

The Evolution of Actor Roles in Rural Ecological Governance: A Case Study of Zhongliao Village, Hainan

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Abstract: This study examines the logic of role evolution and the interaction mechanisms among the government, enterprises, and residents in rural ecological governance, using Zhongliao Village in Hainan Province as a representative case. Employing a Macro-Meso-Micro (M-M-M) dynamic analysis framework, the research divides the governance process into two critical stages: the "Corporate-Led Construction Implantation Period" and the "Post-Corporate Era Endogenous Reconstruction Period." The findings reveal that during the stage of strong external capital intervention, governance was characterized by "government supervision, corporate dominance, and resident dependency." While governance efficacy was significant, endogenous motivation was lacking, creating a logical tension between "landscapization" (aesthetic improvements) and "daily living" needs. Following the withdrawal of the enterprise-triggered by a misalignment in market return mechanisms-the expected "governance vacuum" did not occur. Instead, a new governance pattern emerged, catalyzed by government safety nets, the awakening of resident subjectivity, and the influence of new social strata. Through an interest internalization mechanism, the "courtyard economy" transformed ecological premiums into direct income for residents, thereby completing the reconstruction of subjectivity from passive involvement to active co-construction. By conducting a longitudinal observation and in-depth mechanistic analysis, this study aims to provide pathways for activating endogenous motivation and practical experience for multi-actor collaboration in rural ecological governance, particularly in the context of the national Rural Revitalization Strategy and the risks of market failure.

1. Introduction

In the broader context of the modernization of national governance systems and capabilities, rural governance acts as a cornerstone undergoing a structural transformation of unprecedented scale. The 19th National Congress of 19th National Congress proposed the Rural Revitalization Strategy, establishing the general requirements of "thriving businesses, pleasant living environments, social etiquette and civility, effective governance, and prosperity." Among these, creating a "pleasant living environment" (ecological livability) is not only a crucial node of rural revitalization but also the specific practical field for the concept that "lucid waters and lush mountains are invaluable assets" at the grassroots level [1]. However, as rural ecological governance deepens, the traditional model of singular administrative control has struggled to adapt

to an increasingly complex rural social structure and diversified interest demands. Consequently, building a rural governance community based on "co-construction, co-governance, and sharing" has become a consensus within both academic and political spheres.

Currently, a significant portion of rural ecological governance practice relies on a model of "government guidance + capital going to the countryside," which involves introducing large enterprises for whole-village development and environmental remediation. While this model can rapidly improve village appearance and create standardized "beautiful countryside" landscapes in the short term, scholars and policymakers are beginning to focus on a more latent risk: does the rural ecological governance system possess resilience when external market forces withdraw due to conflicts between commercial logic and public interest? The "weaning pains" following such a withdrawal often lead to the stagnation of infrastructure, a regression in environmental sanitation, and even the phenomenon of "project abandonment" in ecological governance.

This study selects Zhongliao Village as a single case for longitudinal analysis, adopting a mixed-research paradigm dominated by qualitative methods. The research team conducted extensive face-to-face interviews with relevant officials, local villagers, and new external merchants in Zhongliao Village. The interviews focused on the psychological changes, points of conflict regarding interests, and behavioral logic of different actors across various stages. Furthermore, policy documents and corporate reports were systematically reviewed to reconstruct the institutional background and provide data support for the governance process. As a natural village inhabited by the Li ethnic group, Zhongliao Village has experienced the high-intensity intervention of the OCT Group (Overseas Chinese Town Enterprises) followed by its strategic withdrawal. This trajectory offers a complete representation of the transformation process of rural ecological governance actors from "exogenous drive" to "endogenous evolution."

The core questions of this study are: Following the withdrawal of strong external capital, how does the grassroots government fill the governance void through flexible role adjustment? How do villagers, originally in a passive position, achieve an awakening of subjectivity and take over governance rights? What are the driving mechanisms behind this dynamic evolution of actor roles?

2. Literature Review and Analytical Framework

2.1. Literature Review

The evolutionary logic of rural governance in China is essentially a process of waxing and waning, as well as a complex game, involving state power, market forces, and social autonomous forces within the rural arena. Traditional rural governance often bears a strong administrative character, with the government acting as the sole subject, assuming the vast majority of responsibility for supplying public goods. However, with the hollowing out of township finance following tax-for-fee reforms and the deepening atomization of farmers, relying solely on administrative power is no longer sufficient to cover the increasingly complex demands of rural environmental governance. The history of institutional construction in rural governance reflects a path evolution from "villager autonomy" to "co-construction, co-governance, and sharing" [2]. This transformation requires breaking the government's unidirectional control, introducing market mechanisms and social organizations, and building a "governance community" comprising grassroots organizations, the government, enterprises, and villagers. Further research proposes the concept of a "rural governance community," arguing that its generative logic follows the actor logic of "interest coordination, shared rights and responsibilities, and value identification" [3]. This provides an important theoretical lens for understanding the governance reconstruction in Zhongliao Village: when the powerful adhesive of external capital fails, a new governance community can only be generated by reconstructing the interest linkages between villagers and the village. regarding multi-actor collaboration, existing literature tends to focus on idealized cooperation

models among the government, enterprises, social organizations, and villagers. Research on remedial mechanisms following "collaboration failure" remains relatively scarce. Most studies assume that external subjects are stable variables, ignoring their potential mobility.

Ecological governance is a crucial facet of rural governance, involving not only physical aspects such as garbage and sewage treatment but also the green transformation of production modes and the ecological reshaping of lifestyles. Marxist ecological views emphasize the "reconciliation between humanity and nature," requiring rural ecological governance to transcend mere technical engineering and move toward social engineering. In recent years, the embedding of digital technology in rural governance has become a hot topic. Zhang Xinwen et al. proposed a digital governance logic of "structural adjustment-process optimization-action empowerment" [4]. Although digitization is not the core variable in the Zhongliao case, the "influencer economy" effect brought by internet platforms, along with the empowerment of the homestay industry through digital marketing, serves as a key channel connecting external markets with local ecological resources. This effectively constitutes the "technological background" for the evolution of actor roles.

Existing rural governance research largely focuses on the static structure of multi-actor collaboration or the summation of successful experiences, lacking in-depth discussion on dynamic evolution mechanisms after the governance system faces external shocks. By constructing a "Macro-Meso-Micro" (M-M-M) analysis framework, this study breaks through the static collaborative perspective of traditional governance research. It reveals the theoretical logic of how grassroots society achieves governance endogeneity through interest reconstruction and social capital mobilization in the context of market failure, thereby enriching the theoretical lineage of resilient rural governance in the "post-project era." The Zhongliao case holds strong cautionary and demonstrative significance for the vast number of villages relying on external investment for ecological construction. The study reveals a continuous governance model of "government safety net + courtyard economy drive," providing a workable reference path for solving sustainability problems after "capital goes to the countryside." In particular, the insight on utilizing the "Beautiful Courtyard" initiative to transform ecological value into economic value, thereby solidifying villagers' environmental behaviors, has important policy reference value for realizing long-term rural ecological governance.

2.2. The M-M-M Dynamic Analytical Framework

To systematically analyze the evolution of actor roles in the ecological governance of Zhongliao Village, this study constructs a "Macro-Meso-Micro" (M-M-M) three-dimensional dynamic analysis framework. This framework no longer views actors as isolated entities but examines them within specific institutional spaces and social networks.

Macro Level: This level primarily focuses on national and regional institutional arrangements, policy orientations, and resource allocation logic. This includes laws and regulations such as the Rural Revitalization Promotion Law and the Environmental Protection Law, as well as Hainan Province's special designation as a "National Ecological Civilization Pilot Zone". These institutions establish "ecological protection red lines," determining that Zhongliao Village cannot pursue the old path of industrialization or high-intensity real estate development, but must instead explore the integration of ecological tourism and agriculture. The government provides basic material guarantees for governance through instruments like fiscal transfer payments, ecological compensation funds, and special funds for beautiful countryside construction. For instance, the rural domestic sewage treatment project promoted by Sanya City is a concrete manifestation of macro policies landing at the meso level.

Meso Level: This level focuses on the interaction and gaming among township governments,

village collectives, enterprises, and community organizations. This is the physical space where governance occurs. It examines how large enterprises like the OCT Group embedded themselves into the village's original organizational structure and the resulting changes in power structures. It pays attention to internal trust networks, normative systems, and mutual aid mechanisms within the village. Following the enterprise's withdrawal, the study analyzes how the original "society of acquaintances" network was reactivated and how new merchants integrated into and reconstructed the community's social capital.

Micro Level: The micro level delves into the psychological cognition and behavioral choices of individual farming households. This is the ultimate landing point of governance efficacy. Farmers' environmental behaviors are often constrained by economic rationality. Only when ecological governance can bring direct economic returns will farmers transform from "bystanders" to "actors." It examines how villagers gain a sense of identity and pride through participating in ecological construction, thereby forming endogenous moral constraints.

3. Construction Phase: Exogenous Implantation Driven by Capital

3.1. The Role of the Enterprise: The All-Powerful "Super Steward"

This period coincided with the height of the national push for "Beautiful Countryside" construction and the "Characteristic Towns" strategy. As an international tourist city, Sanya urgently needed to establish a set of demonstration rural tourism sites to enrich its tourism product portfolio. Against this backdrop, the OCT Group (Overseas Chinese Town Enterprises), a central state-owned enterprise with substantial capital and experience in cultural tourism development, reached a strategic partnership with the Jiyang District Government of Sanya and the Zhongliao Village Committee, formally entering Zhongliao Village. The governance logic of this period was a typical "externally molded resource" model. During this stage, the OCT Group was not merely an investor but effectively played the role of a "Super Steward" for Zhongliao Village [5]. Its role as a primary actor was manifested in the following dimensions:

Capital Investment and Infrastructure Upgrading: The enterprise invested heavily to comprehensively upgrade the village's roads, landscapes, and lighting. Seizing the opportunity of Sanya City's rural domestic sewage treatment project, the enterprise introduced advanced wetland filtration systems. These systems diverted treated reclaimed water into landscape pools, achieving a perfect combination of "pollution control" and "scenery creation."

Cultural Implantation and Atmosphere Creation: Leveraging its advantages in cultural tourism operations, the OCT Group excavated Li cultural elements and organized villagers to rehearse song and dance programs. Villagers recall that during the development period in 2017, the high frequency of cultural and entertainment activities organized by the enterprise drastically changed the village's spiritual outlook, making villagers aware of the value of "display."

Establishment of Commercial Order: The enterprise introduced standardized commercial management models and uniformly planned business formats within the village. At this time, ecological governance carried a strong tone of "commercial landscapization." The core goal of corporate governance was to transform the village into an "ecological business card" that met the aesthetic expectations of urban tourists. While this governance was efficient, it was also exclusive.

During the enterprise-led phase, the government's role effectively "retreated." The Jiyang District Government primarily assumed functions such as project approval, planning oversight, and peripheral coordination. The government needed to establish a "firewall" between the enterprise's impulse for commercial development and ecological red lines. For example, it strictly limited the scale of permanent structures to ensure land usage designations remained unchanged. The government was responsible for peripheral support work, such as coordinating municipal pipe network access and handling policy matters related to land transfer. At this point, the government

and the enterprise formed a "principal-agent" relationship, where the government effectively delegated a portion of public governance functions (such as environmental sanitation and greening maintenance) to the enterprise.

In this stage, villager subjectivity was suppressed, or rather, "employee-ized." The main form of villager participation in ecological governance was employment as cleaners, security guards, or performers. Their environmental behavior was based on a "wage contract" rather than a "sense of ownership."

Conflict Between Daily Living and Landscape: Interviews revealed not only praise that "it is much cleaner than before" but also complaints that "we aren't allowed to raise pigs or open new land, which affects our livelihood." A fierce collision occurred between the enterprise's standardized governance logic (orderliness, odor-free, visual aesthetics) and the villagers' traditional survival logic (breeding, planting, random stockpiling). During this phase, villagers were more like "NPCs (Non-Player Characters)" living in a scenic area-cooperating with the performance but lacking decision-making power.

3.2. Withdrawal of Market Forces and the Risk of Governance Vacuum

Around 2021, the OCT Group gradually completed the withdrawal of its branch operations in Zhongliao Village, ceasing to lead the daily operation and subsequent construction of the village. This shift was not accidental but the inevitable result of deep logical conflicts:

Zhongliao Village consistently adhered to the principle of "no illegal construction." The village collective held a strict bottom-line mindset regarding land development, refusing large-scale hardening construction that would destroy the original landscape. This directly limited the possibility for the OCT Group to quickly recoup capital through real estate or large-scale commercial facilities.

The "sharing, co-governance, and win-win" agro-tourism fusion model initially envisioned by the OCT Group encountered bottlenecks in actual operation. Pure sightseeing tourism generated low per-customer transaction values, and the external merchants introduced early on had low integration with the local community, resulting in overall economic benefits failing to meet profit targets.

Amid changes in the macro-economic environment, large cultural tourism enterprises widely chose to contract their front lines and divest non-core or low-return assets.

The withdrawal of the enterprise instantly removed the flow of funds and management that maintained the village's high-standard ecological environment. Who would bear the costs of the cleaning teams and greening maintenance previously paid for by the enterprise? Who would take over the cultural activities and marketing promotion previously organized by the enterprise? Merchants relying on the enterprise's planning for survival faced the risk of a precipitous drop in customer flow. This constituted the eve of a classic "Tragedy of the Commons" risk in rural governance research: without a new actor stepping in, Zhongliao Village was extremely likely to revert overnight to its "dirty, chaotic, and poor" past.

4. Post-Construction Phase: Multi-Actor Co-Governance Driven by Endogenous Motivation

Faced with the "vacuum" left by the enterprise's withdrawal, Zhongliao Village did not decline but instead evolved a more resilient mode of endogenous governance. During this stage, the roles of the actors underwent a fundamental reconstruction.

After the enterprise withdrew, the government did not simply return to the old path of an "all-powerful government" but engaged in precise role adjustment to fulfill a "safety net" responsibility.

The government took over the operation and maintenance responsibilities of "hard environment"

infrastructure, such as sewage treatment facilities and garbage transfer systems, ensuring the baseline of ecological governance did not collapse. Continued investment from departments like the Sanya Water Affairs Bureau guaranteed the long-term operation of rural domestic sewage treatment projects.

The government issued the Implementation Plan for the Three-Year Action (2021-2023) to Improve Beautiful Countryside Construction and Management in Sanya City [6], proposing 34 specific tasks and a "Six Ones" mechanism. This plan no longer pursued whole-village investment attraction but encouraged "one village, one characteristic," guiding villages to develop small but beautiful "courtyard economies."

The Jiyang District Government actively imported decentralized traffic resources for Zhongliao Village, driving traffic to villager-operated homestays and restaurants through official media promotion and festival events.

This is the core finding of this study. Following the enterprise's withdrawal, villagers began to spontaneously assume the responsibility of governance subjects, driven by pressures of survival and development as well as the environmental foundation laid during the earlier construction phase.

Villagers are willing to actively maintain the environment because the environment is directly linked to their wallets. By 2021, Zhongliao Village had built 9 homestays with 55 guest rooms, directly generating approximately 1.8234 million RMB in annual income for villagers [7].

Case Analysis: Villager Li Yu keenly seized the business opportunity to transform her idle courtyard into a characteristic homestay. She not only integrated green concepts throughout the operation (using energy-saving lamps, solar energy, and providing ingredients from her own vegetable garden) but also developed activities such as "farming experiences" and "environmental handicraft classes" [8]. In 2023, her household income increased by 40% compared to the previous year. For villagers like Li Yu, garbage at the door or sewage in the river was no longer "public business" but "private business" directly affecting tourist reviews and occupancy rates. This binding of interests stimulated villagers' environmental self-awareness more effectively than any administrative order.

Villagers no longer cling to traditional pig raising or land reclamation but have turned to new types of agriculture compatible with the ecological environment. Villagers utilize the spaces in front of and behind their houses to plant coconuts, betel nuts, and wild vegetables, developing an under-forest economy. These agricultural products are directly supplied to the village's homestays and restaurants, realizing an internal "production-supply-sales" cycle. Some villagers have formed cleaning and renovation teams specifically to service homestay renovations and environmental maintenance within the village, forming an industrial chain centered on ecological governance.

The enterprise's withdrawal left behind not only infrastructure but also a special legacy-"New Villagers."

Managers of establishments like the "Village Bookstore" and "Agarwood Shop" are external residents who chose to remain after the enterprise withdrew. Without the enterprise's protection, they had to integrate more deeply into the village community.

These new merchants brought modern management concepts and aesthetic standards. They formed a subtle relationship of "co-opetition" (cooperation and competition) with local villagers. Local villagers improved their own operational capabilities by mimicking the decoration styles and service standards of new merchants. Meanwhile, new merchants actively participated in discussions on village public affairs, serving as a bridge connecting the external market with the internal community and acting as "New Village Sages" (New Worthies) to enrich the village's social capital network.

5. Actor Roles and Governance Logic in the Two Stages

To more clearly present the evolutionary process, this study conducts a systematic comparison of the two stages (Table 1)

Table 1: Comparison of Actor Roles in Zhongliao Village's Rural Ecological Governance across Two Stages

Comparative Dimension	Construction Phase: Exogenous Implantation	Post-Construction Phase: Endogenous Co-Governance
Dominant Force	Large Enterprise + Strong Capital	Individual Villagers + Grassroots Government + Micro/Small Merchants
Governance Logic	Commercial Landscapization Logic (Creating scenery for tourists)	Livelihood Survival Logic (Protecting scenery for survival)
Government Role	Regulator, Approver (Administrative dominance)	Safety Net Provider, Server, Guide
Enterprise Role	All-powerful Steward, Investor (Full operation)	Subject Withdrawal, transformed into scattered market entities
Resident Role	Employee, Bystander, Passive Cooperation	Operator, Builder, Active Maintenance
Interest Linkage	Wage Contract (Weak Linkage)	Property Rights Income, Operational Dividends (Strong Linkage)
Social Capital	Vertical Dependence (Relying on corporate hierarchy)	Horizontal Mutual Aid (Neighborhood cooperation, merchant alliances)
Governance Performance	Fast results but poor localization, prone to relapse	Slow results but strong resilience, sustainable

To date, Zhongliao Village has received over 1.13 million tourists, mobilizing over 200 households and approximately 400 villagers to participate in the construction of a beautiful countryside, generating a cumulative revenue of about 18 million RMB. These figures illustrate that although the large enterprise withdrew, the village's economic vitality did not extinguish; instead, it penetrated into more farming households through scattered "capillaries." The continuous operation of Sanya City's rural domestic sewage treatment project has maintained the village's sewage treatment rate at an extremely high standard, making the reclaimed water reuse system a normalized landscape in the village.

Nassim Taleb's "Antifragile" theory suggests that some systems can benefit from shocks. The case of Zhongliao Village demonstrates that while the enterprise's withdrawal was a massive external shock, it shattered the villagers' psychological dependency of "waiting, relying, and asking" for corporate help. This crisis forced villagers to stand up and maintain their homes themselves; otherwise, they would lose the tourist flow upon which their livelihoods depended. Therefore, the withdrawal of the enterprise conversely became a "catalyst" for the awakening of villager subjectivity.

Institutional economics argues that clearly defined property rights are a prerequisite for efficient

resource allocation. During the enterprise-led period, the improvement of the village environment was seen as the enterprise's responsibility, and villagers viewed it as a "public good." In the later stage, with the rise of the courtyard economy, environmental quality was effectively "privatized"-it became part of the product of the villagers' own homestays. The courtyard economy internalized the externalities of the environment. The fact that Li Yu's household income grew by 40% sent a strong signal to the whole village: protecting the environment means protecting income. This behavioral reshaping based on economic rationality is far more stable than mere moral indoctrination.

This study finds that the government displayed a high degree of governance wisdom during this evolutionary process. The government did not take over everything after the enterprise withdrew but instead drew clear boundaries:

What to Manage: Manage the pipe networks, roads, planning, and safety nets.

What Not to Manage: Do not manage specific commercial operations or the minute details of villagers' private courtyards.

This art of governance, characterized by "leaving blank space," created room for the growth of villager autonomy and social forces.

Although Zhongliao Village does not have a large-scale centralized digital governance platform, "digital going to the countryside" has played an important role at the micro level. Villagers use social media platforms like WeChat, Douyin (TikTok), and Xiaohongshu to directly market their homestays and agricultural products to the outside world. This decentralized digital connectivity enables scattered small farmers to connect with large markets, thereby breaking free from channel dependence on a single large tourism enterprise. This serves as the important technological background enabling Zhongliao Village to achieve endogenous development.

6. Conclusion

Through a deep analysis of the evolutionary process of actor roles in the ecological governance construction of Zhongliao Village, this study draws the following conclusions: The role of actors in rural ecological governance presents a clear trajectory evolving from "Government Regulation - Enterprise Leadership - Resident Dependence" to "Government Safety Net - Resident Leadership - Social Synergy." The withdrawal of external capital constituted the Critical Juncture for governance transformation, while the "economic conversion of ecological value" (i.e., turning green waters and green mountains into gold and silver mountains) was the fundamental driving force for the awakening of resident subjectivity. Sustainable rural governance cannot rely on external "blood transfusions" for the long term; it must establish a "blood-making" mechanism based on local resource endowments and resident interest linkages. The courtyard economy and the homestay industry are the best carriers for realizing this linkage.

Based on the experience of Zhongliao Village and addressing the common problems currently facing rural ecological governance in China, the following suggestions are proposed:

Improve the Warning and Succession Mechanism for "Capital Withdrawal": When local governments introduce social capital to participate in rural construction, they should pre-set exit clauses and transition plans in contracts. In the later stages of project operation, there should be a conscious effort to cultivate village collective economic organizations and local wealth leaders to ensure a smooth handover when capital withdraws.

Strengthen the Cultivation and Empowerment of "Micro-Subjects": Policy resources should shift from solely supporting large enterprises to supporting individual farming households and micro-enterprises. By establishing special reward and subsidy funds for "Beautiful Courtyards," providing low-interest loans, and conducting homestay management skills training, the threshold for villagers to participate in the ecological industry can be lowered, allowing more individuals like "Li Yu" to emerge.

Promote the Deep Integration of "Ecology + Industry": Governance cannot be done for the sake of governance alone; ecological governance must be bundled with industrial development. There should be vigorous promotion of complex business formats such as "Ecological Agriculture + Rural Tourism + Cultural Experience" to extend the industrial chain and allow the ecological premium to fully manifest.

Build a Digital Collaboration Network: Accelerating digital rural construction is not just about laying hardware but developing application scenarios. The government should build regional public service platforms for rural tourism to help small farmers connect with big markets and solve information asymmetry problems. Future rural ecological governance will rely more on the deep integration of digital technology and social capital. Questions such as how to use blockchain technology to record villagers' environmental behaviors for point redemption, and how to use big data to precisely analyze tourist profiles to guide ecological industry layout, are directions worth further exploration.

The practice of Zhongliao Village proves that as long as the right path is found, farmers are fully capable of becoming the main force of rural ecological governance, while the government should serve as the most steadfast night watchman in this great process.

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