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How Do Industry Leaders Drive the Adaptive Development of Mountain Resources? — A Case Study of Village A in Huaihua, Hunan Province

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Abstract. A mountain village being rich in resources does not mean the resources will naturally become an industry. Taking Village A in the western mountains of Hunan Province as an example, and combining the 2025 field survey, the village plan and industry-specific reports, this paper examines how an industry leader connects scattered resources into sustained operation. The study finds that ecological land constraints, scattered plots and labor, insufficient processing and market access, and intertwined risks such as prices and weather make single inputs hard to work. The actual role of the industry leader is reflected in four types of continuous actions: improving specific production conditions, organizing seasonal labor and purchasing, linking processing with compliance requirements, and keeping a basic trading outlet amid market fluctuations. The government can provide public facilities and policy tools but cannot replace the operating entity in long-term scheduling, settlement, quality control and order fulfillment. Only when the leader's personal abilities are further written into the division of labor and rules of the cooperative and the village collective can they be converted into stable village-level industrial capacity.

Keywords: mountain resources, adaptive development, industry leader, single case study

1. Introduction

In western Hunan, China, mountain village development faces the real difficulty of insufficient development of natural resources, which is unfavorable for increasing farmers' production and income. The region does not lack forest, tea, medicinal herb and special breeding resources, but problems such as inconvenient transportation, lack of funds, scattered resources and organizational difficulties have left such areas without representative products that can stably enter the market. Even when a small amount of product enters supermarkets, e-commerce or stable purchasing channels, it faces difficulties in processing, quality control and production licenses, which seriously constrains local development. Therefore, against the background of common prosperity, the core of mountain resource development lies not in the resources themselves but in forming, within the ecological red line, an institutional arrangement that continuously generates cash flow.

Of the various difficulties mentioned above, different subjects can each solve part of the problems. For example, the government can provide support in public road construction and

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financial subsidies; agricultural technology service entities can solve planting and breeding technical problems; and temporary outside purchasers can also provide sales outlets. However, to achieve the goal of increasing farmers' production and income, a continuous and stable production and sales chain is needed, which requires farmer mobilization, picking-season employment, quality grading, license application, order fulfillment and risk disposal around the characteristic agricultural industry supply chain. These processes are a high organizational requirement for village collectives or cooperatives that have not yet formed mature operating teams. Existing studies have shown that at the initial stage of an organization, the competence of core members affects the cognitive and affective trust of team members, and the relational network also adjusts with the organization's life cycle and affects the organization's ability to obtain external resources [1, 2]. Research on rural self-organization further points out that capable persons can rely on existing social relations to mobilize members and promote the formation of trust, reciprocity, reputation and supervision mechanisms [3]. Therefore, in the rural context of this case, the industry leader plays a key role in organization and leadership; he is both embedded in local social relations and capable of handling costs, customers and market risks, and can unify the resources and responsibilities scattered among the government, farmers and the market in the operation process.

Existing research provides two aspects of foundation for understanding how industry leaders lead village communities to develop rural resources. Research on mountain resources discussed earlier the relationship between comprehensive resource development and ecological and economic benefits, emphasizing adaptation to local conditions and sustained operation [4, 5]. Research on industry leaders has proceeded from quality structure, local embeddedness, demonstration and driving effects, and cultivation mechanisms, pointing out the importance of knowledge and skills, organizational ability, entrepreneurial motivation, local identity and industrial chain operation ability [6-8]. These studies answer what conditions leaders should have and what roles they can play, but do not answer how the leader converts local favorable conditions into the basis of sustained and stable operation, nor do they answer the boundary of responsibilities of rural operating entities.

To answer the above questions, this paper selects a village in the western mountains of Hunan Province for an explanatory single-case study [9, 10], and combines materials such as the village plan, resource and industry assessments, field surveys and symposium records to examine the changes before and after the intervention of the industry leader. This paper focuses on three interrelated questions: first, why the mountain resources of the case village are difficult to directly convert into an industry; second, how the industry leader uses personal abilities and operating resources to build a local advantageous industry; third, under what conditions the leader can play a stable village-level organizational role.

The case materials show that the role of the industry leader goes beyond demonstration planting and breeding, and is also reflected in improving specific production conditions, organizing scattered factors, undertaking policy projects and buffering operational risks. Combining existing research on rural self-organization and endogenous market construction [3, 11], this paper further distinguishes the scope of public input and operational undertaking. The government can provide infrastructure, policy tools and regulatory rules, while the continuously operating entity integrates the various assets accumulated in the village into production, settlement, quality control and orders, creating stable cash flow. These abilities of the leader can convert ecological boundaries, farmer resources and market rules into enforceable operating arrangements. Whether rural characteristic industries can last long also depends on whether personal credit, which relies on relationships to sustain production, can be converted into market rules that do not depend on key individuals. Thus, this paper extends the research on industry leaders from personal discussion of leaders' qualities and

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functions to an explanation of how leaders work within village-level organizations, which is more helpful for providing empirical reference for building characteristic rural industries and increasing farmers' production and income.

2. Literature review and analytical perspective

2.1. Mountain resource development must handle ecological boundaries and operating conditions at the same time

Whether mountain resources can enter the operation process does not depend only on the resource stock. Slopes, forest land, water sources and biological resources must also go through property confirmation, production organization, logistics connection and ecological compliance before they can become stable products. Existing studies have long reminded that mountain development cannot look only at short-term output and must also take into account soil and water conservation and sustained operation [4, 5]. The situation of Village A is more specific: the proportion of ecological land is high, plots are scattered, and road and processing conditions are limited, so the contiguous expansion and mechanization schemes common in plain areas cannot be directly copied. The adaptive development discussed in this paper is precisely to find a combination among resource conditions, production methods, organizational scale and market radius that can be maintained over the long term.

2.2. The role of the industry leader comes from sustained operation

Research on industry leaders mostly summarizes their qualities in terms of knowledge, skills, operating ability and local identity. The iceberg model further distinguishes visible knowledge and skills from motives, values and ways of thinking that are harder to observe [7]. Some studies have also noticed that an overly short industrial chain, insufficient sustained operation ability and inadequate policy services will weaken the leader's driving effect [8]. These discussions explain what kind of person is more likely to become a leader, but do not automatically explain how he does things in the village. Being called "resource integration" in the same way, a one-time purchase and a continuous arrangement of picking, grading, settlement and fulfillment have different effects on farmers.

In village industries, the government, the village collective and market entities each have their strengths. The government holds public facilities, policies and regulatory tools; the village collective can handle authorization and public coordination; enterprises are close to orders and channels. The problem is that these resources are often located in different links. The specialness of the industry leader is not that he is naturally above other subjects, but that he is familiar with both local relations and the production process, and directly bears the consequences of customer loss, inventory backlog and cash settlement. When the village collective or the cooperative already has the same operating ability, the individual leader can be replaced by the organization; in villages where organizational ability is still weak, he is often the person who connects public resources into the operation process.

2.3. From resource constraints to operating actions

Based on the above discussion, the research first identifies the specific constraints encountered in resource development, then records what the leader did, then judges how these actions changed farmers' costs, expectations or trading relations, and finally observes which problems were

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alleviated and which still exist. This order of analysis both retains theoretical concerns and tries to avoid replacing case facts with abstract concepts.

3. Research design

3.1. Case selection

This paper selects Village A not because a complete successful model has already formed here. On the contrary, it places both resource endowment and development difficulties in front of the researcher. The village's territorial space is about 3362.91 hectares, and the planning materials show that ecological land accounts for 93.72%; industries such as tea, rice-oil rotation, under-forest medicinal herbs, honey and livestock coexist, but the degree of processing, channels and organization differs obviously. Tea industry operators, cooperatives and large planting and breeding households have already appeared in the village; some actions have produced results, while others remain at the stage of appeals or plans. This "ongoing case" makes it convenient to observe where the leader's role occurs and where it meets boundaries.

3.2. Data sources

The first-hand materials of this paper were mainly formed from late July to early August 2025. From July 29 to August 1, the research team conducted household interviews in Village A and in other villages in the watershed where the village is located; the currently organized materials cover 8 groups of farmer interviews, involving the production and operation of tea, rice-oil rotation, Polygonatum, honey and black goats, and also recording specific appeals on roads, subsidies, insurance and income distribution. The team also conducted on-site observation of the Chenlongguan project on July 28, held a symposium at the Malu Tea Factory in Anhua County on August 5, and formed symposium materials for the Polygonatum family farm, which are used to supplement the understanding of processing, orders and market access links.

The secondary materials include the Village A Village Planning Specification, village profile, 4 special reports such as the resource survey and industry selection, the village-level enterprise development plan, project application materials and coding worksheets. These materials respectively provide information on village boundaries, industry scale, project progress and operation plans.

During analysis, the research team checked farmers' narratives item by item against the village plan, special calculations and industry-entity symposiums. When the same fact appeared in multiple materials, they verified each other; judgments with only a single source retained their source attribute. Chenlongguan and the Polygonatum family farm were used to compare mechanisms such as processing and governance, not as first-hand samples of Village A, and the practices of the reference cases were certainly not written as facts that have already happened in this village.

Table 1. Composition and use of research materials

Material type	Time or quantity	Main content	Use in this paper
Farmer interviews	July 29 - August 1, 2025; 8 groups	Production and operation of tea, rice-oil rotation, Polygonatum, honey, black goats; appeals on roads, subsidies, insurance and distribution	Identify production constraints, farmer participation and real gaps
Industry entity symposiums and on-site observation	Late July - early August 2025	On-site observation; processing symposium at the tea factory; Polygonatum family farm symposium	Supplement processing, orders, qualifications and governance links; only as reference or process supplement

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Table 1. (continued)

Village archives	Village plan, village profile	Territorial space, ecological red line, population and industry base	Check case background and resource boundaries
Special and project materials	4 special reports plus enterprise plan and project materials	Resource lists, industry calculations, enterprise operation problems, proposed schemes	Check industry ranking, distinguish established facts from planning suggestions

3.3. Coding and evidence control

The materials were organized in three rounds. The first round kept the events and actions in the materials and formed first-order concepts with phrases close to the original meaning, such as "hardening the up-mountain road", "organizing picking by zones" and "processing with external SC qualifications". The second round compared the problems these concepts deal with and grouped them into second-order themes such as working conditions, labor organization, market access and risk buffering. The third round then aggregated the themes into four dimensions: mountain production adaptation, resource organization, policy translation and risk response. Each round returned to the original materials to check subjects and fact states; actions that have happened, farmer appeals, plans in progress, research suggestions and external references were marked separately. The 38 evidence units were kept as the internal analysis base, and the main text only presents the processed data structure.

Table 2. Data structure formed by coding

Aggregated dimension	Second-order theme	First-order concepts	Main materials
Mountain production adaptation	Working condition improvement	Base renovation; hardening the up-mountain road; adjusting picking routes	Farmer interviews
Mountain production adaptation	Formation of production standards	Small-leaf variety processing trials; picking and grading; quality control shortcomings	Tea factory symposium, special reports
Mountain production adaptation	Ecological boundary and industry screening	Ecological red line first; identification of comparative advantages; industry priority order	Village plan, special calculations
Resource organization	Seasonal labor organization	Mobilization by zones; entering the base by boat; daily wage plus performance	Farmer interviews
Resource organization	Raw material and transaction organization	Centralized purchase; unified settlement; small-batch collection and distribution	Farmer interviews, industry materials
Resource organization	Gap in benefit linkage	Mainly obtaining labor or raw material income; raising appeals for project equity and dividends	Farmer interviews
Policy translation	Identification of policy needs	Mismatch between equipment subsidies and mountain operations; roads affecting insurance procedures	Farmer interviews
Policy translation	Undertaking market access	Cooperation with external tea factories; fine processing with SC qualifications; clarifying quality responsibility	Tea factory symposium
Policy translation	Two-way interpretation of rules	Organizing farmer appeals into project problems; converting license requirements into operation rules	Cross-material synthesis
Risk response	Market risk buffering	Sharp price drops; centralized purchase keeping a trading outlet	Farmer interviews

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Table 2. (continued)

Risk response	Natural and production risks	Weather compressing the picking season; livestock deaths; long payback period of Polygonatum	Farmer interviews, special reports
Risk response	Gap in institutionalized risk sharing	Insufficient insurance accessibility; long-term orders and organizational risk sharing not yet formed	Farmer interviews, research synthesis

3.4. Case background

Village A is located in the Wuling Mountains, and forest land and ecological space constitute the main body of the village territory. Ecological land accounts for 93.72%, within which the ecological protection red line and permanent basic farmland draw clear development boundaries. The quality of products such as tea, Polygonatum and honey depends on the mountain ecology here, while the production scale and facility construction cannot break through the protection requirements. Therefore, the first question for the case analysis is not whether there are enough resources, but what resources can be developed and at what intensity.

The determination of the leading industry was not chosen arbitrarily by experience. The project team first used the extended comprehensive comparative advantage index to compare the scale, input-output and market recognition of different agricultural zones of Village A and the neighboring Village B, and then conducted a TOPSIS evaluation of 8 candidate industries from four aspects: economic benefit, social benefit, ecological adaptation and market potential. Eight indicators including annual output value, investment payback period, employment driven, proportion of workers over 60, growth environment suitability, disaster frequency, sales difficulty and policy support formed closeness after range standardization and combined weighting. The results in the report show that tea, rapeseed and rice were 0.868, 0.702 and 0.682 respectively, ranking in the top three; bamboo forest, ecological livestock and Polygonatum are more suitable for phased cultivation, while honey and courtyard economy are suitable as supplements. The complete steps and data sources are listed in Appendix A. This ranking reflects the relative comparison at the time of the survey and does not equal a guarantee of long-term returns.

The industry ranking shows the direction of resource input but does not eliminate the difficulties in operation. At the time of the survey, production in the village was still dominated by scattered farmers. The tea picking season is short, slopes and roads increase picking difficulty, and grain-oil production may compete with tea picking for labor; Polygonatum has a long growth cycle, and a single household can hardly bear the risks of trial planting and capital recovery alone. The sales end depends on a few purchasers, and the purchase price of wild tea once fell from about 30 yuan/jin to about 7 yuan/jin. Insufficient processing, grading and stable orders mean that most farmers still mainly obtain labor or raw material income. Although subsidies exist, some equipment does not fully match mountain operation methods, and inconvenient roads also increase the difficulty of insurance survey and claims.

4. Case description: the process of the industry leader's resource development conditions

In this section, this paper divides the rural resource development process into four stages according to the production organization process, and describes in detail the role of the industry leader in Village A.

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4.1. Maintaining the infrastructure of the production site

The tea base operated by Leader A is located on slopes, and picking in the past relied heavily on physical strength and skilled labor. A single farmer has neither the ability to renovate the whole base nor the willingness to bear road maintenance alone. A renovated the base and hardened the up-mountain road. Farmers who participated in tea picking recalled that after the renovation, going into the mountains was no longer as laborious as before, and women nearby and other seasonal laborers could enter the base more easily. What A did was not to build a public road unrelated to operation, but to connect the passage directly to the production links around picking, transportation and daily management.

This change shows that improving mountain production conditions requires someone to connect public facilities with specific operations. The government can build roads to the village and provide project funds, but it is difficult to decide for a long time the picking route, maintenance timing and employment arrangement of a tea garden. A played a role in this link because whether the road is easy to use will eventually be reflected in his picking cost and raw material supply. However, road hardening can only lower the threshold for entering the mountains and cannot change the short picking season and unstable weather; production transformation still needs to be connected with processing and sales arrangements.

4.2. Organizing scattered labor for picking

Around the Qingming Festival, Leader A organized villagers to enter the tea base by zones; some road sections require taking a boat, and settlement is by "daily wage plus performance". This arrangement left relatively flexible participation space for women who take full-time care of children and farmers in the slack season. For farmers, they do not have to look for purchasers on their own; for the operator, centralized transportation, scheduling and settlement also reduce the costs of bargaining household by household and finding people temporarily. The labor scattered in different households thus formed a relatively stable production rhythm within the limited picking season.

Different from one-time mobilization, what really works is the stable scheduling, transportation, payment and purchasing based on institutions and tacit understanding. Temporary vendors can come to the village to buy a batch of fresh leaves, but they will not reserve labor for the next picking or be responsible for employment settlement. The leader relied on local relations and settlement credit to reduce the uncertainty of both sides. But this organization still has obvious limits: what farmers get is picking wages or raw material payments, and they rarely share the processing and brand benefits. The appeals of farmers for project equity and dividends also show that the existing relationship has not moved from seasonal employment to a stable benefit linkage.

4.3. Interpreting policies and market rules

The market threshold faced by Leader B first manifests as processing and qualification problems. If tea is to enter a wider sales market, it cannot rely only on experience-based processing. Leader B repeatedly tested with the tea factory on fixation temperature, pile-fermentation time and drying methods, and used the factory's SC qualification to improve compliant production. For B, this means clarifying item by item the raw material standards, process requirements, processing responsibilities and order arrangements; for farmers, it means that picking and grading can no longer rely entirely on

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their own habits. The existing materials can only show that this cooperation is advancing, and it cannot be written that A has obtained SC certification.

In the process of bringing products to the market, the industry leader is more like an excellent translator. On the one hand, the leader first understands the conditions of project application, food production licenses and customer orders, and then converts these conditions into picking standards, grading methods and recording requirements that farmers can understand and execute. On the other hand, the leader also organizes farmers' scattered appeals on roads, equipment and insurance into project problems that government departments can identify. In this process, policy interpretation is not one-time work. Although other rural subjects can undertake the translation function once, they cannot continuously play the role of a bridge. The village work team can assist in preparing materials, and the government department in charge can explain policies, but these subjects do not face the consequences of production and sales.

4.4. Smoothing the risks of disease and natural disasters

The risks farmers face do not come only from the market. The price of wild tea once fell from about 30 yuan/jin to about 7 yuan/jin, and the picking season can be compressed by weather; black goats face death risks, and the selling price once dropped from about 2000 yuan/goat to about 900 yuan/goat; Polygonatum takes several years to harvest. When roads are inconvenient, insurance survey and claims also become more difficult. For farmers with limited cash reserves, a single price drop or epidemic can lead to reduced production or even exit.

In the existing materials, the industry leader smoothed the sales risk. With the obvious drop in the price of wild tea, Leader B still provided a sales outlet, so that farmers did not face the situation of being completely unable to sell. However, this risk-smoothing role is actually limited; it neither eliminated the price risk nor can replace insurance, epidemic prevention and long-term orders. If all risks are pressed on the individual leader, the operator himself becomes the most fragile point of the industrial chain. A more stable arrangement still requires the joint participation of cooperatives, village collectives, enterprises and insurance institutions.

5. Case analysis and theoretical discussion

Looking at the four types of actions in the production process together, the process by which the industry leader achieves rural resource development becomes clearer. Road and base renovation allow farmers to enter the plots; scheduling, transportation and purchasing allow scattered labor to form batches within the short picking season; processing collaboration and qualification connection determine whether products can enter a more formal market; and centralized purchase leaves a minimum trading outlet when prices fall. No link can be missing. With only roads and no purchasing, tea may still not be picked; with only processing equipment and no stable raw materials and orders, the equipment may also idle; if only personal promises backstop everything, risks will concentrate on the leader.

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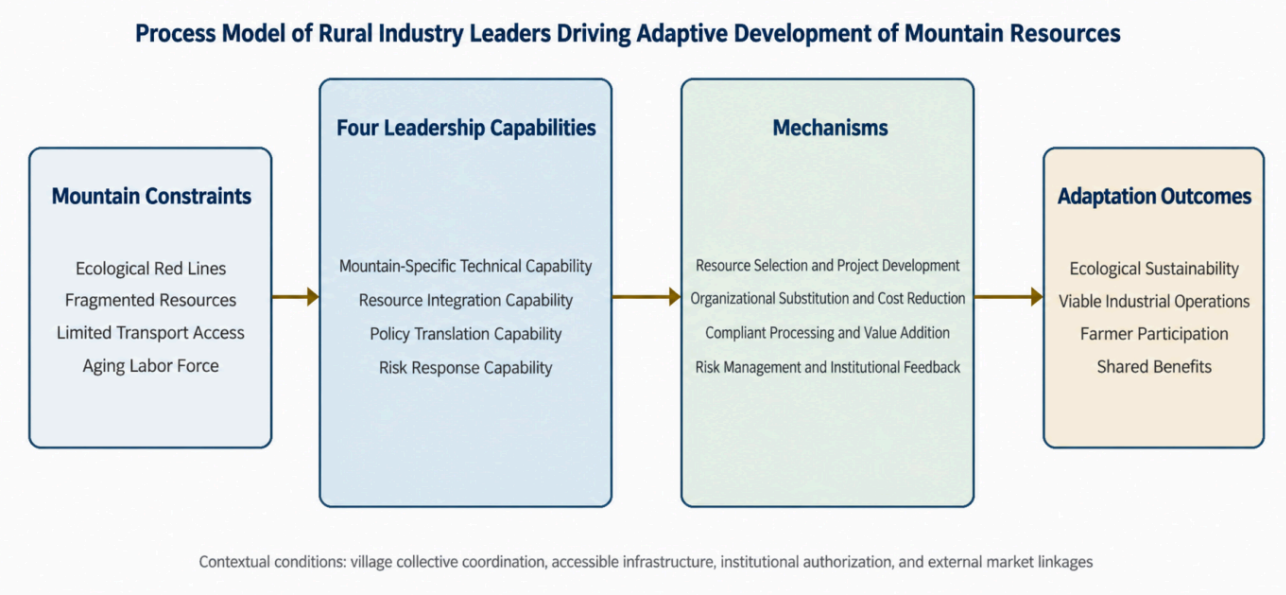


Figure 1. Process model of the industry leader driving the adaptive development of mountain resources

This case shows that the industry leader is not a stand-in for the government, and other rural subjects still have to play their respective functional roles. Ecological boundaries, public facilities and regulation are still the government's responsibility; the village collective handles public authorization and distribution fairness; enterprises or cooperatives undertake operation. The leader's advantage lies in linking the various rural subjects. As the industry continues to develop, picking standards should be formed, customer information organization improved, financial settlement rules formulated and stable external cooperation channels built. The leader cannot stay only at personal experience but should gradually formulate organizational rules. Otherwise, even if the leader solves part of the problems, he may become a new outbreak point of difficulties.

Combining the above materials, three conclusions can be drawn. First, when there are still small and continuous gaps between public infrastructure and specific production, leaders who bear the operating consequences are more willing to continue improving according to operational needs. Second, the more scattered the resources and labor, the less likely the leader's role stays at purchasing; he also has to connect scheduling, transportation, standards and settlement. Third, the more complex the market access and risk requirements, the harder it is for personal relations to support the industry in the long run, and the leader's experience and credit need to be converted into organizational ability through cooperative rules, village collective supervision and external professional services.

6. Conclusions and policy implications

The experience of Village A shows that the obstruction of mountain resource development is not caused by a single technology or funding shortage, but by the superposition of production, organization, access and risk problems. Leader A converted part of the mountain resources into organizable production through base renovation and seasonal employment; Leader B kept a channel for products to enter the market through external processing cooperation and centralized purchase. From these actions it can be seen that the value of the industry leader does not lie in the title of "capable person" but in whether he is willing to connect different links and continuously bear costs

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and consequences. The changes that can currently be observed are mainly base accessibility, seasonal employment, centralized purchase and processing collaboration; unified quality control, stable orders, farmers sharing processing benefits and institutionalized risk sharing are still incomplete.

This paper moves the research focus on industry leaders from a quality list to the operation process. Knowledge, relations and responsibilities only constitute the ability in this case when they are converted into observable actions and change farmers' participation or trading conditions. The research also advances the adaptation of mountain resources from the matching of natural conditions to the matching of production organization and institutional arrangements. More importantly, the case shows that individual leadership is only one way of industry startup. Whether the personally accumulated techniques, customers, credit and coordination experience can be settled into the common rules of the cooperative and the village collective determines how far this model can go.

The support of county and township governments needs to land on real operation blockages. When designing public road projects, internal base passages, subsequent maintenance and production organization should be considered at the same time; around food production licenses, testing and traceability, a complete compliance diagnosis can be provided for operating entities, reducing the situation where equipment cannot enter the market after construction.

The village collective is more suitable for guarding the public boundary. The resource ledger should specify which plots cannot be developed and which projects can only be carried out in limited quantities, and land, facilities and income distribution should also leave public records to avoid public resources being replaced by personal relations.

Cooperatives and enterprises should first make picking and grading, settlement and orders solid before deciding the scale of processing equipment. Quality rewards, equity dividends and exit rules need to be understandable and calculable for farmers. Insurance institutions can establish centralized insurance, reporting and survey co-handling procedures with cooperatives, reducing the additional costs brought by road and information barriers.

The limitations of this paper mainly come from the observation time. The existing interview and symposium materials can present the actions taken by the leader at that time and farmers' immediate reactions, but are not enough to judge whether orders, prices, income distribution and organizational rules are still effective many years later. Follow-up research needs continuous tracking among the same farmers, cooperatives and operating entities, comparing participation, transaction prices, fulfillment records and income distribution across different years, and then testing whether the process summarized in this paper can hold in the long term.

References

[1] Pan, Q. Q., & Wei, H. M. (2016). The relationship between founder competency and entrepreneurial team member's trust under different stages of new venture. *Science & Technology Progress and Policy, 33*(1), 114–120.
[2] Li, H. G., Cao, Y. Y., & Chen, Z. W. (2017). The lifecycle, innovation modes and relationship networks of new ventures. *Foreign Economics & Management, 39*(8), 16–27.
[3] Liang, X. Y., & Luo, J. D. (2018). A study on self-organizing processes: Taking the experiment in Dashilar District as an example. *Urbanism and Architecture*, (25), 24–27.
[4] Peng, S. H. (1996). Development of mountain resources and problems needing attention. *Journal of South-Central Minzu University (Philosophy and Social Sciences)*, (6), 24–28.
[5] Yu, J. H., et al. (2001). Sustainable management and utilization of mountain resources and sustainable development of southern mountainous areas. *Journal of Mountain Science*.
[6] Li, Y. F., & Gao, H. Q. (2022). From poverty alleviation to rural revitalization: The bridging role and cultivation path of local industry leaders. *Journal of China Agricultural University (Social Sciences), 39*(6), 37–54.

DOI: 10.54254/2754-1169/2026.GT38445

[7] Sun, Y. M., Jing, H., & Zhang, M. (2022). A research on the quality of rural industrial leaders based on the iceberg model. *Contemporary Youth Research*, (6), 21–29.
[8] Wan, A. L., & Zhuang, T. H. (2024). Cultivation of rural industry leaders: Value functions, realistic dilemmas and improvement paths. *Rural Economy*, (12).
[9] Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Sage.
[10] Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*(4), 532–550.
[11] Li, Y., Wu, M. Y., Wang, L. J., & Yang, J. (2025). How do rural characteristic industries achieve inclusive market construction? A dual-case study. *Management World, 41*(11), 152–173.

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Appendix

Appendix A. Evaluation method and data description of the leading industries

The method described in this appendix comes from the special reports of the project team's field survey. The main text only uses its ranking results; this appendix supplements the calculation steps, indicators and data sources for verification.

A.1 Screening of comparative advantages of agricultural zones

The project team first compared Village A horizontally with Village B in the same watershed. Scale comparative advantage is measured by the distribution area of resources or industries in different agricultural zones, efficiency comparative advantage by the input-output ratio, and market comparative advantage comes from market recognition scores filled in by large industry households and farmers. The three indices are synthesized into the extended comprehensive comparative advantage index, which is used to screen agricultural zones and candidate industries with a realistic basis.

A.2 TOPSIS evaluation steps

The candidate industries include tea, rapeseed, rice, bamboo forest, ecological livestock, Polygonatum, honey and courtyard economy. The evaluation uses 8 indicators in total. Economic benefits include annual output value and investment payback period; social benefits include employment driven and the proportion of workers over 60; ecological adaptation includes growth environment suitability and disaster frequency; market potential includes perceived sales difficulty and policy support. Annual output value and investment payback period mainly come from interviews with large production households and village committee materials; employment, age structure and disaster frequency come from household surveys and large household interviews; the remaining indicators come from scoring sheets on growth environment, sales difficulty and policy support perception.

In the calculation, the range method is first used to remove dimensions. Positive indicators are processed as (observed value - minimum) / (maximum - minimum), and negative indicators such as investment payback period and disaster frequency are processed as (maximum - observed value) / (maximum - minimum). Then the entropy weights are multiplied by expert weights and normalized to obtain comprehensive weights. The weights finally adopted in the special report are: economic benefit 0.50, of which annual output value 0.35 and investment payback period 0.15; social benefit 0.15, of which employment 0.10 and proportion of workers over 60 0.05; ecological adaptation 0.05, of which growth environment suitability 0.04 and disaster frequency 0.01; market potential 0.30, of which sales difficulty 0.20 and policy support 0.10.

After the standardized indicators are multiplied by the weights, a weighted matrix is formed, and the distances D+ and D- of each industry from the positive and negative ideal solutions are calculated respectively; the closeness is calculated as $Ci = D-/(D+ + D-)$. The larger Ci is, the closer the industry is to the ideal scheme under the evaluation indicators of this round. The ranking obtained in the report is tea 0.868, rapeseed 0.702, rice 0.682, bamboo forest 0.509, ecological livestock 0.468, Polygonatum 0.428, honey 0.397 and courtyard economy 0.347.

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Table A1. Steps and evidence sources of the leading industry evaluation

Stage	Indicator or operation	Data source	Output
Agricultural zone screening	Scale, input-output, market recognition; synthesizing the extended comparative advantage index	Village plan, village committee materials, farmer and large household surveys, Qingjiehe Village comparison	Form candidate industries
Indicator table building	8 indicators in 4 dimensions: economic, social, ecological, market	Large production household interviews, household surveys, village committee materials and 3 types of scoring sheets	Form the original matrix
Standardization and weighting	Range standardization; fusion of entropy weights and expert weights	Original matrix, experience judgments of experts and village cadres	Form the weighted matrix
Closeness ranking	Calculating D+, D- and Ci	Weighted matrix	Obtain the ranking of 8 industries

It needs to be explained that the above data mainly come from one concentrated survey and special organization, and the scores also contain subjective judgments. Therefore, the Ci values are used to compare the relative priority order at the time of the survey and should not be interpreted as long-term return rates or deterministic predictions.