





Comparative Analysis of Rural Ecological Resource Development Subjects' Behavior

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Abstract. In the era of ecological civilization, ecological resources have become valuable assets. However, during their exploitation, there exists a substantial issue of “hidden deprivation,” where external entities involved in resource development pay only a nominal land rent for agricultural resources, yet use ecological resources without compensation and claim the profits from their comprehensive development. This study employs a case study approach, comparative research, semi-structured interviews, and the theory of autonomous governance of public wetland resources to explain why village collectives are ideally positioned to develop ecological resources. The results suggest that when village collectives guide the development of ecological resources in their communities, they can better align with the integrated character of these resources and resolve the “hidden deprivation” issue by fostering a more equitable distribution of benefits. Furthermore, the localized structure of village collectives promotes the sustainable development of rural ecological resources. This inherently local characteristic of village collectives favors the long-term sustainability of ecological resources.

Keywords: Ecological Resources · Hidden Deprivation · Collective Economy

1 Introduction

With ecological civilization and rural rehabilitation strategies, green water and mountains have become essential parts of ecological resources. They should be developed through a complete system to ensure ecological security and provide ecological and cultural services. Rural ecological resources are essential for developing new business models like social-ecological agriculture, recreation, nature education, and tourism. However, “hidden deprivation” can negatively impact resource owners during rural ecological resource development. External subjects may use resources without compensation or pay meager prices, benefiting from the value-added income from their comprehensive development. External investment entities may use ecological landscape resources, such as fruit trees, for ecotourism development without compensating the owners [1]. The consequence of this development approach is those resource owners unable to engage in the development of ecological resources in their villages. The outflow of ecological resource development proceeds will make the growth of rural regions, collectives, and

farmers again sidelined. This fact is opposed to the guiding idea of “rural rejuvenation for farmers and rural construction for farmers” proposed in Document No. 1 of 2022. Therefore, easing the “hidden deprivation” in rural ecological resource development is worth considering.

2 Problem Formulation and Hypothesis

Although numerous definitions of ecological resources exist, the unifying aspect is that the holistic relationship between organisms and their environment is highlighted. The entire comprising of creatures and their environment is regarded as an ecosystem [2]. This paper argues that ecological resources in rural parts of China include natural resources like mountains, water, forests, fields, lakes, and grasses, as well as biological resources like animals, plants, and microorganisms, and abiotic resources that makeup ecosystems such as material, energy, information, and space elements. These resources have holistic qualities that are difficult to separate and value independently, similar to Zhang Wuchang’s belief that the sound of a barking dog can be appreciated. Still, the price of each bark needs to be calculated precisely. The sale price or rent of a house in a peaceful setting differs from that in a noisy one [3].

“Implicit deprivation” occurs when ecological resources are undervalued due to a lack of recognition and pricing based on land usage rather than the actual value. This paper defines it as external subjects acquiring ecological resources at the price of agricultural land and exclusively enjoying the excess returns generated by their development. Public pond resources are systems of public resources of a specific size that users can share and individually appropriate the advantages [4]. Most natural resources are public pond resources [5]. The autonomous administration of public pond resources theory seeks to address how a group of interdependent principals can organize themselves for self-governance to achieve lasting co-benefits [4]. This study relies on the principles of the theory, particularly the role of society, to support the idea that rural ecological resource development should involve the simultaneous participation of government, market, and society. This approach recognizes that institutional models must capture real-world complexity and theoretical research must be grounded in field site conditions and policy goals [5].

Accordingly, we used typicality in case selection and selected Q village in Fuzhou City, Fujian Province, and L village in Guyuan City, Ningxia Hui Autonomous Region, for our research. We analyze and compare the development of ecological resources in these villages to examine the role of society (village collectives and villagers) in rural ecological resource development. We aim to understand why village collectives are the most suitable main body for rural ecological resource development. The hypothesis is that if village collectives lead the development of ecological resources and a fair benefit distribution system is implemented, the issue of “hidden deprivation” can be reduced.

3 Comparing Village Q and L Collectives in Ecological Resource Development

3.1 “Hidden Deprivation” Causes: Q Village Collectives Are Reduced to “Land Rental Intermediaries”

As a crucial component of Village Q’s public wetland resources, the village’s ecological resources contain significant potential for development in the era of ecological civilization. However, the present condition of ecological resource development in Village Q is such that neither the village collective nor the villagers - who are the providers of these ecological resources - have been involved in their development. Consequently, they have not participated in the benefits derived from this resource development. In Village Q, it is only external market entities that have secured utilization rights to the ecological resources through a one-time, long-term land transfer priced at agricultural land rates. These entities have developed these resources in an integrated system by incorporating primary, secondary, and tertiary industries and have exclusively profited from the value-added income generated by their development. This has resulted in the resource proprietors enduring “hidden deprivation.”

The primary reason for this is that the village collective of Village Q primarily undertakes the character of a “land leasing intermediary” during negotiations with external investment entities. This is manifested through a “one-time sale” approach, effectively giving away the development rights of ecological resources at a bargain.

The research found that Village Q’s collective saw its function as “introducing investment, revitalizing land, and serving locals”. In bringing in external resource development entities, the collective coordinated to surmount numerous challenges to ensure the seamless execution of the project, substantially alleviating any hurdles in land transfers. A examination of the land transfer contract of Village Q confirms that the collective’s involvement in the process is two-fold: as a resource supplier and as a “land lease broker”. While the former is explicit, the latter is predominantly evident in its role in attracting investment. The village communal transfers or substitutes villagers’ land based on the requirements of external investment agents to guarantee the integrity of the project land (Fig. 1). For instance, the LJ vineyard project’s land transfer contract logic is that LJ Eco-Tech Co., Ltd. signed a one-time land transfer contract for 220 hectares with the village collective. However, this included 20 hectares of land that necessitated negotiation with the local population. To ensure that the project could proceed efficiently, the village collective separately negotiated and ratified another land transfer agreement with the residents via secondary transfer (Fig. 2). Evidently, once the external resource developer commences the project, the Q village collective, operating as a “land leasing intermediary,” loses its influence in the process of ecological resource development and the construction of its revenue distribution pattern. This leads to a “hidden deprivation” problem for the resource proprietor.

3.2 “Common Prosperity”: L Village Collective as Resource Main Body

As a model village for rural asset shareholding reform in Lunde County, L village has a unique approach to ecological resource development. Specifically, the village collective



Fig. 1. Logic diagram of land transfer in village Q

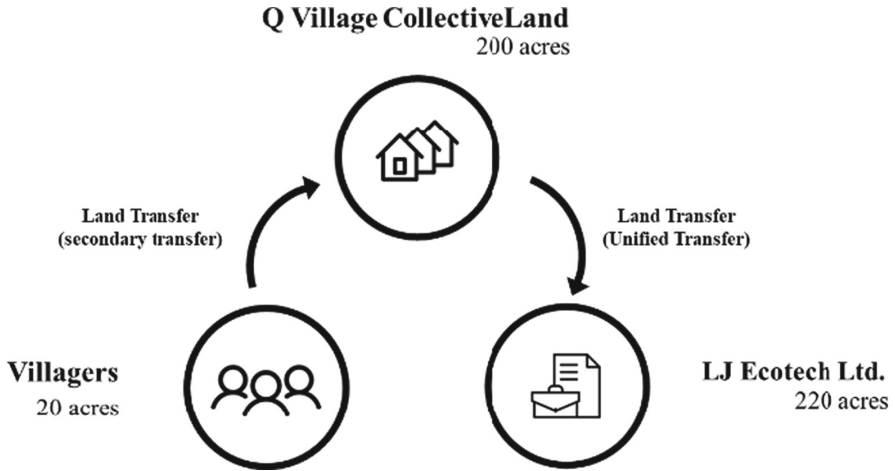


Fig. 2. Logic diagram of land transfer contract signing for the LJ Vineyard project

performs a dual function as both the proprietor and developer of ecological resources. As the primary entity responsible for ecological resource development within the village, the collective directly engages in the development of these resources on behalf of the proprietors. They prioritize economic efficiency and community service, using the proceeds from ecological resource development to boost employment, support vulnerable groups, and effectively administer the village. This approach corresponds with what Ostrom indicated about the formation and expansion of social capital enhancing the positive externalities of progress [7].

In L village, the government, market, and society positively affect ecological resource development. The government provides financial support and policy leadership through shareholding reform. The “investment to equity” method maintains finances and income distribution. Market norms are crucial for cooperative ecological resource development, and external factors contribute to village development. Social engagement is essential, as the village collective integrates resources, encourages growth, and aligns with ecological resources. Secondary production methods are developed, and social capital is established through cooperation. Ancient techniques are preserved. The key to the discrepancy between the ecological resource development results in Village L and Village Q

is that village collectives and villagers who can create more social benefits successfully participate in rural ecological resource development and their benefit sharing.

Objectively, a favorable internal and external environment in L village has enabled the proprietors of ecological resources to participate in and benefit from the development of these resources. This is illustrated by the constructive roles the government, market, and society play in the development process in L village. The government assumes the duties of resource allocation and policy leadership. Several factors contribute to this advantageous environment. Higher authorities have provided financial resources to enhance the collective economy of L village, a crucial foundation for the development of collective assets. L village has been designated as a paradigm for rural asset shareholding reform in Lunde County. Supported by the government, the local agricultural economic management station has implemented a “shareholding reform” policy. Through the “investment to equity” method, the station has been able to sustain the necessary finances for collaborative economic development and simultaneously established a distribution pattern for resource development income that benefits numerous parties.

Secondly, market norms play a vital role in the cooperative development of ecological resources in the L community. Currently, no external market actors are involved in the ecological resource development process in L village. The operation of collective assets such as a vinegar factory, oil mill, and agricultural machinery service team, which rely on market principles for production and operation, has already incorporated market rules to optimize economic efficiency into this process (see Table 1). Building on this, additional market participants can enhance ecological resources and village development in L village with their technical, financial, and managerial advantages. However, the critical factor is the method and mode of their engagement.

Thirdly, social engagement is a distinguishing feature of ecological resource development in L village. Firstly, through the effective integration of village resources, the L village collective fully engages the agency of ecological resource developers. It facilitates growth in the village, the communal economy, and villagers by utilizing income derived from local ecological resource development. The village collective, capitalizing on its local advantages, the current economic and industrial structure, and the village’s history and culture, can effectively amalgamate existing government-supported resources and develop secondary production methods compatible with the village’s ecological resources. For instance, vinegar and oil factories can be established. Serving the people, the village collective can meet villagers’ production and existence requirements. For example, by developing a cooperative economy, the village collective can provide essential stores and agricultural services, thereby fortifying the cooperative economy and yielding multiple benefits. Secondly, villagers and the village collectively labor towards village development, creating social capital and facilitating the establishment of L village’s ecological resources. For instance, the ancient techniques of vinegar making and oil pressing, at risk of being neglected, are critical for developing the village’s ecological resources in a secondary production approach in L village.

The fundamental difference in ecological resource development outcomes between Village L and Village Q resides in the participation of village collectives and villagers who can generate more social benefits in rural ecological resource development and their profit-sharing.

Table 1. Statement of cash flows from collective operable assets of Village L in 2018 and 2019¹

Year	Cash flows from operating activities (yuan)		Net cash flow from operating activities (yuan)
	Subtotal cash inflow	Subtotal cash outflow	
2018	Subtotal cash inflow: 1,174,012.56 ① Sales of goods and services: 850,733.30 ② Other cash related to operating activities: 323,279.26	Subtotal cash outflow: 766,164.66 ① Purchase of goods and services: 419,005.43 ② Other cash related to operating activities: 347,159.23	407,847.90
2019	Subtotal cash inflow: 1,486,507.05 ① Sales of goods and services: 1,226,549.00 ② Other cash related to operating activities: 259,958.05	Subtotal cash outflow: 978,386.16 ① Purchase of goods and services: 790,480.43 ② Other cash related to operating activities: 187,905.73	508,120.89

¹Source Financial statements of the collective-operated assets of L Village for the years 2018 and 2019

3.3 Suitability of Village Collectives in Ecological Resource Development

Given the current context of China's development, this study considers village collectives as more suitable subjects for rural ecological resource development. However, developing these resources should include the participation of other issues.

Firstly, the nature of ecological resources necessitates their integrated development. Rural ecological resources are non-standardized, public, and holistic, [6, 8] exhibiting endogenous, systemic, and structural characteristics. Due to the high degree of interdependence in terms of material existence and functional values, it proves challenging to develop the multiple elements comprised by these resources separately.

Secondly, village collectives can effectively construct a more equitable income distribution structure. The rural collective economy, as discussed in this paper, is founded on the reform of the rural collective property rights system and the "three changes" reform. This system results in a relatively fair pattern of the income distribution, which is vital for the village collective to establish a similar equitable distribution pattern for resource development. This is essential to the effective establishment of a broadly equitable pattern of revenue distribution when the village collective takes on the primary role in natural resource development.

Finally, the localized structure of village collectives is advantageous for the sustainable development of ecological resources. Specifically, since rural ecological resources are confined to the village area and owned by the collective and all villagers, the primary resource proprietors - predominantly the village collective - are most acquainted with the actual condition of these resources. They can effectively integrate extant local resources into their development and carve out a development path that corresponds best with the characteristics of the village's ecological resources. For instance, the L village

collective fully leverages its local advantages in expanding its ecological resources. It secondary develops the village's ecological resources by integrating the local economic structure and social and human resources, effectively minimizing the potential risk in rural ecological resource development due to the necessity to comprehend the actual local situation.

Conversely, when village collectives undertake the integrated systematic development of rural ecological resources on behalf of resource proprietors, it means that these resources become the production instruments of the local people. Given their vested interest in the sustainable development of these resources, village collectives can avoid situations where individual small farmers prioritize short-term gains over long-term sustainability and inadvertently impose the negative consequences of such development onto rural ecological resources. In essence, the sustainability of these resources is ensured when the average rate of resource exploitation is less than the average replenishment rate [4].

4 Conclusions and Recommendations

Rural ecological resource owners' green mountains and hills will become golden mountains in an ecological civilization. When examining village Q and L cases, it was found that different roles played by village collectives impacted resource owners. Village collectives will be the main body of ecological resource development and can handle comprehensive development and distribute proceeds fairly. They pursue the same interests as external resource development subjects, bear greater social responsibility, and represent resource owners' interests. Reform of the rural collective property rights system and "three changes" allows for more equitable revenue distribution, solving "hidden deprivation" and promoting sustainable development. Recommendations based on this are as follows:

Firstly, reforms to the rural collective property rights system should focus on explicitly delineating rural ecological resources and the property rights associated with them. This would pave the way for the development of effective pricing strategies for these resources.

Secondly, it is suggested that the proprietors of rural ecological resources should be prioritized in the development process. This would empower villagers to actively participate and play crucial roles in decision-making and resource development. To accomplish this, the emerging rural collective economy should be encouraged to lead the ecological resource development in their village, thereby representing the interests of resource proprietors in resource planning, development, and revenue distribution.

Finally, active exploration of a new model for cooperative development and regulation of rural ecological resources involving the government, market, and society is required. The development and management of rural ecological resources should leverage the unique strengths of the government, the market, and society, to guarantee the interests of all parties and the sustainable development of ecological resources. All sectors – government, market, and social – should actively participate in pertinent activities. The government should spearhead the effort, mobilizing local communities to investigate rural ecological resource development, coordinating the necessary resources for

this process, and promoting successful experimental projects for broader application. Meanwhile, the market and society should also fulfill their respective responsibilities.

Acknowledgements. This work was financially supported by Science and Technology Bureau Project Foundation of Yong'an and Key Project Grade A (No. 2019C059-4) Faculty Foundation of Fujian Vocational & Technical College of Water Conservancy & Electric Power.

References

1. Tang Li, Dong Xiaodan. Institutional innovation of spatial resource utilization in rural revitalization: How to weaken the “hidden deprivation” of space in the “integration of three industries” [J]. *Exploration and Controversy*, 2019, (12): 113–123, 159–160.
2. Hao Yunlong, Wang Linhe, Zhang Guosheng. Exploring the concept of ecosystem [J]. *Chinese Agronomy Bulletin*, 2008, 24(2): 353–356.
3. Zhang Wuchang. *Economic Explanation (Volume IV: Choice of Institutions)* [M]. Beijing: CITIC Press, 2019: 89.
4. Eleanor Ostrom. *The Way of Governance in Public Affairs - The Evolution of Collective Action Systems* [M]. Shanghai: Shanghai Sanlian Bookstore, 2000.
5. Elinor Ostrom. Why Do We Need to Protect Institutional Diversity? [J]. *European Political Science*, 2012, 11(1).
6. Wen Tiejun, Luo Shixuan, Ma Li. Resource characteristics, fiscal leverage and the reconstruction of new collective economy [J]. *Journal of Southwestern University (Social Science Edition)*, 2021, 47(1): 52–61, 226.
7. Eleanor Ostrom, Long Hu. Social capital: a popular craze or a fundamental concept? [J]. *Comparative Economic and Social Systems*, 2003 (02): 26–34.
8. Yang, Shuai, Luo, Shixuan, Wen, Tiejun. Spatial resource repricing and reconstructing new collective economy [J]. *Journal of the Party School of the Central Committee of the Communist Party of China (National School of Administration)*, 2020, 24 (3): 110–118.

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