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RECEIVED 14 June 2023

ACCEPTED 14 July 2023

PUBLISHED 27 July 2023

CITATION

Laiyou Z and Jiawei L (2023) Dilemmas and theoretical exploration of China's rural land property rights system reform.
Front. Sustain. Food Syst. 7:1238241.
doi: 10.3389/fsufs.2023.1238241

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Dilemmas and theoretical exploration of China's rural land property rights system reform

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Introduction: The property rights system, as the core component of the land system, is related to the long-term stability of the country, the well-being of farmers and the realization of the value of ecological products. The reform of China's rural land property rights system has long been controversial. This paper compares the main historical lines of the reform of the rural land property rights system since the founding of New China, notes its dilemmas, and theoretically explores its development.

Methods: This article adopted literature analysis method(LAT), Sorted out the historical mainline of rural land property rights system reform since the establishment of the People's Republic of China, proposed its reform path.

Results: The paper finds that the two main difficulties of the reform are the weakening of collective property rights, leading to the disintegration of rural public services, and the refinement of farmers' property rights, leading to an increase in agricultural operation costs. These issues lead to extremely high transaction costs in the process of agricultural production and operation, making agricultural production a worthless business activity.

Discussion: This paper argues that a complete market structure is a "unified" market structure that includes the government and the market, in which the government plays the role of defining property rights and reducing transaction costs.

KEYWORDS

rural land property rights system, reform, dilemma, theoretical exploration, China

1. Introduction

The value realization of ecological products is an issue of high interest in current academic research. It is believed that most ecological products are public goods, and their noncompetitive and nonexclusive nature can easily lead to "free-rider" behavior, resulting in the failure of market mechanisms (Gao et al., 2020) and the creation of very large hidden values that cannot be realized through transactions. The solution is to define the property rights of ecological products and then use the market system to trade and realize their values. Taking land resources as an example, after the reform and opening up, the household benefited from the implementation of the household joint production contract responsibility system and again became an independent property accounting unit, creating the second golden age in the history of China's agricultural development and leading grain production to rapidly increase (Zhao and Song, 2022). This world-renowned achievement is regarded and promoted as a classic case of the privatization of property rights in

TABLE 1 Changes in the rural land system (1949–1962).

Period	Ownership subjects	Subject of the right to use
The early years of New China	Privately owned by farmers	Privately owned by farmers
Primary cooperatives	Privately owned by farmers	Collective membership in primary cooperatives
Senior cooperatives	The working masses collectively share in the common resources	Collective membership in senior cooperatives
People's commune	Commune – brigade – production team three-level ownership	Commune – brigade – production team three-level collective

The history and logic of land system change in contemporary China (Cai and Li, 2021).

neoliberal economics. Subsequent reforms of rural land property rights have been carried out in the direction of weakening the collective and strengthening the individual, and there are even voices in academia that “deflate collective ownership” (Zhang and Cheng, 2012). However, the registration of rural land ownership, represented by “quasi privatization,” which began in 2013, has not achieved the expected results, and the phenomenon of the abandonment of many arable land resources has led to widespread stagnation of the transfer of agricultural land and the sluggish growth of long-term investment in agricultural land (Liu and Luo, 2018; Luo and Hong, 2020). This result suggests that we have likely misunderstood the success of the household contract responsibility system and that overemphasizing private property rights at the expense of the role of public property rights has unintended consequences. As the main resource in rural areas, land resources carry most of the supply of ecological products. Is the privatization of land property rights the best way to optimize the allocation of land resources? Does the “property rights definition-economic incentives” framework of mainstream economics require preconditions? This paper will answer these questions. The research in this article helps deepen the academic community’s understanding of the reform of the rural land property rights system in China and thereby provides a useful perspective supporting further research on the property rights system.

2. The real dilemma of rural land property rights system reform

2.1. The weakening of collective property rights leads to the disintegration of rural public services

After the founding of New China, many things were waiting to be done. Although farmers who had experienced land reform owned land, they still faced many limitations, such as fragmented production and operation, low technology level, and lack of production tools. To further demonstrate fairness and achieve common prosperity, the rural cooperative movement was promoted in 1953, and policy documents, such as the Resolution on Mutual Cooperation in Agricultural Production, the Model Charter for Agricultural Production Cooperatives, the Model Charter for Advanced Agricultural Production Cooperatives, and the Resolution on the

Establishment of People’s Communes in Rural Areas, were issued one after another (Yan et al., 2021). The development of agriculture and rural areas was gradually incorporated into the national economic development plan, eventually resulting in the land system of “one big, two publics” and “one fair, two transfers” (Bu, 2010; Yan et al., 2021). Then, in the 1960s, land became owned by the commune, brigade, and production team, basically forming a “three-tier ownership, team-based” rural land system (see Table 1). During this process, the public goods and services provided under the planned economic system met the basic needs of agricultural production and rural residents. Taking public infrastructure as an example, through a system using “government financial subsidies as a supplement, rural collective organizations as the main source of funding, and peasants’ labor accumulation (work points) as an input of manpower” (Xu, 2002), many farmland irrigation and water conservancy facilities and rural roads were built, and agricultural production service institutions were established, greatly improving the backward state of rural infrastructure and strengthening the rural economy. During this period, rural collectives played a major role in solving the problem of inadequate public services faced by rural areas in general.

Nonetheless, policies in this period severely inhibited the incentive of individual production. Data show that in 1956, China’s *per capita* grain production was 307 kg, basically reaching the caloric safety line. However, by 1974, the *per capita* grain production in China was still 317 kg, and it almost stagnated over 18 years,¹ showing the weak supply of land ecological products in this period. This led to widespread criticism in public opinion. The problem was blamed on the collective ownership system of the planned economy era, and the implementation of the household joint production contract responsibility system and the gradual disintegration and demise of the people’s commune system were promoted. The public infrastructure built during the collective ownership period was revitalized, and agricultural production that had long been languishing saw a jump in growth, with grain production increasing from 300 million tons in 1978 to 400 million tons in 1984, an average annual growth of nearly 6% (Zhao and Song, 2022). Figure 1 shows the explosive growth in both total and *per capita* grain production in the initial period of reform and opening up.

The dramatic improvement in agricultural performance drew much attention from the public opinion community, and people began to reflect on why the ambitious collectivization transformation had failed (Liu, 2019). One explanation is that under the system of collective labor, the inadequate supervision and incomplete measurement of labor by production teams over their members led to insufficient incentives for laborers’ efforts, resulting in lazy laborers and consequently low agricultural production performance (Lu, 1992). Later, academics further explored the reasons for the inadequate supervision of production teams over their members and the laziness of their members, arguing that the property rights characteristics of the collective system deprived production teams and the members of their residual claims and failed to provide effective incentives for these teams and their members (Chen, 1994; Zhou, 1995).

1 How the Chinese got enough to eat – A history of food production in New China – History – szhgh.com.

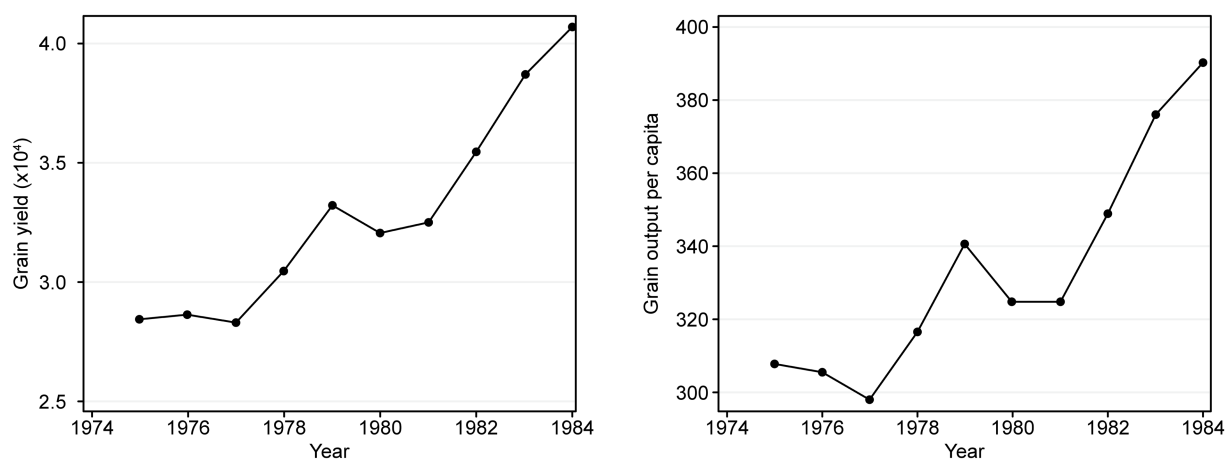


FIGURE 1

Graph of total grain production and *per capita* grain production, 1975–1984. The author developed these graphs based on the China statistical yearbook.

Logically, the reform of the household contract responsibility system has become a topic of high interest in academia. By constructing an econometric model, Lin Yifu calculated that the contribution of the reform of the household contract responsibility system to agricultural growth was 46.89% during 1978–1984 (Lin, 1992). Other scholars decomposed several institutional reforms and related policy adjustments carried out during the same period and concluded that the contribution of the household contract responsibility system to agricultural growth was 78%. However, some scholars have questioned this result, arguing that the contribution of the household contract responsibility system has been exaggerated. After deducting the contribution of technological advances in agricultural production and price reforms, the contribution of the household contract responsibility system to agricultural growth was found to be only approximately 30% (Huang and Rozelle, 1996). In any case, however, the great success of the household contract responsibility system is the consensus that has developed in public opinion. For example, Xu (2008) believes that the household contract responsibility system has the characteristics of “bottom-up” system construction, diversity in specific arrangements, flexibility, fuzziness and flexibility in the actual operation process, and fairness over efficiency.

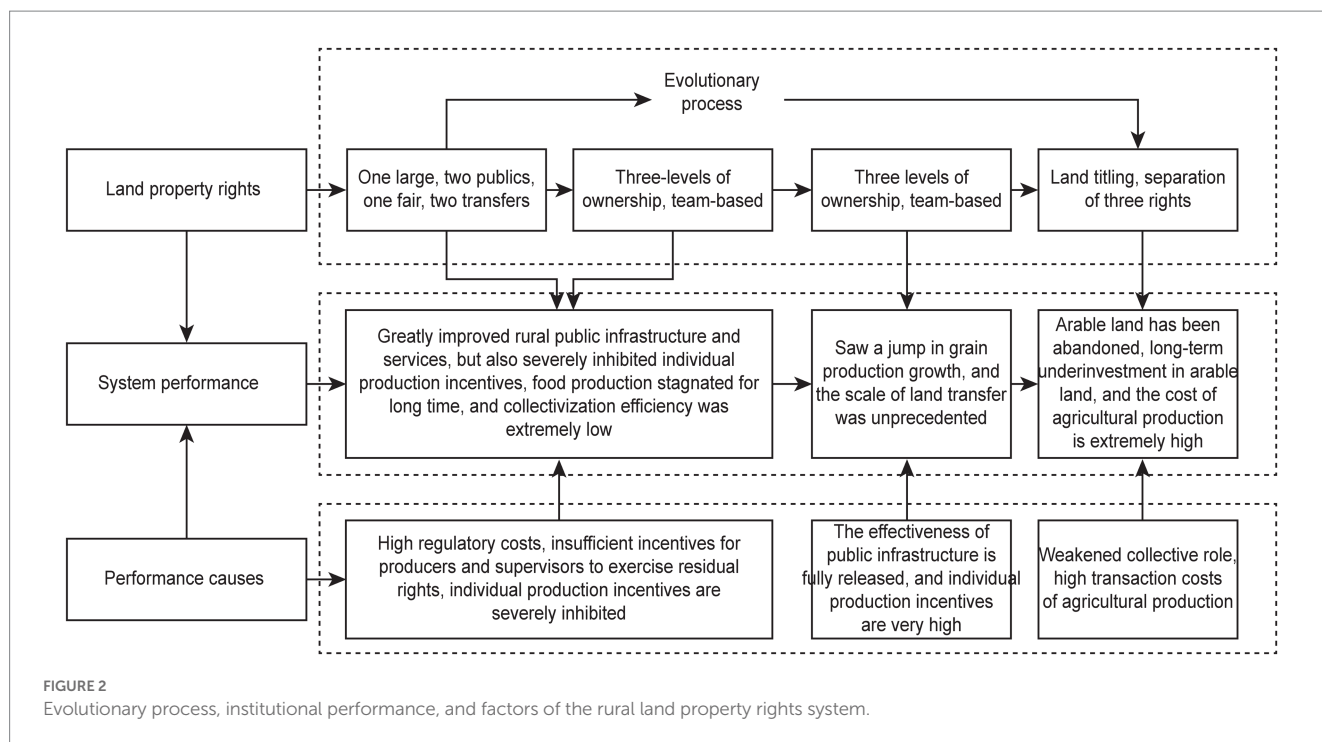
For this reason, subsequent reforms of the land system have followed the direction of weakening the collective and strengthening the individual. National policies have also reflected this direction of reform, with the land contract period extending from 15 years in 1984 to 30 years after the expiration of the first round of contracts. The Third Plenary Session of the 17th Central Committee in 2008 proposed that the contract should remain unchanged for a long time, and then the 19th National Congress proposed that the second round of contracts should be extended for another 30 years after the expiration of the contract while maintaining the longevity of the contract (Chen, 2019). The land ownership registration system, which was promoted and implemented in 2013, further strengthens individual property rights and is considered by scholars to represent a process of land privatization (Luo and Hong, 2020). In the process, the collective economy was gradually dismantled. Before 2006, public services in rural areas were mainly maintained by collecting “three withdrawals and five integrations” from villagers; after the agricultural tax was abolished, the “three withdrawals and five integrations” were also abolished, and the contractual relationship

between arable land owners and the state that had been implied for thousands of years disappeared (Zhao and Song, 2022). This means that an owner of arable land no longer has an obligation to the state to cultivate the land and can abandon it at will without punishment. The abolition of the “three mentions and five integrations” has resulted in the loss of funding sources for rural public infrastructure (public services) and the rapid disintegration of public services. After the depreciation of productive public goods, such as the original farm infrastructure, the cost of agricultural production increased rapidly and became an economic activity without any commercial value.

To strengthen grassroots construction and expand the collective economy, the state has started to adopt the policy of “industry feeding agriculture and cities supporting rural areas,” and various places have explored ways to pay for public services in rural areas. For example, the “One Project One Discussion” financial award system has provided a source of funding for the provision of public goods in rural areas, but the inconsistency between the providers and beneficiaries of public goods has led to the failure of many places to break through the collective action dilemma in the provision of public goods at the village level (Li and Liu, 2016; Shi et al., 2021). This makes it unlikely that the organizational coordination of village collectives will be abandoned in favor of relying purely on villagers’ autonomous consultation for decisions on the provision of public goods. Such a system would entail very large transaction costs, resulting in so-called “market failures.” Many areas have been unable to provide public goods for agricultural production for many years due to failed negotiation and have been “resting on their laurels,” with water conservancy facilities in disrepair and narrow field ridges impassable for agricultural machinery. The cost of agricultural production remains high. The evolutionary process, institutional performance, and causes of the rural land property rights system after the founding of New China are shown in Figure 2.

2.2. The refinement of farmers’ property rights leads to an increase in agricultural operation costs

Mainstream economics argues that attributing property rights to households or individuals can effectively incentivize their



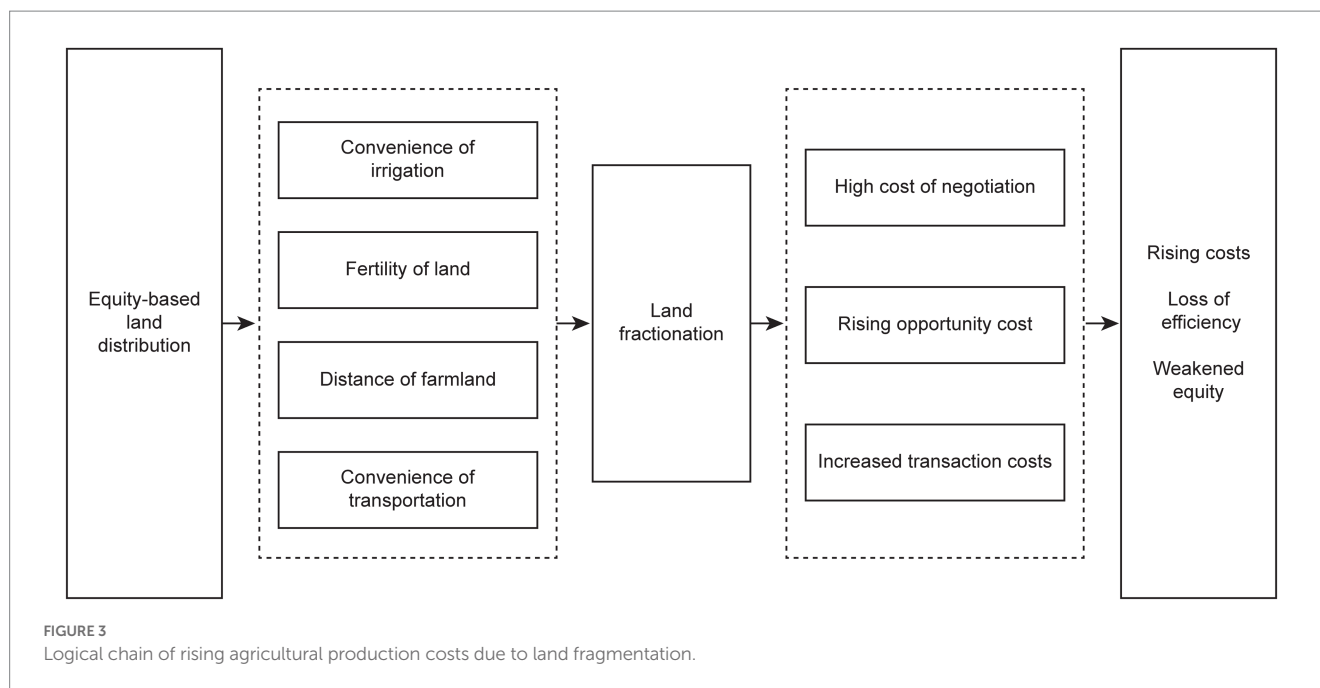
behavior and improve economic performance. The reform of China's rural land system follows this logic, and public opinion posits that rural problems can be solved only if the collective ownership system is thoroughly reformed and microentities are given sufficient incentives. As a result, the reform of China's "three rural policies" has been oriented toward the devolution of power and profit to farmers and the strengthening of the family contract responsibility system. Tax relief, the extension of the land contract period, land titling, and a greater role for the market are all included in the reform of the system.

In the early 1980s, when the land was divided among households, the village collective divided the land into several classes according to the abovementioned production conditions because of the large differences in the convenience of irrigation, fertility, distance, and convenience of transportation. As a result, the land is divided into several classes, and each class of land is divided equally among households, making the land occupied by farmers highly fragmented and dispersed (Wang, 2016). Especially in the southern hilly areas, due to the topography, the land is more fragmented, and households typically have less than ten mu scattered in eight or nine places. For example, a survey found that the average household land area in Shayang County, Hubei Province, is 7.7 mu, and the average number of land blocks per household is 8.7, with an average of 0.88 mu each; the same is true for Wucun, which is in the plain area of Inner Mongolia, where the average arable land *per capita* is 4.5 mu and the average household has seven arable plots (Lian et al., 2014; Wang, 2016).

The negative impact of land fragmentation in terms of agricultural production is self-evident (see Figure 3). Earlier studies found that land fragmentation caused numerous inconveniences to agricultural production, adversely affecting agricultural output, public infrastructure development, mechanized planting and harvesting, and the allocation of farm labor use (Wan and Cheng, 1996; Xu et al., 2008). The more severe the fragmentation of land is, the more severe

the abandonment of arable land (Long et al., 2022). A study of Wucun in Inner Mongolia found that fragmented land property rights resulted in high costs of collective negotiation in the investment process of irrigation systems to the extent that land quality was difficult to improve; the additional protection and supervision costs incurred by farmers due to fragmented land property rights made farmers' use of land property rights less efficient; moreover, the fragmented land property rights increased farmers' information costs and caused difficulties in planting decisions for some farmers (Lian et al., 2014). A recent theoretical study shows that the uncertainty, immobility and other characteristics of fragmented land make farmers face transaction costs such as measurement costs and concerted action costs, thus increasing the cost of agricultural production and operation (Wang and Hu, 2018). The theoretical logic explaining the increase in agricultural operation costs due to land fragmentation is that land fragmentation increases the cost of collective negotiation, and the high transaction costs lead to the failure of collective action. However, these negative impacts of land fragmentation in China emerged during the period of rapid economic development after the reform and opening up and were not present at the beginning of the implementation of land distribution among households.

According to this logic, the reform of the "three rural policies" should focus on strengthening the role of the village collectives in coordinating and thus reducing transaction costs. However, the opposite is observed. First, the Circular of the CPC Central Committee on Rural Work in 1984, which was issued in 1984, clearly stated that farmers should have a contract period of at least 15 years for land, and the principle of "big stability and small adjustment" was established for land adjustment. In 1993, the Central Government issued a document entitled "Several Policy Measures for Current Agricultural and Rural Economic Development," stipulating that the original land contracting rights could be extended for another 30 years after the expiration of the contract and advocating the method of "increasing people without



increasing land and decreasing people without decreasing land” during the contract period, further solidifying the land contracting rights. Article 27 of the Rural Land Contract Law of 2002 stipulates that the contracting party shall not adjust the contracted land during the contracting period. Furthermore, the 2009 Central Government Document No. 1 stipulated that the existing land contracting relationship should be stabilized and remain unchanged for a long time. Until 2013, the nationwide comprehensive promotion of rural land contracting rights registration and issuance of certificates was carried out, and the specific location, area, and ownership of the land contracted by farmers were registered on the certificates by confirming the rights and issuing certificates. By now, the property rights of farmers’ land have become clear. The evolution and changes of these policies are all in the direction of strengthening individual property rights. However, these clear and secure property rights have not effectively promoted the transfer of farmland but have rather led to increasing farmland abandonment (Luo et al., 2017); they have not encouraged long-term investment in farmland but have rather led farmers to increasingly use chemical fertilizers, etc. (Li et al., 2019); they have not effectively attracted migrant workers to return to their hometowns to start businesses but have rather experienced the loss of young and strong rural labor, resulting in the decay of rural areas. The policy of clear and secure property rights to individuals has not brought the expected effects, and the results have deviated from the original policy design.

3. Theoretical exploration of rural land property rights system reform

Fortunately, policymakers have taken note of the disappointing effects of the three rural policies in recent years, and from policymakers to academics, they have begun to pay attention to the role of village collective organizations. Recently, the central government has revisited the strengthening of the collective economy. In 2018, the Organization Department of the Central Committee of

the CPC and three other departments jointly issued the Circular on Adhering to and Strengthening the Leadership of Rural Grassroots Party Organizations to Support and Grow the Village Collective Economy. In June 2019, the Ministry of Agriculture and Rural Affairs issued the Circular of the Ministry of Agriculture and Rural Affairs on Further Improving the Development of Villages with Weak Collective Economy in Poverty-stricken Areas. These circulars propose increasing policy support to develop and grow the collective economy. At the time of the centennial of the CPC founding, academics reflected on China’s land system, especially the rural collective land system. In contrast to the previous overwhelming support for land privatization, there are currently more scholars supporting the strengthening of collective ownership. However, due to the lack of theoretical support, the discussion of strengthening collective ownership is still confined to traditional economics and cannot break away from the traditional paradigm of economic analysis. For example, some studies use concepts such as heavy assets and light assets² to distinguish between the behavioral categories of collectives and farmers. However, the concept of a heavy asset and a light asset is itself very vague.

The logical starting point of traditional economics is individual rationality, leading to a series of economic theories that start from individual behavior. Traditional economics assumes that clear and secure property rights can effectively create incentives for market players to improve economic performance. However, this paradigm incorrectly assumes that the fixed costs of numerous market players are zero and that the government, providing public goods and services, is an exogenous variable. This paradigm does not explain many economic realities and does not even answer the question “why does government exist,” leading some economics schools to advocate “anarchism.” In fact, a complete market structure should consist of a public sector that provides collective heavy assets and a private sector that produces

² Similar to the concept of fixed cost and variable cost.

private goods, without either of which the market structure is incomplete. Such market structures are ubiquitous in real life, such as transportation markets consisting of roads (public) and cars (individual). Thus, it seems that the analytical paradigm that treats government and the market as an antagonistic relationship has long been outdated. However, the relationship between the government and the market is not the focus of this paper and will be left aside for now.

In a complete market structure, the role of the government is self-evident. On the one hand, to define property rights and ensure that they are clear and stable to meet the prerequisites of market transactions, it is necessary to make laws and regulations and establish a set of authorities to maintain the normal operation of the market economy. On the other hand, the government has the role of doing what the market wants to do but cannot do because of high transaction costs, as in the aforementioned transportation market—individuals do not build a road because they bought a car. Based on this, this paper introduces the concept of transaction costs and explores how the role of village collectives can reduce the transaction costs of rural land markets, promote the realization of the value of ecological products, and thus develop and grow the collective economy.

The concept of transaction costs was first introduced by Coase in 1937 in his article “The Nature of the Firm,” in which he responded to the question “Why are there firms?” His answer was that there are costs associated with the use of markets to organize production, and these are transaction costs (Coase, 1937). This means that under certain constraints, the costs of using the market to organize production (transaction costs) are too high, and the firm is used as a form of organization for production. The enterprise organizes production internally, relying on the instructions of the general manager rather than on negotiations; eliminating the transaction costs of the market transaction process, such as negotiation, coordination, and contracting; and allowing production to be carried out at a low cost. At this point, the firm as an organization is analogous to the embryonic form of government, relying on administrative orders or plans (rather than market transactions) to direct the various departments involved in production.

Specifically, in the field of agricultural production, in addition to paying for individual agricultural production costs, farmers need to pay for costs attributed to public infrastructure, such as water or irrigation works, roads, water, and electricity. Obviously, the cost of such public infrastructure is extremely high, and thus, it is unaffordable for small farmers and is the greatest obstacle to the development of the rural economy. The construction, operation, and maintenance of such public infrastructure are obviously difficult to achieve through market transactions and are things that the market wants to do but cannot do, given the extremely high transaction costs. In this case, the role of the government or village collectives should be played, and these public infrastructures should be provided by the government or village collectives (see Figure 4).

The specific method of operation is as follows: by referencing the urban land transfer system, the rural collective land is assigned to national ownership, and the central government, as the representative of the people in the nation, holds ownership of the collective land for them. The central government can entrust local governments (county, township, and village governments, cooperatives, etc.) to hold the ownership of collective land for the people, and the farmers can no longer obtain farmland without compensation but can either rent it from the local government or rent (or sell) the farmland they now

own to the local government or other members of the village collective. The income from the lease or sale of arable land by the local government is used to provide public infrastructure services (e.g., roads, water conservancy projects, water, and electricity facilities) for arable land. Farmers can contract farmland for a long or short period or even for one harvest period. Local governments are responsible for continuously improving and upgrading public infrastructure and services so that the value of cultivating the land in the region is increased and farmers inside or outside the region are continuously attracted to cultivate the land in the region.

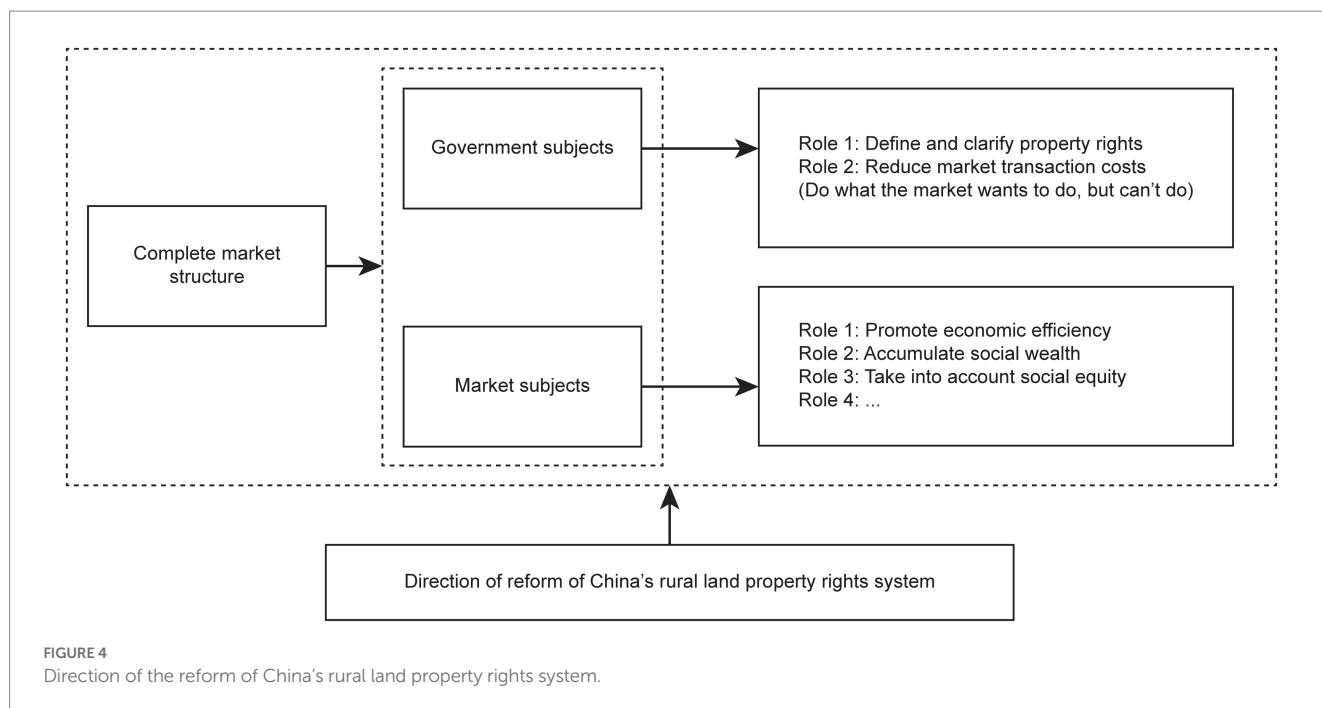
One of the current problems that needs to be solved is how to give a proper name to the capital going to the countryside. The current system stipulates that the assets of village collective housing bases and farmland can be transferred only among the members of the village collective. This prevents the optimal allocation of village collective assets and the transfer of assets to the economic agents with optimal efficiency. The solution lies in building a unified market between urban and rural areas and promoting the free flow of production factors between urban and rural areas.

4. Discussion

Based on the perspective of ecological product value realization, this paper sorts out the real dilemma of ecological product value realization of land resources and concludes that the weakening of collective property rights leading to the disintegration of rural public services and the refinement of farmers' property rights leading to the rise of agricultural operation costs are the two main reasons for the dilemma of ecological product value realization of rural land resources. These two reasons show that agricultural production has become a worthless business activity due to the rising cost of land production and operation and high transaction costs. Then, the article constructs an analytical paradigm based on the concept of transaction costs and argues that the government and the market together form a “unified” market structure, in which the government plays an active role in defining property rights and reducing transaction costs. Finally, the paper proposes a method to realize the value of ecological products of land resources.

Before the reform and opening up, China's planned economic system brought the national economy to the brink of collapse, and after the reform and opening up, the contracting of production to households led to a spectacular increase in grain production. The theoretical and logical paradigm constructed by traditional economics has been empirically validated in rural China and thus has encouraged the academic community to criticize the rural collective ownership system and advocate the market economy system. However, the system of rural land rights registration and certification, represented by privatization, has not brought the expected results, and the widespread phenomenon of extensive abandonment of arable land in rural areas, long-term underinvestment in arable land, and slowing of agricultural land transfer shows that stable and clear property rights need antecedent conditions to produce effective incentives for market agents.

A very important precondition is the need for a complete market structure. Traditional economics, which takes rationality as a logical starting point, focuses on the behavior of microindividuals and regards the government, which provides public goods and services and plays a role in reducing transaction costs, as an exogenous variable, and the relationship between the two is antagonistic. In fact,



this paper finds that a complete market structure should include not only independent individuals but also the government, which provides public goods and services to independent individuals and reduces the transaction costs incurred in transactions among them. This market structure is “unified” rather than a “dichotomy,” similar to the relationship between the “stage” and “actors.” “The “stage” is similar to the public goods or services provided by the government, while the “actors” are the independent individuals who conduct market transactions. Therefore, what the market cannot accomplish is left to the government; what the government cannot do well is left to the market. Only by combining the government and the market can we maximize the efficiency of resource allocation.

According to this logical paradigm, the direction of the future reform of the rural land system can be clearly noted. The future reform of the rural property rights system is neither a complete privatization, leaving small farmers to face the ever-changing market alone, nor a return to a planned economy, depriving small farmers of their economic autonomy. Rather, it is to reduce the transaction costs of rural economic development, to bring into play the role of local governments and village collectives, to provide the public infrastructure and services needed for agricultural production, to enable each farmer to carry out agricultural production at low cost and to make agricultural production an economically valuable business activity. The problems currently encountered cannot be solved by simple titling and licensing. If that were the case, would not the world be a very simple place? In fact, some developed economies in East Asia have smallholder economies, such as Japan, South Korea, and Taiwan, and their smallholder economies have survived and are doing well because they have collective organizations, such as the Farmers Association, that provide smallholder farmers with complete public goods and services and reduce the very large transaction costs faced by smallholder production. This success is not due to the private ownership of land.

China's basic state of a large population and a small land area, which is still in the primary stage of socialism, determines that China

cannot simply apply the theoretical paradigm of traditional Western economics for economic development, as this is full of errors due to the lack of consideration of “transaction costs.” Many economic theories derived from rationality have their own conditions of applicability. Ignoring the conditions of applicability of theories can mislead economic decisions, and the effect of policies is likely to be greatly reduced. For the future reform of rural land, the system should be carefully considered and acted upon in a way that is closely related to China's basic national conditions.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

ZL had the original idea and wrote the manuscript. All authors contributed to the article and approved the submitted version.

Funding

This work was supported by the Jiangxi Provincial Department of Education Science and Technology Project (No.: GJJ2202223).

Conflict of interest

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