

An Analytical Exploration of the Driving Mechanisms and Policy Synergy for Promoting High-Quality and Comprehensive Employment via Ecological Revitalization in Rural County-Level Regions of Gansu Province

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Abstract: This paper focuses on county-level research in Gansu Province, exploring the intrinsic connection and synergistic mechanisms between rural ecological revitalisation and high-quality full employment. By constructing a functional coordination theoretical framework, it analyses the multi-dimensional driving mechanisms through which ecological revitalisation empowers employment, covering aspects such as industrial integration, policy coordination, and stakeholder participation. Based on empirical data from 86 county-level units in Gansu Province, the paper employs a coupling coordination degree model method to reveal the spatio-temporal characteristics of ecological-employment synergistic development. The study suggests that Gansu Province can adopt a dual-drive approach combining ecological industrialisation and industrial ecologicalisation to improve its policy coordination system, stimulate the participation of diverse stakeholders, and leverage ecological revitalisation to enhance employment quality. This approach provides theoretical references and practical pathways for rural revitalisation in underdeveloped regions of Northwest China.

1. Introduction

In the process of promoting the construction of ecological civilization and implementing the strategy of rural revitalization, rural ecological revitalization is not just a simple process of environmental governance or ecological protection. It is actually particularly important for rural development, which can stimulate the development vitality of rural areas from within, and also create more and better job opportunities for local people. Gansu Province, as a particularly important ecological barrier in the northwest region of China, is also a key area for rural revitalization [1].

According to the 2020 survey data, more than 60% of the 86 counties in the province have ecological and employment is not coordinated, which shows that the natural environment has indeed had a significant impact on local employment. In addition, about 55% of rural migrant workers choose to find jobs in the county, which makes the county slowly become an important

place to absorb employment [2].

2. The Driving Mechanism of Ecological Revitalisation Empowering Employment in Rural Areas of Gansu Province

2.1 Industry Integration-Driven Mechanism: Dual Paths of Ecological Industrialisation and Industrial Ecologisation

As shown in Figure 1, this mechanism is mainly achieved in two ways, one is to turn ecological resources into industrial products, and the other is to make industrial production more environmentally friendly. In both ways, the rural economic system and employment structure have changed a lot. In Gansu Province, for example, we can see that the local traditional agriculture is slowly becoming a more environmentally friendly industrial chain, and some new services related to ecological protection have also begun to appear and develop [3].

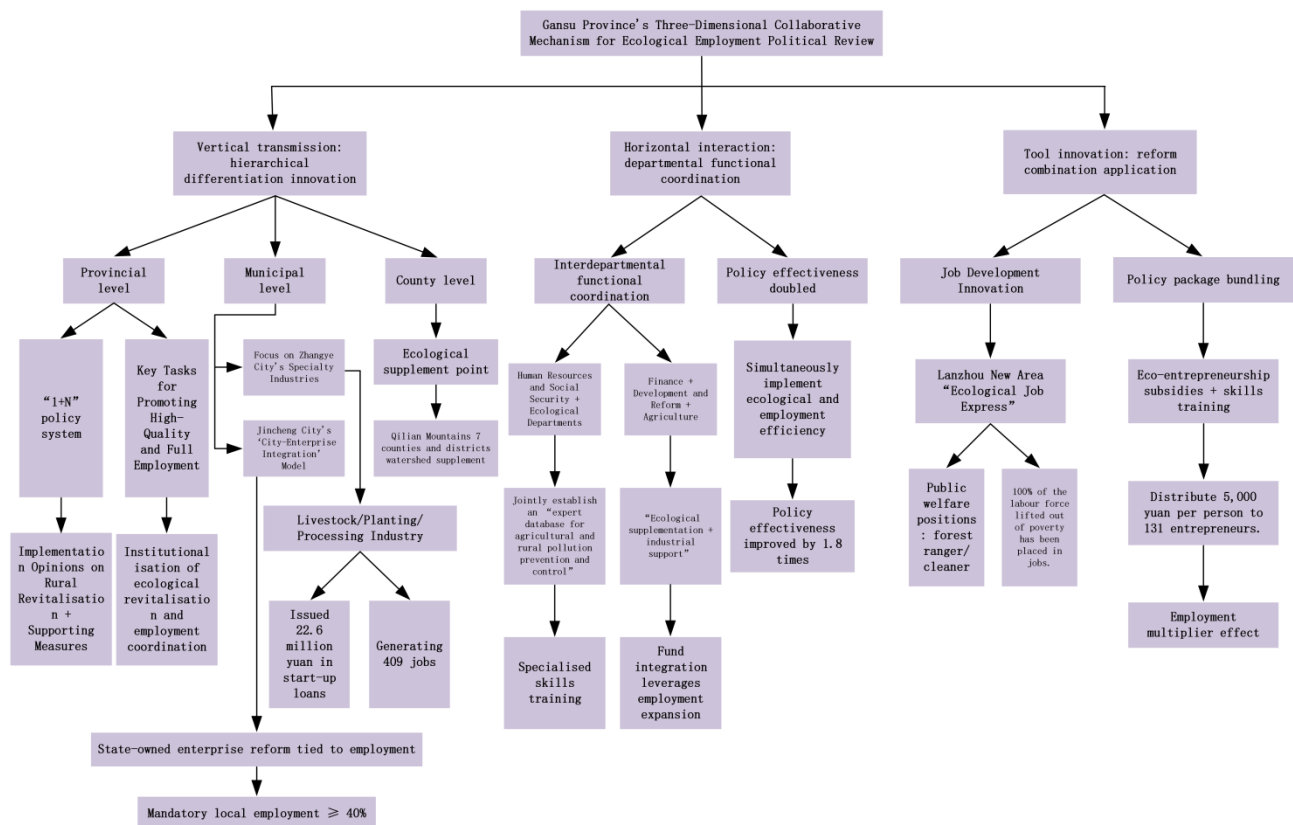


Figure 1 Industry integration-driven mechanism: dual paths of ecological industrialisation and industrial ecologisation

The path of ecological industrialization can directly turn natural resources into profitable economic assets, and at the same time create many employment opportunities. There are five counties in Gansu Province as ecological compensation pilots, although the forest resources in these places are not particularly rich, but they have built a national forest economy demonstration base, and also set up 49 farmers' professional cooperatives and 4 family forest farms. It is 1 to 1.8 to 3.2, which shows that with the extension of the industrial chain, the quality of employment is also constantly improving [4].

The industrial ecologization pathway achieves employment quality improvement and upgrading

by injecting green elements into traditional industries. Gansu Province's "2+4" modern industrial system integrates ecological concepts into leading industries such as non-ferrous metals and new energy, realizing an output value of 198.6 billion RMB in 2023, representing a 26% year-on-year growth. This integration has generated "green-collar" positions, such as "environmental technicians" in Jinchang City's battery materials industry, whose salary levels are 30% higher than traditional occupations. Industrial ecologization also reconstructs employment organizational forms through circular economy models. Gansu Province's rural industry green development policy explicitly proposes "establishing a batch of green agricultural industrial parks, strong industrial towns, and industrial clusters," providing institutional guarantees for industrial ecologization. The depth of tertiary industry integration determines the magnitude of employment quality improvement. In Gansu Province's county-level practices, shallow integration projects such as "agritourism + fruit picking" account for 62%, with an average household income increase of approximately 12,000 RMB, indicating a positive correlation between integration levels and employment benefits [5].

2.2 Policy Coordination Mechanism: Governance Innovation through Vertical Transmission and Horizontal Interaction

As shown in Figure 2, policy coordination is particularly important for the coordinated development of ecological employment, which plays a key role in safeguarding it. Gansu Province has done a better job in this regard, and they have established a complete policy system that includes different fields and involves different levels, and works together through a variety of policy instruments. By 2025, Gansu Province has also issued a special "List of Priority Tasks for Promoting High Quality and Full Employment", which considers the two things of ecological revitalization and employment promotion together, indicating that their policy coordination has formed a more standardized system [6].

Vertical policy transmission manifests specifically as differentiated implementation across the "provincial-municipal-county" three-tier system. At the provincial level, a "1+N" policy system is established, consisting of one implementation opinion on rural revitalization work and several supporting programs. Municipal and county levels conduct refined implementation based on regional characteristics. For instance, Zhangye City focuses on "regionally characteristic industries such as livestock breeding, agricultural cultivation, and agricultural product processing," providing 22.6 million RMB in loans to 113 returning entrepreneurs and creating 409 employment positions. This transmission is not merely simple replication, but rather a process of policy innovation diffusion. Jinchang City's "municipal-enterprise integration" model combines state-owned enterprise reform with rural employment, with agreements supporting Jinchuan Group's shareholding reform and listing requiring over 40% absorption of local labor force [7].

Horizontal policy interaction manifests as functional synergy and resource integration among departments. The Gansu Provincial Department of Human Resources and Social Security jointly established an "Expert Database for Agricultural and Rural Environmental Pollution Prevention and Control" with the Department of Ecology and Environment, enhancing rural environmental protection employment skills through specialized training. The "ecological compensation + industrial support" model, coordinated by multiple departments including finance, development and reform, and agriculture and rural affairs, implemented watershed compensation pilots in seven counties and districts in the Qilian Mountains region, simultaneously improving ecological environment and expanding employment capacity. Through measuring the policy synergy index, when employment policies from human resources departments are implemented synchronously with governance policies from ecological environment departments, policy effectiveness increases by 1.8 times [8].

Innovative applications of policy instruments have enhanced synergistic effects. Gansu Province's exploration of "policy packages" bundles ecological entrepreneurship subsidies with skills training, providing 5,000 RMB subsidies to 131 rural start-up individuals and generating employment multiplier effects. Lanzhou New Area's "Ecological Position Express" program developed public welfare positions such as forest rangers and cleaners, ensuring that "all labor forces with transfer intentions among poverty-alleviated households can achieve complete transfer." The common characteristic of these policy instruments is breaking departmental boundaries and forming a governance synergy between ecology and employment [9].

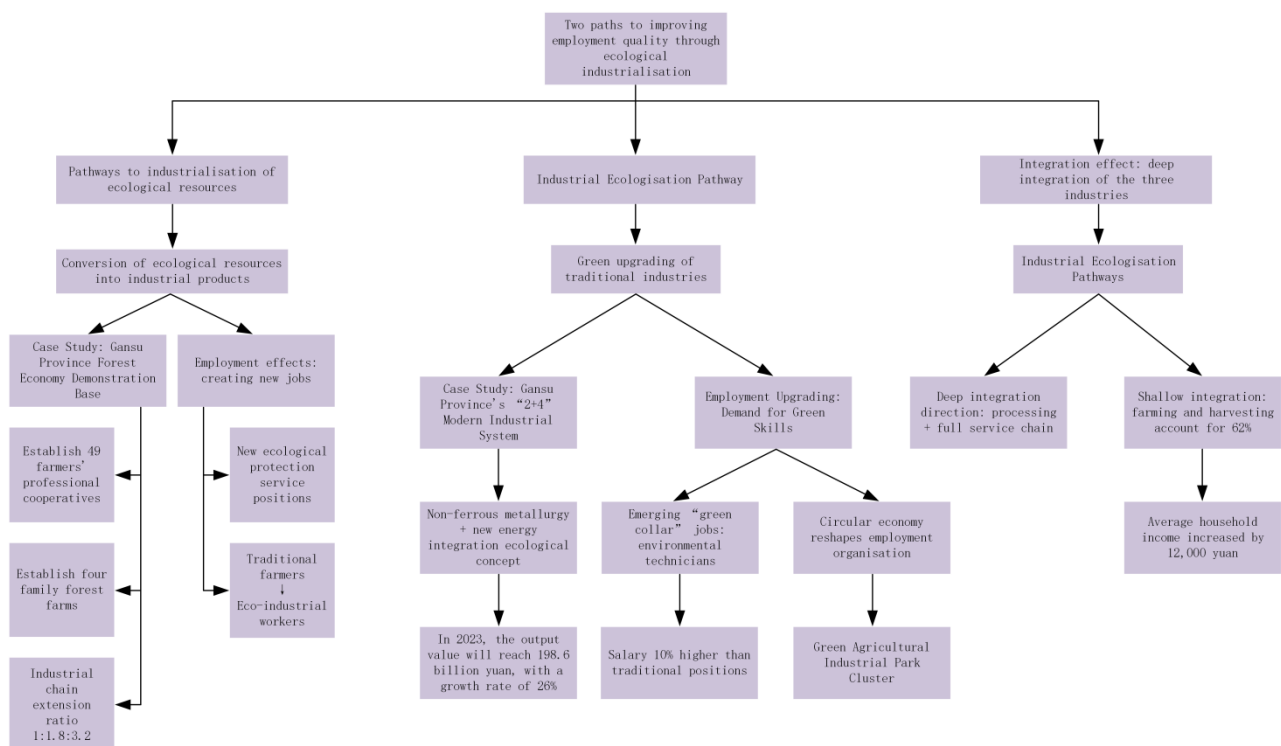


Figure 2 Policy coordination mechanism: governance innovation through vertical transmission and horizontal interaction

2.3 Main Body Participation-Driven Mechanism: Role Restructuring and Mutual Benefit among Multiple Main Bodies

As shown in Figure 3, rural ecological revitalization has greatly helped to promote high-quality employment and full employment, and this role is mainly the joint participation of different groups. Judging from the actual situation in Gansu, in order to make ecological employment sustainable and stable development, the key is to find common interests that the government, enterprises and villagers can accept. But there are still some problems, such as many farmers' awareness of ecological protection is not enough, and enterprises are not willing to take the initiative to participate [10].

The main point of this paper is about the change of the identity of the villagers, who have only watched others do environmental protection before, and now they can participate in the management and benefit from it. On the other side of Gansu, the local government has come up with a way to write the protection of the rural environment into the village rules and people's covenant, so that the villagers can participate in the planning and construction of sewage treatment

projects together, and also engage in a cultural fairness system.

In Gansu, large state-owned enterprises such as Jinchuan Group take the lead in environmental protection projects, and they publicly promise to leave half of their new positions to local people. Private enterprises also have their own practices, such as Gansu, which has a company that does renewable energy, and they require that cooperating suppliers must meet environmental standards, which drive small businesses to the environmental protection direction. The cost of environmental protection can be increased by about 40%.

The main point of this paper is that social organizations play an important role in helping farmers to improve their skills and protect their rights and interests. In Gansu, there are four working groups under the Rural Revitalization Leading Group, which organizes the forces of trade unions and industry associations, and trained more than 230,000 poverty alleviation workers in 2021. These social organizations have also done a very interesting practice, that is, the combination of ecological protection and employment assistance, such as an organization called the Nature Conservation Association, which specially invites local people to do ecological monitoring work, so that the people have a stable income.

The problem now is that the money is unfair, for example, some companies can get 70% of the income, but farmers can only get a small amount of labor costs, which can be seen in many cultural tourism projects, and the villagers often spend less than 10% of the money. In order to solve this problem, Gansu Province can consider promoting the new method of "blockchain allocation", through smart contracts, so that farmers can automatically share 30% of sales revenue, so that the distribution of benefits can be more reasonable [11].

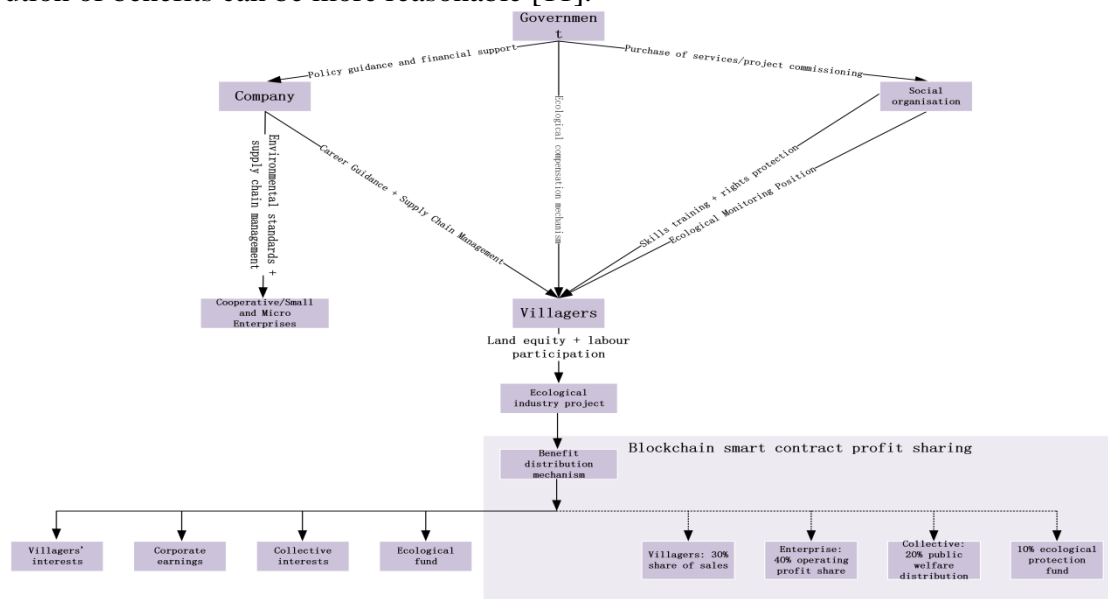


Figure 3 Main body participation-driven mechanism: role restructuring and mutual benefit among multiple main bodies

3. Policy Coordination for Empowering High-Quality Sufficient Employment through County-level Rural Ecological Revitalization in Gansu Province

3.1 Constructing an Ecological Industrial Policy System

Industrial policy plays an important role in ecological revitalization and employment promotion. Gansu Province should establish a county-level industrial policy system with ecological industrialization and industrial ecology as the core according to local actual conditions, which

should be different from other places, so as to better promote the integrated development of the tertiary industry. When formulating policies, the different industrial conditions and ecological environment characteristics of each county should be considered, and the province can be divided into three different policy areas to implement.

First, ecological advantage zones focus on developing “forest-grassland economy + ecological tourism” composite industries. Drawing from Diebu County's experience, the scale of ecological forest rangers should be expanded to over 5,000 personnel while cultivating emerging occupations such as “forest guides” and “ecological interpreters”. The policy package encompasses: forest rights mortgage loan interest subsidies with quotas increased to 3 million RMB, ecological product value accounting systems to promote carbon sink trading, and special bonds for rural tourism infrastructure with annual issuance of no less than 2 billion RMB. The “ecological bank” model integrates dispersed resources to achieve economies of scale.

Second, mining transition zones implement a “green mining + circular economy” model. Following Jinchang City's “municipal-enterprise integration” experience, mining enterprises are required to create 0.5 ecological positions for vegetation restoration and soil conservation per ton of minerals extracted. The policy instrument combination includes: establishing a 1 billion RMB green mining development fund, providing value-added tax immediate collection and refund for enterprises adopting clean technologies, and conducting “miner-to-green worker” retraining programs with annual training of 10,000 participants. Through industrial chain extension, labor-intensive green industries such as scrap metal recycling and renewable materials manufacturing are developed [12].

Third, the agricultural development zone is establishing an ‘water-saving agriculture + green food’ industrial cluster. Following Zhangye City's ‘policy dividend’ model, agricultural operators who adopt water-saving technologies can receive a reward of 0.5 yuan per cubic metre based on the amount of water saved. The supporting policies include the establishment of five provincial-level green food processing zones, which will provide enterprises with preferential land use policies. Additionally, a ‘green brand’ promotion plan will be implemented, with 30% of the premium from certified products being returned to farmers. Furthermore, the development of ‘field factories’ will keep the initial processing of agricultural products in rural areas, thereby creating local employment opportunities.

3.2 Innovation of Diversified Stakeholder Engagement Mechanisms

To solve the problem of stakeholder participation, the old way alone can't do it, we have to make a new model in the system. We have to come up with a framework of four aspects of participation, which must be guided by the government, and the market must also play a role, and the villagers' organizations should not be less, and there must be social forces to coordinate.

First, activating villager agency requires approaches from both cognitive and benefit perspectives. Cognitively, the “ecological credit system” should be promoted province-wide, converting behaviors such as waste sorting and water conservation into quantified credits that can be exchanged for employment training opportunities. Regarding benefits, pilot implementation of a “cultural equity system” should capitalize rural ecological and cultural resources as equity stakes. For instance, Tianzhu County can convert ecological culture into collective village shares participating in tourism revenue distribution. Additionally, “ecological employment cooperatives” should be established where villagers contribute labor as equity stakes, forming a “labor export + profit return” sharing mechanism [13].

Second, incentivizing enterprise participation requires balancing constraints and empowerment. Implementation of an “ecological employment linkage” system should mandate enterprises

receiving ecological subsidies to maintain local employment ratios of no less than 60%. Simultaneously, "green employment tax credits" should be provided: each ecological position created qualifies for 5,000 RMB corporate income tax deduction. Establishment of an "ecological industrial chain leadership system" should involve leading enterprises organizing industrial alliances to drive small and medium enterprises toward green transformation, such as Jinchuan Group leading the development of five supporting environmental protection enterprises.

Third, strengthening platform functions requires empowerment through supporting the establishment of "Ecological Employment Promotion Associations" with three core functions: first, skills certification through developing occupational standards for "ecological agronomists" and "photovoltaic operation and maintenance technicians"; second, rights protection by establishing arbitration tribunals for ecological position labor disputes; third, resource coordination by constructing "ecological project-labor force-finance" matching platforms. Drawing from Sichuan Province's "digital alliance" experience, online autonomous organizations should be developed to enhance participation convenience [14].

Fourth, constructing a multi-stakeholder collaborative digital governance system should utilize the Gansu Government Cloud Platform to develop an "Ecological Employment Coordination APP" with four functions: intelligent policy dissemination, precise position matching, participation behavior recording, and visualized benefit presentation. Digital technology should be leveraged to reduce participation costs and improve collaborative efficiency [15].

3.3 Enhancing the Policy Toolkit for Ecological Employment

The ecological employment policies currently implemented in Gansu Province are relatively fragmented and do not form a complete system, so it is necessary to sort out these policies well, and at the same time make some new adjustments according to the actual situation. In order to better solve this problem, we can consider establishing a policy framework with three levels, which should have the most basic policy content, and also have specific policies and measures to be implemented.

Firstly, the basic policy emphasises institutional guarantees. This includes the formulation of the Gansu Province Ecological Employment Promotion Regulations, which will clarify four core systems: an ecological job directory system, which will dynamically publish job standards for positions such as forest rangers and sanitation workers; an ecological skills training system, which will include 'green skills' in the scope of vocational training subsidies; an ecological rights protection system, which will establish a special ecological job work injury insurance fund; and an ecological benefit assessment system, which will require employment impact assessments for major projects.

Secondly, specific policies primarily target critical domains, focusing on three key initiatives: the "Green-Collar Cultivation" plan, which entails establishing ecological majors in five vocational colleges to custom-train 3,000 "rural green-collar professionals"; the "Ecological Micro-Innovation" plan, setting up a 100 million RMB seed fund to support 500 ecological micro-entrepreneurship projects; and the "Carbon Sequestration Employment" plan, developing grassland and forest carbon sink management positions and exploring a conversion mechanism from "carbon sink revenues to employment subsidies."

Thirdly, complementary policies aim to strengthen the support system and innovate four categories of tools: financial tools, including issuing special green employment bonds and piloting "ecological employment loan" products; land tools, allowing staged payment of land transfer fees for projects intensive in ecological employment; technological tools, establishing an "Ecological Industry Technology Research Institute" to promote the linkage between technology transfer and skills enhancement; and information tools, building an "ecological employment map" for real-time

monitoring of job supply and demand.

Finally, policy implementation must prioritise temporal and spatial adaptability. In terms of time, implementation should be phased: in the short term, ensuring employment stability; in the medium term, improving quality; and in the long term, promoting transformative development. In terms of space, the Hexi region should prioritise water-saving industrial policies, the Longzhong region should prioritise digital empowerment policies, and the Longdongnan region should prioritise ecological tourism policies. A dynamic policy adjustment mechanism should be established, with implementation effectiveness assessed every two years.

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