

Multi-Dimensional Costs and Dual Benefits: Value-Realization Mechanisms and Optimization Strategies for the Transfer of Land Development Rights

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Abstract: As China's urbanization shifts from incremental expansion to stock-quality improvement, the transfer of land development rights (TDR) has received renewed recognition as a spatial policy tool for optimizing territorial development efficiency and promoting the integration of urban and rural factors. Yet its transaction scale and effectiveness have consistently fallen short of the ideal scenario. Drawing on new institutional economics, this paper examines the cost-benefit constraints embedded in TDR institutions. It argues that the core bottleneck is how to improve the exchange benefits and use benefits of land use while reducing information-matching costs, negotiation and decision-making costs, and supervision and enforcement costs in land transactions. Moving beyond the "market trap" and "social overdraft" found in Western and Chinese practices, the analysis of the "enclave pooling" project in Dayun Town, Jiaxing, shows that multi-actor resource pooling and shareholding cooperation, together with government-coordinated asset-based dividends and targeted land allocation, can effectively dissolve multi-dimensional transaction costs, improve the dual benefits of land, and realize the plural value of TDR. From a cost-benefit perspective, the paper then discusses optimization strategies for TDR mechanisms, providing theoretical and practical references for high-quality territorial spatial development.

Keywords: transfer of land development rights; new institutional economics; cost-benefit; enclave pooling; Dayun Town, Jiashan County

Spatial planning, as the foundation for the allocation of various factors, is often regarded as an ideal tool for solving market failure. However, ostensibly reasonable planning interventions frequently fail to match real demands precisely. Planning is always confronted with an "impossible triangle" in which high capitalization, stable ordering, and full democratization cannot all be simultaneously optimized [1]. A public-choice stance oriented toward rebalancing, and the shaping of sound interactions among government, market, and society, have therefore increasingly become the value orientation of current planning management [2]. The concept of land development rights and their transfer emerged from this context. As an important instrument for exploring spatially balanced development and implementing planning control, it has become a key issue in spatial planning and governance [3-4]. Under private land ownership, landowners may develop land according to their own needs; development rights are endogenous to ownership, and the issue of transfer does not arise. Yet disorderly market behavior during rapid urbanization has caused serious public crises, requiring correction through public power. Planning zoning control reduces the negative externalities of free land development, but it also pushes land in different locations into a "windfall-wipeout" dilemma,¹ in which expected values vary dramatically, and cannot completely prevent rent-seeking from eroding social interests [5-6]. Accordingly, land development rights - the rights to change land use and development intensity - have gradually been separated from ownership in an attempt to bridge the limits of market mechanisms and government control and improve the efficiency of territorial development [7].

Although China has a vast territory, its per capita land resources are limited, and the compressed process of urbanization has further amplified human-land tensions [8]. Since the late twentieth century, Chinese cities have expanded rapidly while rural areas have generally been associated with shrinkage, producing problems similar to those experienced by developed countries during urbanization, such as farmland loss and disorderly development. Through construction-land plan management, farmland requisition-compensation

balance, basic farmland protection, and other institutions, China has gradually framed the total amount and spatial pattern of future incremental construction land in different regions. Although these institutions do not explicitly refer to land development rights, the substantive content of such rights exists when considered together with policies controlling spatial use and intensity, including major function-oriented zoning, the “three zones and three lines,” and the micro-level “one site selection opinion and two permits” system [9-11]. In practice, it is mainly manifested in urban-rural TDR represented by the “increase-decrease linkage” system² [12]. Unlike Western countries, China’s TDR practice relies more heavily on public-power guidance under the domestic institutional conditions of public land ownership and a strong government, and has provided important spatial support for farmland protection, optimized land use, and regional coordinated development over several decades [13].

Research on TDR has evolved with socioeconomic change. To serve the booming demand for land during rapid urbanization, early studies focused on conceptual clarification and international experience [14], land expropriation and transfer [15], and mechanism analysis and impact testing of typical experiments such as the Zhejiang model and Chongqing land tickets [16-17]. Since spatial planning reform, the coordination mechanism and policy design linking development rights and the planning system have become hot topics [18], providing theoretical support for adjusting urban-rural spatial allocation based on TDR [9]. In recent years, scholars have increasingly recognized the challenges that the stock-development era poses to the effectiveness of TDR, and deeper institutional constraints such as unfair distribution of value-added returns and blocked implementation transmission have received growing attention [19-21].

This paper therefore uses new institutional economics to understand the multi-dimensional costs and dual benefits involved in real-world TDR. Through an analysis of the operation mechanism and effects of the “enclave pooling” project in Dayun Town, Jiashan County, it proposes optimization strategies for TDR mechanisms from a cost-benefit perspective, with the aim of providing analytical and practical references for orderly TDR and high-quality territorial spatial development.

1 The New Institutional Economics Connotation of TDR

1.1 Ideal state: TDR from the perspective of neoclassical economics

By discussing marginal utility and equilibrium price, economists replaced the God’s-eye labor theory of value with an individual-based theory of utility demand and established the micro-analytical paradigm of neoclassical economics. This provided theoretical support for the emergence of TDR mechanisms. Under this paradigm, land development rights may be regarded as scarce factor products whose total amount is relatively constant. Property-right owners and purchasers can trade directionally according to their respective needs. Because rational individuals fully consider the marginal utility brought by land development rights, large-scale and iterative individual decisions will intervene in mandatory land control through a dynamic and elastic market mechanism and continuously optimize the spatial allocation of development rights. As shown in Figure 1(a), assuming land self-use and planning control, the total supply of developable urban land has a constant upper limit (curve S_0). After TDR is introduced, differences in land-use efficiency among actors and locations shift the effective supply of land (to curve S_0' , still with an upper limit). Because the elasticity of the land supply curve is smaller than that of the land demand curve, the overall benefit of land use under the new equilibrium price E_0' is greater than in the original supply-demand pattern, i.e., area RO' is larger than RO .

1.2 The real world: TDR from the perspective of new institutional economics

The ideal model in which micro markets intervene in planning control to optimize land allocation constitutes the common expectation for TDR institutions. Yet institutional designs that are economically rational in theory have not achieved the expected results in practice [22]. This means that a long-standing but neglected variable prevents the mechanism from being widely used from the bottom up. That variable is transaction

cost. To discuss it, we must use the theoretical perspective of new institutional economics. Since the 1960s, with the decline of development economics, economic research shifted from “what should be done” back to “why,” stimulating extensive research on transaction costs, property rights, and related topics, and laying the foundation for an institutional-analysis paradigm in new institutional economics [23]. The most representative scholar is Coase [24]. His theoretical contribution is summarized in the well-known Coase theorem, whose most familiar proposition is that when transaction costs are zero, the initial allocation of rights does not affect final allocation, because transactions will always maximize social surplus. Such stringent conditions are rarely met in the real world. Once transaction costs are introduced, different initial property-right determinations and institutional designs produce different allocation efficiencies. This is the second proposition of the Coase theorem. New institutional economics shows that the “invisible hand” has preconditions: only when transaction benefits exceed transaction costs can the market mechanism allocate resources effectively, and the reason for establishing institutions is to reduce transaction costs [25-26].

From this perspective, because land and its surface attachments are highly immobile, land transactions are costly and scarce and cannot achieve optimal spatial allocation through unlimited market trial and error. Only when the overall institutional operating cost is continuously compressed and becomes smaller than the benefit increment after rights transfer can the market mechanism be used to approach the ideal state of optimal land-development benefits. As Figure 1(b) shows, although changing market expectations increase land demand in the long term, high transaction costs shift both the demand and supply curves. Therefore, although the new equilibrium price E_2 can create greater total land-use benefits than the initial state E_0 , namely R_1 , a large amount of effective supply and residual benefits are still lost compared with the theoretically attainable equilibrium price E_1 , namely R_2 . It should be noted that reducing transaction costs only reduces benefit dissipation in TDR and leads to a relatively efficient land-allocation pattern. It does not equal the maximization of social benefits or the equalization of benefit distribution. From the perspective of new institutional economics, therefore, TDR must consider transaction costs, but it must also fully attend to the spatial benefits and distributional consequences produced by differences in initial property-right arrangements and transaction rules.

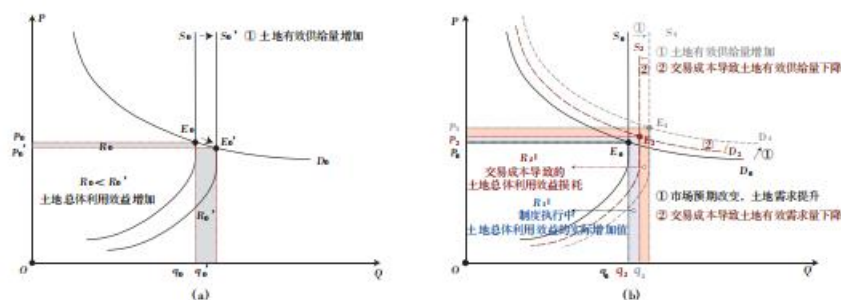


Figure 1 Differences in TDR benefits from the perspectives of neoclassical economics and new institutional economics

2 A Cost-Benefit Analytical Framework for TDR

2.1 Multi-dimensional costs and dual benefits

The above discussion shows that a reasonable TDR mechanism is a systematic project aimed at lowering the institutional costs of adjusting land-allocation patterns and addressing property-right attribution and land-income distribution. Its sustainable operation depends on simultaneously reducing transaction costs and improving the overall benefits of land use. To achieve this, the “black box” of costs and benefits in TDR must be opened. It is therefore necessary to analyze the multi-dimensional transaction costs and dual benefits

embedded in institutional operation in greater depth (Figure 2).

Coase defined transaction costs as the costs of obtaining accurate market information and of negotiation and contracting. In a broader sense, transaction costs can be understood as all costs incurred to complete a transaction [27]. In urban planning, transaction cost is a concept that clearly exists but is difficult to subdivide and measure. Existing studies mainly describe it according to market transaction processes or land-development steps [28-30]. This paper combines such classifications with the operation process of TDR and decomposes the transaction costs contained in TDR institutions into three main dimensions. First are information-matching costs. TDR can be realized only when there is a pair of rights sellers and purchasers with matched demands. Searching among many dispersed property-right subjects for suitable transaction partners necessarily entails information search and exchange costs. Second are negotiation and decision-making costs. Under bounded rationality, information asymmetry, and opportunism, the potential value-added returns from TDR are uncertain and cognitively differentiated. The two sides must therefore negotiate and bargain over the distribution of gains, and the scheme also requires government demonstration, generating bargaining costs and decision-making costs. Third are supervision and enforcement costs. Unlike ordinary commodity transactions, TDR involves not only individual returns but also public interests affecting surrounding parcels and even wider areas. A supervision and management mechanism is therefore needed to regulate actors and resolve disputes, generating corresponding supervision and enforcement costs.

In terms of benefits, land development rights are scarce factors with great value-creating capacity. Their transfer not only generates capital appreciation through differential rent, but also implies broad adjustment of social interests. Transactions driven by capital logic spontaneously seek to capture residual exchange value derived from differential rent. While such transactions can ensure that more efficient spatial producers obtain allocation rights to development rights, they do not necessarily optimize spatial benefits and may even induce NIMBY effects. The benefit analysis of TDR should therefore move beyond the limited focus on increasing exchange benefits through land-capital appreciation during rapid urbanization, and evaluate more comprehensively from the perspectives of benefit distribution and land-use benefits. On the one hand, similar to the debate over whether land appreciation should accrue to the public or private actors, different initial institutional arrangements for development rights influence the distribution of TDR gains³. In essence, they determine which stakeholder has the right to capture land-use appreciation generated by shared social inputs such as planning adjustment and infrastructure investment, thereby affecting fairness and efficiency in urbanization. On the other hand, TDR benefit evaluation should respond to the real spatial needs of socioeconomic development while following market value laws, so that land-right transfer and parcel-use-value improvement occur simultaneously, with full consideration of the social-benefit spillovers of parcel redevelopment.

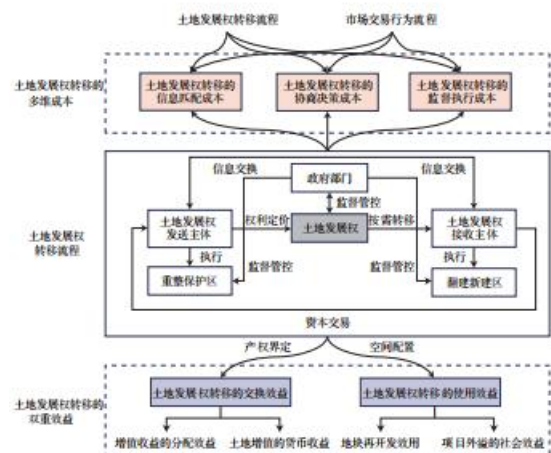


Figure 2 Analytical framework of multi-dimensional costs and dual benefits in the transfer of land development rights

2.2 International reference and practical reflection

2.2.1 The “market trap” in Western practice

It might seem easy to infer that TDR can be widely used in Western forerunner countries with clear land property rights and mature market mechanisms, and can efficiently promote Pareto improvement in land allocation. Reflection on actual projects suggests the opposite: in operation, TDR is constrained by significant transaction costs and strict implementation conditions, and in many cases has not achieved the expected results [31]. Even in the United States, which emphasizes market efficiency and private-right protection, effective TDR programs face a series of preconditions. First, the land market must have good profit expectations for acquiring development rights and undertaking development. Second, receiving and sending areas must meet the complex conditions required for TDR. The former must have appropriate location conditions, infrastructure levels, and manageable NIMBY effects for additional development, while the latter must be subject to strict development control. Finally, there must be almost no alternative that can efficiently achieve additional development on receiving-area parcels [32]. These constraints embed TDR in a complex policy framework and create high hidden transaction costs [29]. A cost-estimation survey of TDR programs in Maryland found that private-sector transaction costs alone accounted for about 13%-21% of total project expenditures, including expenditure and time costs for information search, price negotiation, and title investigation, without counting public-sector costs for scheme approval, supervision, and enforcement [34]. In Italy, where TDR is also relatively mature, uncertainty in development-right prices, search and matching between buyers and sellers, and communication and negotiation have created substantial obstacles to program formation. More importantly, detailed regulatory design and strict land-readjustment review to meet management needs have led to even larger cost dissipation, seriously challenging policy feasibility [35]. Thus, even in institutional environments that strongly value free markets, TDR has not fully achieved dual optimization of efficiency and fairness. It must bear high private costs caused by information asymmetry and opportunism, as well as public costs from project review, public participation, and interdepartmental task integration [33]. Whether a “market trap” exists in which the market cannot efficiently allocate such a special factor as land development rights, and whether TDR better achieves public-policy goals than traditional planning adjustment tools, must still be carefully evaluated in specific institutional contexts.

2.2.2 “Social overdraft” in Chinese practice

In theory, government-led TDR in China should bear higher efficiency losses than market-based Western countries. What is special is that the earlier environment of compressed urbanization objectively promoted the implementation of related practices and lowered the multi-dimensional transaction costs of project operation. Since tax-sharing and land-system reforms, China’s urban land market has long been in short supply. Local governments only needed to create transferable construction-land quotas through the increase-decrease linkage to quickly enter the capital cycle of urban land conveyance, and the information-matching costs accompanying transactions were extremely low. At the same time, local governments committed to growthism were eager to promote economic growth through land finance. As a result, many top-down TDR projects used expropriation, government pricing, and similar means to forcibly allocate development-right gains among different actors [36], while strong public power greatly accelerated negotiation, decision-making, supervision, and enforcement processes that should have been complex and costly.

However, the compression of transaction costs also reduced the dual benefits after TDR. In terms of exchange benefits, although quota relocation did substantially increase land value in the short term, the huge gap in bargaining power among actors meant that considerable gains were not reasonably distributed. This not only

dampened bottom-up willingness to participate in TDR, but also increased the difficulty of supervision and enforcement, and even generated cases of “anti-growth coalitions” around village demolition and consolidation and farmers being moved into apartment buildings, seriously overdrawing the legitimacy and reasonableness of the system [37-38]. In terms of use benefits, the transferred development rights were heavily and disorderly invested in homogeneous real estate development and new-town/new-district construction. These profit-seeking actions did not adequately consider support for strategic goals such as urban industrial development and social service provision, overdrawing the potential efficiency of limited land resources. Although China has used strong governmental resource-allocation capacity to promote optimized development-right allocation at a relatively large scale, the arrival of the stock era shows that the current institutional design has clearly not considered the unsustainability of transaction-cost compression and the hidden social overdraft it brings. The effectiveness and fairness of the policy deserve further reflection.

3 Innovation in the Value-Realization Mechanism of TDR: An Empirical Project

The above reflection indicates that TDR lies at the boundary between public and private rights. Planning control prevents development rights from being fully market-competitive, while public-power-dominated TDR loses the mediating role that it should play. The TDR mechanism therefore needs to move beyond a binary government-versus-market mindset, use the respective advantages of both while adapting to the macro institutional environment, and actively incorporate rural forces. This path has already been preliminarily verified in China’s local practice and provides a reference for innovating existing macro policy design.

The selected case is located in Dayun Town, Jiashan County, Zhejiang Province. Although Dayun is the smallest town in Jiashan by area, it has a prominent locational advantage. In recent years, driven by cultural-tourism leisure and industrial transformation, Dayun has developed rapidly, and the constraint of land space has become increasingly pronounced. The turning point came in 2016, when Jiashan launched the third round of its “Strong Village Plan” and innovated the “enclave pooling” development model characterized by county-level coordination, cross-village development, shareholding operation, and guaranteed dividends. Under this model, land development rights saved after village land consolidation are transformed into collective capital, and land and funds are pooled and invested in superior areas such as provincial-level-or-above industrial platforms and characteristic towns to obtain higher returns. The Sino-German Ecological Industrial Park built through Dayun’s financing was Jiashan’s first Strong Village Plan “enclave pooling” project. It not only broke through the lock on land quotas, but also rapidly increased the collective economic income of weak villages. It is a typical case that relatively well realizes low-cost transfer and high-efficiency allocation of land development rights (Figure 3).



Figure 3 Location distribution of Dayun Town, Sino-German Ecological Industrial Park, and participating villages

3.1 Dissolving multi-dimensional costs: multi-actor resource pooling and shareholding cooperation

Jiashan has a relatively good light-industrial foundation. The small-town development wave at the end of the twentieth century therefore generated many small and medium-sized village and town factories. With the continuing development of park economies and the transformation and upgrading of traditional industries, these scattered production spaces gradually became inefficient land. They were prone to high energy consumption and high pollution and were also unable to obtain effective investment returns. With the implementation of the third round of the Strong Village Plan, these dispersed inefficient rural lands were concentrated. While this freed land quotas for enclave pooling projects, quota transactions and government financial assistance also helped participating villages accumulate initial capital. These resources were guided into pooled investment in the construction and development of standard factory buildings and other property projects. Village collective income and land-development efficiency were both significantly improved. Unlike the one-time buyout of development rights under the increase-decrease linkage, Dayun's enclave pooling project effectively reduced multi-dimensional transaction costs through the re-collectivization of public and private resources and shareholding operation.

Specifically, on the basis of preliminary surveys of low-end, small-scale, and scattered construction land, the Jiashan Land Reserve Center centrally reserved the relevant quotas at relatively reasonable market prices, thereby generating collective capital for villages that withdrew land. Through preferential allocation of land quotas for Strong Village projects, these quotas were quickly placed into Dayun's industrial platform, where spatial demand was urgent and property returns were high. Once spatial quotas were secured, the participating village collectives in the Sino-German Ecological Industrial Park project⁴ concentrated the initial capital obtained from development-right transactions and other subsidies, jointly invested in a limited shareholding company, and were responsible for construction of the park. During this process, the village-collective system effectively concentrated resources and villagers' opinions that would otherwise have been dispersed, reducing the communication and coordination costs associated with large-scale collective action. Based on clear shareholding relations, these villages could further make efficient decisions consistent with collective interests under market rules and form effective mutual supervision.

It must be noted, however, that although this conversion of rights into equity partly restored the village collective's ability to control, distribute, and exchange land development rights, there remained considerable uncertainty over whether suitable market actors could be found and whether reasonable long-term returns could be secured. The project therefore relied on the overall coordination of the Strong Village Plan working group and fully used the information advantages of government departments and local industrial investment-promotion platforms. This promoted the matching of land-allocation patterns with actual industrial demand and avoided rising information-search costs that could have resulted from numerous actors and fragmented parcels. In addition, under the dual orientation of strengthening villages and alleviating poverty as well as promoting industrial agglomeration, the Jiashan Strong Village Plan leading group provided fiscal subsidies, loan-interest subsidies, approval-agency services, and other policy support for project construction. The Dayun town government assisted in investment attraction and construction-fund underpinning, greatly reducing negotiation and decision-making costs and enabling the project to be completed and delivered within just over one year (Figure 4).

macro-level regulation of land development rights. Although the Dayun town government undertook operational underpinning and dividend-return guarantees, current results show that Phase I of the Sino-German Ecological Industrial Park hosts 17 operating firms, covering high-end equipment manufacturing, precision machinery, electronic information, and other industries. It has had a positive demonstration effect on Dayun's industrial transformation and upgrading. Field research also found that the project brought high-quality employment opportunities and strong rental-housing and property demand to surrounding residents, continuously driving local socioeconomic development. From the county perspective, the delimitation of the urban development boundary frames the total amount of spatial development and construction. Although the government must bear short-term costs such as assistance funds and tax rebates, the project achieves broader strategic goals including improved land-allocation efficiency and industrial-cluster cultivation, and secures a long-term sustainable source of local fiscal and tax revenue.

4 Cost-Benefit-Based Optimization Strategies for TDR

The Dayun case in Jiashan County relatively well realizes the dissolution of multi-dimensional costs and the improvement of dual benefits in TDR. At the same time, it has model limitations and locational specificity. For broader practice, it is necessary to extend the discussion of TDR optimization strategies from a cost-benefit perspective.

4.1 Reduce matching and supervision costs: build intermediary platforms and selective incentive policies

Temporary coordination platforms similar to Strong Village Plan working groups can effectively address information asymmetry and cumbersome management processes caused by departmental separation within government, thereby reducing information-matching cost dissipation in TDR. However, such coordination mechanisms essentially internalize information-matching costs within government by relying on the flexibility of policy pilots. For more general development-right transactions, the market mechanism should play a stronger role. Future TDR could therefore establish a government-guided and more open intermediary platform, encouraging participation by markets, village collectives, social organizations, and other actors. Actors needing development rights could conveniently publish information on the platform and quickly match through recommendation mechanisms trained by large models and through professional brokers. The government's main responsibility would be to construct a selective incentive policy system for development rights and regulate market behavior through concise operational rules and rewards and punishments. On the one hand, negative lists, public-interest facility requirements, and similar measures would define planning-control conditions for TDR. On the other hand, incentive policies such as floor area ratio bonuses could encourage TDR behaviors aligned with the public interest.

4.2 Reduce negotiation and enforcement costs: promote political-economic separation in village-level organizations

In TDR practice, because of strong administrative intervention or capital power, village committee decisions often cannot fully represent villagers' interests. They may instead cause losses to individual villagers, hollow out rights to information and participation, and generate social conflicts, thereby increasing negotiation and decision-making costs and reducing implementation efficiency. The Dayun case indicates that promoting the separation of political and economic functions between rural collective economic organizations and grassroots self-governance organizations may be an important means of reducing negotiation and enforcement costs. Unlike the village committee's role in grassroots self-governance, rural collective economic organizations have stronger market independence. They are motivated to activate collective resources more efficiently and can increase villagers' participation and enthusiasm through shareholding reform and financial supervision systems, thereby enhancing grassroots willingness for TDR. In the future, rural areas should explore mechanisms for operating and managing rural collective assets with clear property

relations and smooth organizational responsibilities. Rural collective economic organizations should actively participate in TDR market transactions, fully releasing the market value of rural collective assets.

4.3 Improve exchange benefits: refine development-right pricing and income-distribution rules

The Dayun enclave pooling project partly restored the real value of land development rights by reserving land and converting its value into equity. However, the case itself also benefited from the policy dividend of the Strong Village Plan and is not fully sustainable.⁵ Particularly in development-right pricing and gain distribution, the role of spontaneous market price allocation was not fully used, and the design lacked dynamic adjustment for distributing gains from rights transfer. A reasonable TDR mechanism therefore needs to better couple policy support with market rules, build a systematic rights-pricing standard and income-distribution adjustment rules that adapt to market change, and reduce the risk of benefit conflicts in the later stages of transactions. It is also worth noting that the method of distributing dividends within village collectives requires more refined institutional guidance. It should both enhance the interests of individual villagers and be paired with appropriate mechanisms for public-service sharing and project investment, maximizing the feedback from TDR income to the sustainable development capacity of village collectives.

4.4 Enhance use benefits: strengthen the linkage between spatial-benefit evaluation and land consolidation

Entering the stock era, urban development faces challenges such as scarcity of new projects and constraints imposed by development boundaries. It is therefore necessary to treat TDR as an opportunity to progressively drive systematic adjustment of urban-rural spatial function and structure through comprehensive territorial land consolidation, thereby correcting urban problems left by rapid urbanization [34]. Two issues require further thought and research in TDR innovation. First, analysis of idealized benchmark schemes and their use benefits should be strengthened. The success of the Dayun project benefited from coordinated allocation backed by government credibility, but information misjudgment remains possible. Excluding transaction costs, tools such as urban health checks can rationally identify inefficient land and predict potential nodes from the perspective of use benefits such as fiscal-tax sustainability and industrial innovation. Second, TDR should be better connected with territorial spatial planning and comprehensive territorial land consolidation. Micro-level parcel development-right transactions should be combined with macro-scale urban spatial restructuring strategies, and the target objects, scale, and new land-use functions of TDR should be scientifically determined to maximize social benefits.

5 Conclusions and Discussion

As China enters the urbanization 2.0 stage, the coexistence of urban-rural growth and shrinkage becomes increasingly complex. As an important spatial-governance policy tool for optimizing the territorial development pattern, TDR is not only an important source of urban development momentum in the stock era, but can also become a key catalyst for breaking spatial structural lock-in and promoting urban-rural integration. The theoretical perspective of new institutional economics shows that high transaction costs and unfair gain distribution are the main reasons why TDR has not been widely promoted. The arrival of the stock era makes the conditions for realizing its value even more demanding. The analysis in this study shows that Dayun's exploration offers, to a certain extent, a possible approach adapted to China's conditions and capable of coordinating rural revitalization and urban development. Under the special national condition of collective rural land ownership, China's TDR system should further seek active intervention by village collective forces, build multi-actor intermediary platforms, integrate idle land factors and other village resources, and jointly invest them in parcel development with higher economic and social benefits. In this way, multi-dimensional costs can be dissolved, dual benefits improved, and the refined spatial-governance value that TDR should provide can be fully realized.

Given China's vast regional diversity, the case in this study represents only a specific model of TDR in an

eastern developed region. What is certain, however, is that optimizing the TDR system is also a process of solving reform difficulties in spatial planning, fiscal-tax distribution, and related fields. It can stimulate policy innovation in key issues such as urban transformation, rural revitalization, and modernization of national governance. Only by encouraging more local experiments that respect basic national conditions and objective laws can China ultimately explore a path for realizing TDR value that combines efficiency and fairness.

Notes

1. The windfall-wipeout dilemma refers to the situation in which land in planned development areas obtains additional appreciation while land in restricted areas faces deprivation of potential development value.
2. The TDR discussed in this study mainly refers to the more common and intuitive transfer of construction-land quotas between urban and rural areas or among regions in the Chinese context, rather than intra-urban development-right transfers.
3. Against the background of ambiguous collective land property-right subjects and broad municipal systems in China, differences in land rights and income distribution are large. For example, urban villages may obtain extremely high demolition compensation, whereas expropriation compensation in peripheral villages is far below market price.
4. Participating villages include villages strongly affected by land withdrawal, collective-economy weak villages needing assistance, and ordinary villages with surplus collective funds. Each of the first and second phases involved 22 villages. The first phase mainly involved economically weak villages, and the second mainly villages affected by land withdrawal.
5. Changes in the market environment have caused property rents in enclave parks to decline. To honor the commitment that first-phase dividends for the first ten years equal 10% of investment, the town government faces severe pressure to underpin funding and can only attempt minor adjustments to the dividend ratio for new projects.

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Ai 辅助翻译