapted from Ostrom et al.(1993). Section 5 is discussion and conclusion.

2 new countryside construction and self-organization

To shorten the gap between urban and rural areas, the new countryside construction advocated by the state has become the theme of sustainable development in rural areas. The goal of the new countryside construction is to improve the income and living conditions of households and create a suitable human settlement, which is closely related to the land governance (e.g. village reconstruction). However, in the different periods of the new countryside construction, according to the degree of state intervention, the self-organization of land governance can be divided into two types.

2.1 Land self-organization without strong intervention

After the reform of rural land system (household responsibility system) in 1980s, the collectivization production function of village was collapse, and the majority of villages returned to the original situation of small-scale peasant economy. Although this reform solved subsistence problem in rural China by providing the incentive of

individual farmers, it seemed unable to solve the problem of rural development and prosperity. Except the village with natural endowments (e.g. villages close to urban area or located in coastal area), the social and economic development of a number of villages is slow, and even poverty villages appears. The one opportunity to change the status quo of village is to make an overall plan for the collective-owned land. It refers to implement village reconstruction and carry out agriculture scale management by land transfer. However, the reallocation and reorganization of collective land is a kind of collective action. When the villagers have strong willingness of cooperation, the motivation to initiate the new countryside construction by self-organization may occur.

On the other hand, in the case of government failure, the inefficient utilization of rural construction land is an indisputable fact. The violation and inefficient use of rural residential land is pervasive, resulting the continuously increase of rural construction land. Under the situation of lack supervision from governments, every villager has the opportunistic behaviors to increase own rural residential land and the construction land of the whole village become large, resulting in the tragedy of commons. To avoid negative effects of extensive utilization, some villages with cooperative willingness will self-organize to manage distribution and utilization of rural residential land.

In short, for common belief in land governance, the village members will have strong willingness to take collective action, which provides the primitive motivation for the emergence of self-organization.

2.2 Land self-organization in the project system

In the context of the new countryside construction, the departments of central government will assign relevant project funds respectively, based on the responsibility of specific department. The phenomena of project funds become popular in 2000s. Taking Ministry of Land and Resources as an example, the land department will assign land project (e.g. Project of the Linkage between Urban land Taking and Rural Land Giving, *chengxiang jianshe yongdi zengjian guagou xiangmu*) with special funds based on the operation platform of land comprehensive consolidation. The land comprehensive consolidation refers to a systematic engineering by consolidating farmland, bodies of water, roads, forestland and village according to land use general plans. The main goals of land comprehensive consolidation are related to theme of new countryside construction, including (1)improve the rural conditions for agricultural production, farmers' living, and environmental protection, (2) accelerate the scale management of agriculture, economic concentration of residential areas, and

agglomeration of industries, and (3) push the integrated development between rural and urban areas (Tan and Zhou, 2015).

Although the projects assigned by different departments have special purposes and users. For the county government, these special affairs are just the part of local public construction, which means it cannot be separated simply. On the contrary, special projects assigned through the administrative allocation and local competition will be integrated, coordinated and bundled into a comprehensive project by the county government, in the light of local conditions. The process of this project package not only meets the special objectives of the higher authorities, but also achieves development strategy of local government. Based on the incentive of project package, the central and local governments formed a governance structure called the project system (Qu, 2012).

However, the local government has the organization problem in implementation of the packaged projects. Considering the fact that departments at county level are unable to carry out personally, the packaged projects should be organized and implemented by the lowest level of government- township government. But after the tax reform, governance capacity of the township government become weak and the power of the county government is strengthened, resulting in the consequences of “floating” government (Zhou, 2006b). In other words, township government has no incentive and capacity to organize implementation of projects.

Due to the absence of township government, the project organized by villages has become an inevitable trend. To the villages, organize the implementation of these projects could achieve the intentions of village construction and land governance (Zhe and Chen, 2011). Because of unprecedented opportunity for the village brought by projects, villages are willing to undertake the task of project implementation initiatively. And the county government prefers to assign the packaged projects to these villages with certain characteristics such as rich experience of project implementation, strong ability of organizational mobilization. In this way, village’s initiative behaviors of project implementation in the project system, providing the external conditions for land self-organization.

3 Capable people, collective action and self-organization: case induction of governing collective land

3.1 Case background and methodology

In new countryside construction, taking village reconstruction, overcoming

poverty or land consolidation as their goals, the villages gradually developed a self-organization of land governance which adapted traditional rural society. In self-organization, the capable people play an important role in decision-making and organization mobilization. And the principles of collective action which affect the behavior of members are the key success factors of self-organization governance. In order to generalize the main characteristics of self-organization phenomenon of land governance in China, we select three village cases. The three cases are Bayi Village which involves rural residential land (*zhaijidi*) governance in Zhejiang Province, Zihu village which involves village reconstruction in Fujian Province, Lianglukou village which involves economic recovery and land consolidation in Guizhou Province.

We choose these three cases, for several reasons as follows: first, the cases spread in different part of China, which can reduce the influence of economic and social development to experience induction. Second, the cases occurred in different period, showing different self-organization without and within project system. Third, the self-organization in cases involves key affairs of land governance, which is very typical. The data of cases was collected in the period of 2014-2016 through interviews to the village cadres by authors. The sketch of three cases is as follows.

Case B (Bayi village): in the beginning of reform and opening up, Bayi village located in the suburb was eager to use the collective land to make villagers rich. Under the leadership of the group of capable people led by Yu (village secretary of the Party, *cunzhishu*), the village committee made an adventurous decision on collective land. They persuaded villagers to concentrate the collective land together and the land resource was ran by village committee to set up enterprises uniformly. After the rapid development, the villagers had a strong demand to build new rural houses. In order to maintain harmonious residential environment, the group of capable people began to think the governance issue of rural residential land (*zhijidi*). In the absence of supervision from local government, the village made a rigorous village plan and established rules of rural residential land use initiatively, regulating issues of application qualification, the use of authority, disposal of old house, building standards. Unlike other villages, illegal use of rural residential land such as area excess and “one household, multiple housing lands” was seldom appeared in Bayi village. And most of rural residential land has been recognized by the government in the latest round of land registration and certification.

Case Z (Zihu village): Zihu village has 39 households and more than 200 villagers. Because of backward economy, this small village was listed in one of 36 underdeveloped villages at county level. Before reconstruction in 2007, the village only had less than 30 old houses with one-storey, the condition of “a house more than

households” was common. The living conditions and surrounding environment was very poor. In order to improve the poor situation, under the guidance of the local government policy, the villagers made a unanimous decision on village reconstruction through cooperation with local enterprise. In other words, they would transfer some collective construction land to gain reconstruction funds from enterprise. And the villagers would use the remaining collective construction land to build a new rural settlement including 37 new house and collective-owned property. The village demolition and reconstruction action program was democratically discussed by the whole villagers and the specific implementation was responsible by preparatory group of village committee. By 2010, the villagers have moved into new community.

Case L (Lianglukou village): located in remote area, Lianglukou village has eight villagers group, a total of 919 households 3563 people, which is a typical agriculture-based village in western China. As a provincial poverty village in the past, the per capita net income of villagers was less than 600 *yuan* in 2003 and collective economy was once in the brink of collapse. Led by Tang (village secretary of the Party, *cunzhishu*), the village initiated land governance for economic recovery. On the one hand, the village actively applied project funds from different government departments to take land consolidation, involving ecomigration and resettle villagers to new concentrated settlements. With the support of funds, one-third of villagers had agreed to participate in this relocation plan. On the other hand, with the help of technical assistance from a research institution, Tang with other 7 village cadres spearheaded to start a business, calling on farmland transfer and s agricultural scale operation. Through demonstration effect, the villagers began to join a number of agricultural cooperatives set up by the collective economic organization. And with the introduction of modern agriculture, Lianglukou village is out of poverty gradually.

3.2 The effect of capable people

3.2.1 Capable people in Chinese context

In the power structure of village, capable people are distinguished from ordinary villagers. Compared with ordinary villagers, capable people are in the core of power structure and have more voice in land governance. The capable people are the villagers who have special qualities and outstanding abilities, are interested in organizing and leading the collective action of land governance actively. For a village, the capable people can lead the villagers to transform status quo of village land use. According role classification by Wang (1994) and Luo et al (2013), the role of capable people played in land governance can be divided into political role, social role and economic role.

(1) Political role. With the state strengthening the control of rural village, the village cadres as the state's agent have been at the bottom of the whole state system. Within the state system, the village cadres can make use of their position and political identity. Through close relation with government and administrative control power, the village cadres could affect the process and result of land governance. (2) Social role. Some villagers who have certain prestige and social reputation in village can play a social role of capable people. For example, village cadres retired from state system or the clan elders beyond state system. They can rely on their social status and networks of relationships (*guanxi*) to coordinate the process of self-organization. (3) Economic role. In the rapid rural development, some villagers (e.g. individual business households, farmer-entrepreneurs) show their inherent market knowledge and acquire impressive wealth. They are good at catching market information, and have good economic conditions, hoping to use their economic knowledge to operate collective land and make villagers rich.

The capable people may only play a role. However, in most cases they will play multiple roles. For example, in case B, Yu held the position of village secretary of the Party since 1984, playing a political role. After retire, he stays in the group of capable people to make suggestion on village development, transferring himself from political role to social role. In Case L, the village leader Tang played dual roles of political and economic. As village secretary of the Party, he wants to promote village construction and public infrastructure supply by government policy and various projects. Meanwhile, in the face of poverty, he has to play an economic role in organizing villagers to develop village economy. He owns basic economic knowledge such as ecological agriculture and large-scale land operation beyond most ordinary villagers. Under different roles, the capable people will use associated resources to promote village decision-making on land affairs, thereby shaping the initiation, maintaining and development of self-organization.

3.2.2 The entrepreneurial spirit of capable people

In rural China, the human capital of most ordinary villagers is not enough. In other words, ordinary villagers can't think out a good idea on how to governing their collective land to promote development of village economy. On the contrary, the capable people have rich experience and background, which determines their obvious advantages in knowledge accumulation and human capital. The capable people in case B and case L are typical examples. In case B, the soldier and teaching experience made Yu receive more external information and ideas than ordinary villagers who living in village for long-term. According to his experience, he had a unique view on

how to use collective land efficiently, which is taking back land which was distributed to each villager and implementing unified development by village committee. In case L, based on some information of agricultural development got by his relational network, Tang put forward the idea of land transfer to develop ecological agriculture. The capable people are willing to lead the decision-making of village land development and take the responsibility of potential risk. The leadership and adventurous spirit reflecting in the capable people is accord with a kind of entrepreneurial spirit.

The entrepreneurial spirit of capable people is based on their sensitivity to market and political environment. In the faith of revealing land value, they have the courage to initiate practice and innovation of self-organization. In the process of economic recovery, after many field visits, Tang was keenly aware that the idea of ecological and organic would become the future direction of modern agriculture. Considering village's high quality water and soil resources fit with this idea, he brought in a project of "rice fish symbiotic" boldly. In case B, under the background of Household contract system, the group of capable people headed by Yu had a keen sense of the market economy. The group made a consensus that the livelihood and prosperity of the whole village must rely on industrial economy developed on their collective land. In order to provide land for industry, Yu proposed that took back farmland which distributed to each household and unified managed by village committee in 1987. The land collected from households was mainly used for the establishment of collective enterprises (the property turned into private later). The enterprises paid 45000 yuan/ ha per year to the village committee for land use. The payment would be distributed to households as compensation for land collection. This practice of land collection for industry was illegal actually at that time (the procedure of farmland conversion was completed later) and had certain political risk. However, it took place as an adventurous innovation by capable people.

The entrepreneurial spirit forms a kind of demonstration effect in organization mobilization, which can further receiving recognition from the villagers. In case L, the project of "rice fish symbiotic" failed to attract the whole villagers at the beginning. The attitude of most villagers was hesitated and doubtful. Nevertheless, 7 village cadres headed by Tang loaned 700000 yuan from bank and initiated this project. Fortunately, the project was succeed and obtained a net profit of 600,000 in the first year. Therefore, Tang made a decision on land transfer, calling on development of ecological agriculture on the large-scale land. Given the demonstration brought by previous project, the village committee worked on households from economic perspective and made mobilization process relatively

smooth. The households who participated in land transfer and joined the agricultural cooperatives were increased year by year. In 2015, the scale of land transfer reached 250 ha. , involving more than 760 households. As we see, the entrepreneurial spirit owned by capable people plays an important role in the early stages of self-organization of land governance. Under the motivation of social reputation, they often operate villages as a collective enterprise. Certainly, the entrepreneurial spirit is still regulated by villager autonomy system. The plan governing land put forward by capable people must be approved through the democratic mechanism can be the village decision shared by the whole villagers.

3.2.3 The resources access capacity of capable people

In self-organization of land governance, the capable people possess the ability of acquiring additional resources through interaction with external organizations (e.g. local governments). The effect of this ability is that external resources can help villages to speed up their strategy which were not implemented yet for capital shortage. In case Z, the capable people headed by village chief obtained enterprise funds through investment attraction, negotiation and communication. This external resource from enterprises made a great contribution to village reconstruction eventually.

In the project system, the access capacity of project resources is particularly pronounced. In the absence of township government role, the initiative behavior of the capable people plays a key role in competition for packaged projects. As agents of the state, the capable people within the state system have rich political resources. It means they can use bureaucratic networks and operational relations to get more governmental information and make projects they applied approve more easily. The village in case L was able to get so many project funds, a very important reason is: as the village party secretary, Tang is often responsible for the reception of inspection from government departments at higher levels. Besides, as a mode of village cadre, he is often invited to give a speech to government officials at county, prefecture level and even at the provincial level. Through this experience, he establishes networks and well relations with governments, making him get application information of different kinds of projects. Besides, as a “model village”, the project applications submitted by Tang are easier to be approved.

To carry out packaged projects applied from various departments, the villages not only achieve multi-sectoral objectives, but also realize their own goals of village development. While governing land for village development, Self-organized villages often face a shortage of funds. The funds from various projects, to a certain extent,

solve the problem of fund raising in self-organization. In case L, in addition to land consolidation project (31.5 million yuan) from provincial land department, the village got special funds from other departments (see table 1). In project checking process, the different departments are satisfied with the scale effect of funds combination which improves the performance of every project (Tan and Zhou, 2014). More importantly, by the project resources, the strategy of village in case L to improve public infrastructure and living conditions of the villagers was implemented. In practice, the resources access capacity solves the problem of fund raising in self-organization of land governance for individual villages. However, from the national macro level, it will exacerbate the Matthew effect of project distribution among villages.

Table 1 The list of Projects funds from different departments in case L

Department	Project
Land resource department	Project of rural construction land consolidation
Financial department	Project of “one discussion for one case”
Hydraulic department	Project of reservoir reinforcement
Environmental protection department	Project of waste treatment
Transport department	Project of rural road widening

Source: own survey data.

3.3 The principles of collective action

In the process of land self-organization, village reconstruction mainly including rural residential land distribution and construction management is an important public affair. For governing cost, benefit distribution and credible commitment issues in this kind of land self-organization activity, the following three important principles of collective action are formed by village committee with whole villagers.

3.3.1 Governance cost sharing

The village reconstruction involves demolition and reconstruction, the renewal of the public service facilities (e.g. the widening of the road) on the basis of the reallocation of rural construction land. Considering public welfare, it can be regarded as a kind of public good with huge investment. To achieve this collective action, the village has taken the principle of governance cost sharing. In other words, after the self-organization boundary of village reconstruction is clearly defined, the cost required in land governance will be shared among the organization members. This principle means no one can be a free rider if the villager participates in village

reconstruction.

The cost sharing is reflected at two levels. First, the funds acquired from the outside and collective-owned funds spent on village reconstruction constitute an important part of capital investment. Second, in addition to external resources and collective-owned funds, individual investment from every member is necessary. In other words, every member must contribute their own wealth to make up the gap of fund raising. In case Z, the public funds pool for village reconstruction mainly included three parts: (1) 14 million yuan invested from two enterprises by the trade of collective land, (2) subsidy and project funds (e.g. project of beautiful countryside) about 1 million yuan from local government, (3) self-payment 2 million yuan from 37 households (60,000 yuan per household). The logic of cost sharing is that the external resources whether enterprise investment or government funds are collective for members of self-organization. The investment of external resources means the cost burden is shared by every member. Since the external resources are shared, the remaining gap of the total cost should also be shared by every member.

The investment resources are arranged and coordinated by self-organization, which can bring integration effect. There are two main reasons. First, the costs of specific affairs (e.g. village planning, land surveying) will be lower if it is organized collectively. Second, self-organization has stronger bargaining power in purchasing service in the market, reducing the average cost of procurement. In case Z, through overall consideration, the raised funds basically covered the cost of reconstruction (e.g. housing demolition, planning and design, housing and public infrastructure construction), achieved expected goal.

3.3.2 Allocation on demand and benefit sharing

The benefit distribution involved in land self-organization mainly refers to the allocation of newly-added rural residential land (*zhaijidi*). The rural residential land is kind of resource unit with high competitive feature. Meanwhile, considering every village member has the right to apply rural residential land, it also has the feature of low exclusivity.

To allocate equitably, the first thing is to define the distribution boundary of self-organization clearly. That is to say, define who has the right to access, getting the allocation qualification of newly-added rural residential land. The principle of allocation on demand is adopted by self-organization. This means the village can apply and obtain qualification as long as there is a reasonable demand for rural residential land. Under the policy of “one residential land for one household”, the households with this demand are generally limited to households with no residential

land, households with family splitting (e.g. marriage and new family establishment) and the households who return their original rural residential land, excluding households who have owned one residential land. Based on every member has the equal right to get basic housing security, the self-organization must give priority to satisfy the households with reasonable demand. Of course, the definition of household is very important when this principle adopted. In case Z, 37 households returned the original rural residential land and automatically obtained the qualification to new rural residential land, which conformed to principle of allocation on demand.

But in practice, for mobilization need, in addition to the principle of allocation on demand, additional access rule will be made by self-organization. In case B, According to the tradition for years, the following three cases can also be eligible for new rural residential land allocation: (1) the urban residents who used to be village members want to live in village. (2) A family has more than one daughter but no son can apply one rural residential land for one specified married daughter. (3) A man gets married and lives in another village but his household registration is still in the village. It is observed that self-organization acknowledged their allocation claims as long as these persons have been associated with the village in the past. This special rule reflects the tradition of “the person who has seen it has one part (*jian zhe you fen*)” under the condition of loose and vague village boundary.

After defined boundary of allocation clearly, the distribution among qualified members follows the principle of benefit sharing. This principle reflects in two aspects. First, in size of rural residential land, it is distributed equally by population or household as a basic unit. In case Z and case B, the distribution of rural residential land is both distributed by households. The size of rural residential land was regulated according to the legal standard and actual situation of the village. Specifically, in case Z, 37 new rural houses with occupied area of 120 square meters and construction area of 300 square meters were distributed among 37 households. And in case B, the size of every rural residential land shared by qualified members is 130 square meters with building height not exceed 11.45meters. Second, considering spatial attribute, the resource of rural residential land is unable to be fully distributed according to the quantity. In other words, the distribution should consider the factor of location. Therefore, the principle reflects in distribution way of equal opportunity, such as “draw lots”. For example, in case Z, the households chose the location of their own house by an open draw. Actually, the way of “draw lots” is accord with the tradition of equitable distribution of public goods in rural China. This benefit sharing is recognized and accepted by households, which is conducive to strengthen the unity and trust within self-organization.

3.3.3 Graduated sanction and monitoring

The governance rules made by self-organization will face the issue of credible commitment in implementation phase. When a member discovers that the net income by breaking rules is higher than the net income by following rules, he is likely to adopt a strategy of breaking rules. In order to prevent this opportunistic behavior, self-organization must develop appropriate rules of supervision and sanction to constrain behavior of members (Ostrom, 1990). In land self-organization, the graduated principle of punishment and monitoring which similar with the design principles of Ostrom, plays a role in maintaining the robust operation of land governance.

First of all, graduated sanctions refer to the villagers who violate the land use rules will assess graduated sanctions from internal self-organization or external governments. In case B, the sanction way of a guarantee deposit was adopted for rural residential land management by the village committee. Specifically, the villagers who obtain rural residential land must sign a contract of house-building with the village committee and pay the guarantee deposit of 20000 yuan. When first floor of new house was built completely and occupied area was checked by the village committee, the half deposit of 10,000 yuan would be returned first. When the whole house was built completely and the height of house was checked according to village planning standard, the remaining deposit of 10000 yuan would be returned finally. However, if the occupied area of house exceeded 1 square meter or the height of house exceeded 10 centimeter, the deposit would be confiscated by the village committee as sanctions for breaking rules. The practice of deposit is an economic mean to restrain the behaviors of villagers. When the sanctions of deposit failed, the self-organization can request government to remove the illegal parts of house forcibly through administrative means. Graduated sanctions (deposit and demolition depending on the seriousness and apology attitude) from self-organization or government will effectively prevent villagers from violating village planning in housing construction.

Second, the graduated principle also reflects in monitoring of villager behaviors for rural residential land use. In case B, the monitoring system includes three levels. In setting out of rural house, the group of engineering supervision belongs to the village committee will go to the spot to check the implementation result (at least three times). In the end of every year, the village committee will publicize the basic information of housing construction and rule violation, responding the question from whole villagers. The second level is monitoring from village grids. The village was divided into four grids by the village committee, each containing two or three districts.

Every grid establishes a monitoring group, aiming to monitor the household behaviors in their jurisdiction. The last level is mutual monitoring among households. Considering that no one can violate the rules of rural residential land use and not be discovered, graduated monitoring maintains the operation of self-organization.

4 The performance evaluation of self-organization in land governance

4.1 A set of evaluation criteria

To evaluate the implementation performance of China's land self-organization phenomenon, it is necessary to establish a set of evaluation criteria. The purpose of land governance is to promote the sustainable use of rural collective land. Therefore, for any institutional arrangements, the various objectives for sustainable use should be taken into account. Drawing on the ideas of Ostrom et al.(1993), this paper establishes the evaluation criteria combined overall performance with indirect performance.

The evaluation criteria of overall performance list as follows:

1. Land allocation efficiency. It refers to result of land resources allocation in village after land governance. If the operation of land governance is effective, then the allocation of land will reach the efficiency of Pareto optimum.

2. Funds balance. The understanding of funds balance lies in the resource input and expenditure spent for land governance. If the funds cover the governing cost basically, then the funds of this governance is balanced with low financial risk.

3. Benefit distribution. It is important to discuss benefit distribution in land the governance. Equitable distribution and degree of satisfaction from stakeholders should be considered.

When we regard land governance as a transaction, in addition to transformation cost, we also consider the coordination, information, and strategic costs which involved in this transaction. These costs should be considered in evaluating governance structure as main variables. Therefore, the evaluation criteria of indirect performance could be divided into transformation costs and transaction costs (Ostrom et al., 1993). The definition of various costs is described as follows.

Transformation costs: it refers to the price of inputting necessary resources to transform output of production. This cost is also called production costs. In the transaction of land governance for new countryside construction, the transformation costs mainly include three parts: (1) the cost of transforming villagers' preference of land use into land governance plan. (2) The operational cost of resource raising. (3)

The cost of realizing collective land redevelopment through resources factor inputs (land, labor and capital). For example, the cost of design and construction for houses, the cost of design, construction and maintaining for public infrastructure.

Transaction costs are divided into three categories:

1. Coordination costs. It refers to the sum of time, capital and labor costs which spend on interests balance among stakeholders, monitoring and implementation of the land governance plan

2. Information costs. It refers to cost for searching information and cost of decision-making mistakes caused by Lack of specific information (e.g. temporal and spatial information, general scientific knowledge inland governance).

3. Strategy costs. Individuals share benefits from others' investment by asymmetric information or attributes (e.g. low-exclusive) of public goods, resulting in increase of transformation costs. In the land governance, the common strategy costs are free ride, rent-seeking/corruption and opportunistic behaviors.

4.2 Performance evaluation based on case study

The evaluation criteria of overall performance and indirect performance described above could be used for evaluating self-organization phenomena of land governance in China. Based on three cases mentioned before, we will analyze remarkable results and deficiencies of this governance structure according to specific criteria.

Considering the homogeneity of villagers in traditional rural China (Dong, 1996), the villagers have common preference of governing collective land. This means the cost of transforming a unanimous land governance plan by self-organization is low. Meanwhile, self-organization has advantages on economic scale effect when it involves infrastructure construction, housing design and construction in land governance. Therefore, we assume that the transformation costs for self-organization in land governance will be low and focus on the effect of transaction cost economizing.

The coordination costs we expected are low. Because of the decentralized structure in self-organization, the views of every member can be fully discussed, reducing the possible disputes and conflicts in implementation process. What's more, the participation initiative of villagers and acceptance of decision made by the capable people, also resulting in significant reduction in coordination costs. In case B, the villagers knew each other and had deep trust in the group of capable people. They not only accepted the decision of land collection for industrial development, but also agreed with the control practice of rural residential land use by village planning. The

result showed that conflict was seldom occurred in implementation process. Similarly in case Z, the reconstruction details were discussed in depth and every household presented their views in Villagers' congress. Through such coordination effort, villagers were mobilized and accepted the mode of village-enterprise cooperation for village reconstruction smoothly. It took 3 months for old houses demolition and land compensation and took more than a year for new houses construction. On the whole, the time cost for implementation is low.

In terms of information costs, we expect that the cost of accessing to temporal and spatial information is low, but the cost of acquiring general scientific knowledge is high for self-organization. This is because the villagers who live in village are familiar with the (natural economic and social) attributes of village. The capable people as well as other villagers have the advantages of local knowledge and know how to optimize land allocation according to local conditions. For example, in case L, based on local knowledge of soil and water conditions in the village, the capable people knew the exact information of matching every piece of agricultural land with corresponding agricultural crops. For the decision-making of eco-agriculture and land transfer, the cost of decision-making mistakes would be low. However, because of professional characteristics, villagers with low education level are lack of some scientific information related to land governance (e.g. village planning, the construction of modern housing, the operation of modern agriculture). Although this information may be acquired through purchase or external assistance (e.g. ecological agriculture technique in case L), the cost is relatively high.

For strategy costs, we expect that the free-rider behavior will be excluded in land self-organization, based on the principle of cost sharing. We find in case Z, the households who accessed to boundary of rural residual land distribution are required to invest their personal resources, which avoided the free-rider behavior effectively. However, due to the lack of monitoring to the capable people, they may seek rents and capture the benefits from land governance. Under the principle of graduated sanction and monitoring, we expect the opportunistic behaviors (e.g. rule violation) will be controlled in land self-organization. In case B, there was almost no case of rule violation in rural residential land use, and the village planning was abided by the whole villagers.

Finally, according to criteria of overall performance, the operation performance of land self-organization is good. First, the efficiency of land use has been improved. It can reflect on the results of the three cases. The village in case L realized rapid development of modern agriculture by land transfer. The village in case B self-organized land collection for industry and rural residential land management,

achieving the goal of better producing and living conditions. The village in case Z implemented village reconstruction through village-enterprise cooperation, creating village revival (e.g. improved living conditions) and intensive land-use. Second, the funds balance is challenged in self-organization. In the past, without the help of external resources, only the rich villages have no funds pressure to carry out village reconstruction. This is the main reason why self-organization of land governance is not common in rural China. With the project system, individual poor villages can realize the objectives of village development by land governance, relying on the capable people's ability to access external resources. However, considering the unequal distribution and unsustainability of projects funds, most ordinary villages still face the problem of fund raising. In terms of benefits distribution, it is distributed fairly within self-organization based on the principle of benefit sharing, which is showed in the cases. According to the above analysis, we simply summarize the performance of land self-organization in Table 2.

Table 2 The performance of land self-organization in rural China*

Evaluation items	Self-organization of land governance
criteria of indirect performance	
1.Transformation costs	L
2.Transaction costs	
2.1Coordination costs	L
2.2Information costs	
2.2.1temporal and spatial information	L
2.2.2general scientific information	H
2.3Strategy costs	
2.3.1free ride	L
2.3.2rent-seeking/corruption	M
2.3.3opportunistic behaviors	L
criteria of overall performance	
1.Land allocation efficiency	1
2.Funds balance	2
3.Benefit distribution	1

* L: low M: middle H:high

1: good 2: semi-good 3: bad

Source: author adapted from Ostrom et al. (1993)

5 Discussion and conclusion

Under the realistic background of the development imbalance between urban and rural areas, a number of China's villages are still struggling for prosperity and socio-economic development by better utilization of collective land. We find that, in exploration and attempt of some villages, the self-organization phenomena of land governance emerged. This phenomenon refers to the collective action of land affairs (e.g. village reconstruction) organized by villagers with the initiative of capable people, aiming to improve the performance of land use in the village. In the process of self-organization, the capable people in the village play an important role in the organizational mobilization and resource mobilization, which solves the problem of initial operation of self-organization. While the principles of collective action mainly used for village reconstruction regularize households' behaviors and maintain the operational efficiency of self-organization.

By case induction, we find that the characteristics of land self-organization are as follows:

(1) The entrepreneurial spirit of capable people. This feature is a reflection of the economic role of capable people. It can promote the organizational mobilization and plays a key role in maintaining the initial development of self-organization.

(2) The resources access capacity of capable people. This feature is mainly related to the political role of capable people. It alleviates the problem of resource raising in the process of self-organization, which is particularly evident in the era of project system.

(3) The principle of cost sharing. The resources investment required for self-organization is shared by villagers who participated in. This principle will exclude the behaviors of free ride and improve the utilization efficiency of integrated resources.

(4) The principle of allocation on demand and benefit sharing. Under the policy of "one residential land for one household", the principle of on-demand allocation defines the access boundary for distribution of the newly-added rural residential land, which prevents some villagers from gaining additional benefits. And the benefit sharing (equal distribution of quantity and location) on the basis of on-demand allocation guarantees fairness distribution among qualified villagers.

(5) The principle of graduated sanction and monitoring. In solving the credible commitment problem, self-organization follows the graduated principle. In other words, carry out graduated sanctions depending on the degree of rule violation, and establish multi-level monitoring system.

We evaluate the performance of land self-organization by a set of evaluation criteria. Through the overall performance evaluation, we find that the self-organization basically improves the efficiency of land allocation, achieves goal of village development. It also shows good performance in terms of benefit distribution. The pressure of funds balance can't be ignored, but it can be mitigated by resources access capacity of capable people. From the indirect criteria, the economizing effect of transaction costs is obvious, including low coordination costs, low costs of temporal and spatial information, low strategy costs of free rides and opportunistic behaviors. But the costs of general scientific information and rent-seeking/corruption are not satisfied. The evaluation result doesn't represent the performance of land self-organization is good, but it can be explained like follows: for this governance structure, there are advantages in some aspects and some shortages in other aspects (e.g. scientific information access, the funds balance).

In addition, it is noteworthy that, with the strengthening of resources investment in rural areas, a series of projects (e.g. project of beautiful countryside) will be packaged by local government and then assign to villages with enthusiasm. While relying on this external resources linkage to the project system, the collective action of self-organization may be variant. When the original self-organization is embedded into the state campaign of the project system, in order to implement the intentions of “dismantling villages and setting up urban communities (*che cun jian ju*)” and “concentration of rural residential areas (*ji zhong ju zhu*)”, the principles of collective action may be eroded and threatened. What' more, the corruption of capable people in applying projects, the “Farmers live upstairs by force (*nongming bei shanglou*)” and other negative issues, against the original intention of self-organization, which will affect the unity of organization, and thus threaten the maintenance of self-organization. Therefore, how to deal with the dilemma of land self-organization in the context of the project system will be more important in the future.

On the whole, this paper identifies the governance characteristics of land self-organization in rural China and evaluates its performance in governing sustainable land use. However, we must admit there are some limitations in the article. First, the possible governance characteristics are not fully recognized in the paper. For example, the role of human relationship and social capital is not discussed. Second, the characteristics derived from three cases can only be regarded as propositions, rather than verified conclusions. In addition, the evidence to support performance of self-organization is not strong and convinced. To make up these shortcomings, more evidence and cases are needed in further study.

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