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AI Enabling Mechanism of Characteristic Industries in Western Counties: Research on Transformation Path and Institutional Adaptability of "Ecological Value-Digital Economy"

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Abstract: *Based on the background of western development and digital China construction strategy in the new era, this paper focuses on the mechanism innovation and system adaptation of the transformation from ecological value of characteristic industries in western counties to digital economy driven by artificial intelligence technology. Based on the new quality productivity theory and ecological modernization theory, this paper constructs a three-dimensional analysis framework of "technology enablement-path innovation-system adaptation", and reveals the core role of AI technology in the process of digitalization, capitalization and capitalization of ecological resources by combining typical cases in Shaanxi and Sichuan. The research shows that through blockchain confirmation, intelligent accounting and digital market construction, western counties can break through geographical and resource constraints and realize the transformation of ecological resources into economic value; and the coordinated promotion of the three paths of "intelligent upgrading of industry", "digital format cultivation" and "regional coordinated development" needs to be supported by matching differentiation systems. The study further proposes to construct a policy system of "county digital ecological community", which provides theoretical support and practical paradigm for western counties to leverage ecological advantages and realize green rise relying on AI technology.*

Keywords: *Artificial Intelligence; Western Counties; Ecological Value; Digital Economy; Institutional Adaptation*

1. Introduction

Under the dual background of global sustainable development agenda and China's "double carbon" strategy, western China, as a national ecological barrier and resource-rich area, is facing the balance between ecological protection and economic development. According to China Bulletin on Ecological Civilization Construction, the western region contributes 75% of the country's forest stock and 68% of the total water resources, but only accounts for 21.3% of the country's GDP (2024). This inversion between ecological resources and economic contributions highlights the limitations of the traditional development model. At the same time, the rapid development of artificial intelligence technology provides new ideas for solving this dilemma. The Overall Layout Plan for Digital China Construction clearly puts forward "building a green and intelligent digital ecological civilization," which requires activating the value of ecological resources through digital means and injecting new kinetic energy into the development of western counties [1].

As the spatial carrier of ecological resources and the grass-roots unit of regional economy, the western counties carry nearly 60% of the resident population and 45% of the total economic volume in the west. Its characteristic industries mostly rely on ecological resource endowments, such as Chinese medicinal materials in the Qinba Mountain Area, ecological agriculture in the Yunnan-Guizhou Plateau, and clean energy in the Northwest. However, limited by weak digital foundation, insufficient talent reserve and lagging system supply, ecological value is difficult to effectively transform into economic benefits. According to the National Bureau of Statistics, the penetration rate of digital economy in western counties in 2024 was only 28.7%, 15 percentage points lower than the national average level. How to open up the transformation channel from "green water and green mountains" to "Jinshan Yinshan" through AI technology has become the core proposition of high-quality development in western counties [2].

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This study focuses on three core issues: one is how AI technology reconstructs the accuracy and efficiency of ecological value identification; the other is how digital paths solve the dilemma of ecological products "difficult to realize"; and the third is how institutional systems adapt to the dual needs of technology empowerment and path innovation. Through the multidisciplinary perspective of integrating regional economics, environmental governance and digital technology science, literature analysis, case comparison and empirical research methods are adopted to select typical counties such as Lueyang in Shaanxi Province and Pingbeichuan in Sichuan Province for in-depth investigation, aiming at providing academic support and practical reference for exploring AI-driven ecological value transformation paradigm in western counties [3].

2. Characteristics of Characteristic Industries and Ecological Resources Endowment in Western Counties

2.1 Industrial Types and Distribution of Ecological Resources

The characteristic industries in western counties show distinct geographical dependence and ecological correlation, forming four typical categories: one is ecological agriculture, such as selenium-rich tea in southern Shaanxi, organic coffee in Yunnan, Rosa roxburghii planting in Guizhou, etc., whose product premium is highly dependent on ecological environment quality; the other is green energy, such as Qinghai photovoltaic, Inner Mongolia wind power, West Sichuan hydropower, etc., which directly converts natural energy into economic output; Third, ecological cultural tourism, relying on nature reserves, forest parks and other resources, such as Jiuzhaigou tourism, Dong culture experience in southeast Guizhou, etc.; fourth, biological medicine, such as Xizang Tibetan medicine, Gansu Longnan traditional Chinese medicine, etc., raw material quality is closely related to ecological environment. These industries together constitute the basis of "eco-industry" symbiosis system in western counties [4].

The spatial differentiation of ecological resources endowment further shapes the differentiation pattern of industrial development. The counties of Qinghai-Tibet Plateau are dominated by alpine ecosystem, which is suitable for the development of Tibetan medicine planting and ecotourism; Yungui Plateau counties have the advantages of three-dimensional climate and biodiversity, which are suitable for characteristic agriculture and carbon sink projects; counties in arid areas of northwest China rely on scenery resources to focus on clean energy and water-saving agriculture; counties in Qinba Mountain area develop green food and medicine industry by virtue of traditional Chinese medicine resources and water conservation function. This resource-industry matching relationship provides a differentiated scenario basis for AI technology empowerment [5].

2.2 Bottlenecks and Challenges

Table 1: Corresponding Relationship between Characteristic Industry Types and Ecological Resources in Western Counties

Industry type	Typical area	Core ecological resources	AI Empowering Key Scenarios
Ecological agriculture	Meitan County, Guizhou Province	Tea garden ecosystem, selenium-rich soil	Intelligent irrigation, spectral analysis, yield prediction
Green energy	Gonghe County,Qinghai Province	Solar radiation resources, desert land	Power generation volume prediction, intelligent operation and maintenance, power grid dispatching
Ecological Tourism and Culture Tourism	Jiuzhaigou County,Sichuan Province	Forest landscape, water resources, biodiversity	ourist behavior analysis, virtual guided tours, ecological carrying capacity monitoring
Biomedical Sciences	Longnan City, Gansu Province	Traditional Chinese medicinal plant germplasm resources, mountainous climate	Planting environment simulation, component analysis, supply-demand matching

As shown in Table 1, the development of ecological industry in western counties faces multiple constraints, mainly manifested in four dimensions: first, the digital foundation is weak: although the coverage rate of 5G in counties reaches 78%, the computing resources are only 5.3% of those in cities, and the scarcity of edge computing nodes leads to low efficiency of AI model training. For example, Pingwu County of Sichuan Province was unable to process infrared camera monitoring data in real time due to network delay, which affected the accuracy of ecological asset accounting; secondly, the structural shortage of talents: the number of technical task force and AI engineers was less than 1/3 of that of eastern counties, and the outflow rate of native talents exceeded 40%. The practice of Lueyang County shows that due to the lack of data analysts in the development of rural e-commerce, the pricing

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strategy of agricultural products is inaccurate, and the premium space is squeezed by channel merchants. Third, the low-end of the industry is locked: most counties stay in the raw material supply stage. For example, the proportion of initial processing in Tianma production area in southern Shaanxi reaches 75%, but the deep processing is less than 10%, and the added value of the industrial chain is seriously lost. AI-driven intelligent upgrading is difficult to break through the bottleneck of industrial upgrading due to capital and technical constraints; the coordination of forty systems is insufficient: the ecological compensation standard is not unified, the definition of data property rights is vague, and the cross-department supervision is fragmented. For example, the carbon sink transaction in a county in Guizhou was shelved due to the conflict between the accounting standards of forestry and environmental protection departments [6].

3. Technical Mechanism of Ai Enabling Ecological Value Digitization

3.1 Data Collection and Confirmation Mechanism

Digital transformation of ecological values begins with high-precision data collection and ownership confirmation. AI technology realizes global monitoring of ecological resources through multi-source sensing network construction: firstly, integrated monitoring of air and earth: satellite remote sensing (such as high score series), unmanned aerial vehicle aerial photography and ground sensor network are used to collect vegetation cover, water quality change, soil moisture and other data. Pingwu County, Sichuan Province has established a "UAV patrol-infrared camera monitoring" system to realize dynamic monitoring of 12,000 square kilometers of giant panda habitat, and the data collection efficiency has been improved by 80%. Convolutional neural network (CNN) analysis of image data, automatic identification of illegal logging, poaching and other behaviors, early warning accuracy rate of 92%; second, block chain confirmation certificate: the collected ecological data through consensus algorithm chain, forming a non-tamperable "digital ecological ledger." Lueyang County, Shaanxi Province introduced blockchain technology into the platform of "slight innovation" to establish origin traceability certificates for characteristic agricultural products in 152 villages. Consumers can verify the ecological attributes of products by scanning the code, and the premium rate will increase by 30%. This technology is also applied to carbon sink resource confirmation to solve the problem of transaction stagnation caused by forest right disputes [7].

3.2 Value Accounting and Productization Mechanism

Quantification of the value of ecological resources is the premise of marketization. AI breaks through the limitations of traditional accounting methods through intelligent algorithms: firstly, multi-dimensional value evaluation: ecological value evaluation model is constructed based on deep learning algorithm, integrating economic value (such as forest product income), environmental value (such as carbon sequestration) and social value (such as landscape aesthetics). The ecological asset accounting system developed by Pingwu County in conjunction with Ant Group quantifies the water conservation and biodiversity protection values of giant panda habitat by analyzing 300,000 sets of environmental data, providing basis for carbon sink pledge financing; secondly, digital twinning and dynamic pricing: constructing digital twins of ecological resources to simulate value changes under different development schemes. Tianma "Digital Intelligence Shelter" in Lueyang County realizes 150% increase of output through temperature and humidity sensor and AI regulation system. The model generates dynamic price curve synchronously to guide farmers to choose opportunity for sales [8].

3.3 Innovative Mechanism of Trade and Circulation

As shown in Table 2, AI-driven trading platform reconstructs ecological product market rules to solve the problem of information asymmetry and high transaction costs: firstly, intelligent contract automatic execution: deploy intelligent contract on blockchain platform to automatically trigger trading conditions. The AI business model of "Yunshang Beichuan" in Beichuan County designs sub-accounting contracts for Qiang embroidery, tea and other ecological products, and producers, distributors and platform parties automatically distribute revenue according to preset proportions, and the dispute rate decreases by 60%; second, accurate matching of digital market: recommendation algorithm based on user portraits realizes accurate connection between ecological products and consumption demand. Guangxi Jinxiu Yao Autonomous County analyzes tourist preferences through AI cultural and tourism platform, pushes customized ecotourism routes, and the re-purchase rate will

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increase by 45% in 2024 [9].

Table 2: Technology adaptation matrix for digital transformation of ecological values

Technology Cluster	Core function	Typical application case	Value gain
Perception Network	Ecological data collection	Pingwu County Giant Panda Habitat Monitoring System	The monitoring cost has been reduced by 60%, and the data timeliness has been improved to the minute level
Blockchain	Asset ownership and traceability	Lueyang County Agricultural Products Blockchain Traceability System	Consumer trust has increased by 40%, and the premium margin has expanded by 30%
Intelligent algorithm	Value Accounting and Forecasting	Meitan County Tea Quality AI Evaluation Model	The accuracy rate of high-end tea selection has reached 95%, and the average price has increased by 25%
Digital Market	Supply and demand matching and transactions	Beichuan County AI Business Large Model	The efficiency of ecological product circulation has increased by 70%

4. Digital Path of Market-Oriented Transformation of Ecological Value

4.1 Industrial Intelligent Upgrading Path

Traditional characteristic industries realize value chain leap through AI whole process penetration, forming a positive cycle of "digital technology-industrial upgrading-value release": firstly, intelligent agriculture reconstructs production paradigm: Internet of Things sensors collect soil and meteorological data in real time, AI model optimizes planting decision. Guizhou Meitan County deployed thousands of sets of spectral analyzers in tea gardens, established fertilization decision model through deep learning algorithm, increased the output rate of high-end matcha raw materials by 35%, and drove tea farmers to increase income by 4000 yuan/year. Qingjian County, Shaanxi Province introduced the "AI Bean Plan" to train young people as artificial intelligence trainers, complete the image labeling of cash crops, promote the standardization and classification of jujube industry, and increase the high-quality fruit rate from 45% to 78%; the second is the digital immersion experience of cultural and tourism integration: VR/AR technology reproduces cultural heritage, and AI tour guides provide personalized explanation. Guangxi "Xiangzhou Dream Night" project through holographic projection and motion capture technology, interpretation of Yao yellow mud inspiration and other intangible cultural heritage, tourists stay time extended to 3.2 hours, secondary consumption accounted for 40%. Sichuan Beichuan County uses AI large model to generate Yuqiang culture digital story, combined with UAV light show to create "science and technology + culture" IP, the number of tourists will increase by 120% in 2024 [10].

4.2 Digital New Business Cultivation Path

Innovative applications based on ecological data give birth to platform economy and odd job economy, opening up new space for value transformation: first, ecological asset trading platform: digital platform connects decentralized resources and large-scale market. Pingwu County Ecological Large Data Center develops dynamic model of carbon sink reserves, accurately calculates forest and grass carbon reserves, and completes carbon sink pledge financing worth billions of yuan in Western Environmental Exchange. The tea carbon sink APP in Pu 'er City, Yunnan Province displays the carbon sequestration of tea gardens in real time. Consumers scan the code to purchase tea products with traceable carbon footprints, with a green premium of 25%; the second is the odd job economy to activate idle resources: the AI matching system revitalizes idle rural labor force and assets. The platform of "Didi Call Expert" in Lueyang County aggregates the technical demands of 152 villages. The technical task force receives orders online to solve technical problems such as gastrodia elata disease prevention and control. The farmer households pay only 1/3 of the offline service fee, and the average monthly income of the task force is 3000 yuan. This model has been extended to more than 200 counties in the west, forming a new profession of "digital technology broker" [11].

4.3 Regional Collaborative Development Path

Break county boundaries, build cross-regional digital ecosystem, and realize scale effect and resource sharing: firstly, cloud platform integration of industrial chain: collaborative platform on cloud optimizes regional industrial division of labor. The three counties in southern Shaanxi jointly built the "Qinba Medicine Cloud", aggregating resources such as Tianma in Lueyang, Huanglian in Zhenping and Cornus officinalis in Foping. AI model analyzed the price fluctuation of medicinal materials in the

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national market, guided planting plan and storage scheduling, and avoided overcapacity loss of more than 80 million yuan in 2024; second, enclave economy shared technology dividends: remote counties were connected to innovation networks in developed areas through "enclave parks". Beichuan County cooperates with Quzhou, Zhejiang Province to build an "enclave AI R & D center". Quzhou provides computing power and talent support, Beichuan provides cultural tourism and agricultural data, jointly develops county business models, and shares technical achievements between the two places [12].

5. Key Dimensions of Institutional Adaptability and Optimization Strategies

5.1 Policy Support System Innovation

To solve the contradiction of "technology first, system lag", it is necessary to construct incentive compatible policy combination: firstly, fiscal and taxation financial coordination: set up special fund for ecological digital transformation and innovate green financial instruments. Shaanxi gave 30% tax rebate to county AI projects; Sichuan pilot "data pledge loan", Dangshan pear farmers obtained bank loans with interest rate of 3.85% based on IoT planting data. The government is implementing key reforms to address ecological and digital challenges: The initiative will first advance a "carbon sink insurance + futures" model to mitigate price fluctuation risks for ecological products. Furthermore, the reform of land and data elements is a central component. A mixed-use land system will be established to enable the coexistence of digital infrastructure and ecologically protected land. The policy will also formally define the "three-rights separation" for data property, assigning ownership to the state, jurisdiction to local governments, and management rights to operating enterprises. Beichuan County distributes the benefits of the AI big model based on this. The government, enterprises, and data providers are divided into 1:4:5 [13].

5.2 Digital Governance Capacity Enhancement

The government is building an agile governance system for the AI era that balances innovation and regulation. Its initial focus is on supervising algorithms and formulating standards. To achieve this, it will establish an AI Ethics Committee tasked with preventing algorithmic bias in ethnic communities. Gannan Prefecture of Gansu Province adds cultural sensitivity detection module to Tibetan medicine recommendation system to avoid religious taboo conflict. The county government will establish an AI Application Safety Standard to standardize scenarios including Face Recognition and the cross-border transmission of ecological data.

The policy will champion a multi-stakeholder collaborative governance framework by promoting a model that unites government, enterprises, and civil society. Lueyang County E-commerce Industry College is jointly built by the government, universities and enterprises to cultivate compound talents who understand agriculture and master AI technology. The employment rate of graduates exceeds 80%. Jinxiu County, Guangxi Province has established the "Yao Culture Digital Protection Committee", and villagers participate in AI training data set labeling to ensure the cultural authenticity of digital reproduction.

5.3 Talent and Innovation Ecological Cultivation

Table 3: Institutional demand and innovation direction of AI enabling ecological value transformation in western counties

Institutional Dimension	Existing obstacles	Innovative Practice	Adaptability Enhancement Strategy
Policy system	Fragmented fiscal and tax support	Lueyang County's Government-Bank-Enterprise Joint Venture Technology Loan	Establish an AI ecological transformation special fund and implement green technology procurement
Digital Governance	Algorithmic Bias and Cultural Conflict	The algorithmic ethical framework for protecting the Yuqiang culture in Beichuan County	Establish a national cultural AI ethics committee and formulate scenario-based governance guidelines
Factor Market	Ambiguous definition of data ownership	Pingwu County's Ecological Data Asset Registration System	Promote the registration and confirmation of data assets, and develop an ecological data exchange center
Personnel mechanism	Severe skill mismatch	Qingjian County's "AI Bean Project" for Empowering Women	Vocational colleges incorporate AI courses and implement the "digital mentor" village-based program

As shown in Table 3, to solve the shortage of talents, it is necessary to go hand in hand with "local

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cultivation + flexible introduction": one is to reshape local skills: vocational colleges set up AI micro-majors to cultivate "digital new farmers". Yunnan Pu 'er City Tea College has set up the course of "AI Tea Maker" to teach intelligent irrigation system operation and tea quality algorithm evaluation; "AI Bean Plan" in Qingjian County trains women to become data annotators with part-time monthly income of 4000 yuan; second, Migratory Bird Engineer Plan: attracting short-term service of technical talents in eastern China. Kunshan pilot "weekend engineer", Shanghai AI expert remote guidance county enterprises; Lueyang County flexible introduction of Xi'an Jiaotong University team, joint research and development of Gastrodia elata intelligent planting system, research and development results intellectual property sharing [14].

6. Case Demonstration: Differentiated Practice in Three Counties in Western China

6.1 Lueyang County, Shaanxi Province: Mode of "Education Foundation Building-Talent Piloting-Innovation Explosion"

Lueyang County takes the integration of digital production and education as the core engine to construct a closed loop of ecological value transformation. Its core measures include: firstly, the E-commerce Industry College cultivates talents: the government coordinates colleges and universities, enterprises jointly build colleges, set up smart agriculture majors, students participate in the "AI+ Wuji" project, develop intelligent breeding decision-making system, reduce the mortality rate of Lueyang Wuji by 18% and increase the brand premium by 40%; Second, the scientific innovation platform gathers resources: 152 village science and technology missions are integrated into the digital platform of "slight scientific innovation," and farmers match the technical needs through "Didi Call Experts". In 2024, more than 200 difficult problems such as gastrodia elata disease prevention and control will be solved, 1100 farmers will be trained, and the technology transformation cycle will be shortened by 60%; thirdly, the efficiency of digital intelligence shelter will be improved: the "Tianma Digital Intelligence Shelter" developed by Xi'an Jiaotong University will control the temperature and humidity through AI, reducing the cost by 30% and increasing the yield by 150%. The AI trading system is supported by Tianma Trade Center in the central and western regions. In 2024, the transaction volume will exceed 120 million yuan, driving the income increase of growers by 35%. This model was rated as "National County Innovation Benchmark". The core experience lies in the integration of education chain, talent chain and industrial chain to solve the problem of lack of innovation elements in underdeveloped areas.

6.2 Pingwu County, Sichuan Province: Mode of "Digitalization of Ecological Assets-Carbon Finance-Inclusive Sharing"

Focusing on the protection of its giant panda habitats, Pingwu County is pioneering a path toward ecological capitalization through a three-stage strategy. First, to build a solid foundation, the county has established the world's first ecological asset accounting system for a giant panda habitat. Using drone patrols and infrared monitoring, it completed the digital confirmation of 12,000 square kilometers of ecological resources via blockchain, which has successfully reduced property rights disputes by 90%. Second, the county has leveraged this data for innovative carbon sink pledge financing. By developing a dynamic model for its ecological reserves to accurately calculate forest and grass carbon stocks, it completed a multi-billion yuan carbon sink pledge financing deal on the Western Environmental Exchange in 2024. These funds are being reinvested into ecological restoration and community dividends. Third, to ensure inclusive benefits and public engagement, Pingwu County launched the "Carbon Benefit Pingwu" mobile app. This platform allows residents to earn "ecological points" for activities like patrolling and tree planting, which can be exchanged for low-interest loans and daily necessities. This initiative has achieved a participation rate exceeding 75%, effectively fostering an endogenous culture of ecological protection. This model was listed by the United Nations Development Programme as a "biodiversity financial innovation case", highlighting the role of digital technology in realizing the value of ecological public goods [15].

6.3 Beichuan County, Sichuan Province: "Cultural IP+AI Big Model + Enclave Economy" Model

Beichuan County relies on Qiang cultural resources to create a new ecology of digital cultural consumption: First, the exclusive large model is strongly empowered: the first county AI business model in China "Yunshang Beichuan" is launched, and Yuqiang cultural data is deeply studied to provide intelligent support for cultural tourism promotion and agricultural product e-commerce. In the

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first month of model launch, 5000 customized marketing schemes were generated for 30 merchants, with conversion rate increased by 70%; second, cultural digital dual IP operation: AI generated Qiang embroidery patterns, digital Sharon dance and other IP, combined with drone performance to create immersive experience. In 2025, the "Qiangli New Year" activity attracted 460,000 tourists, and the sales of derivatives exceeded 100 million yuan; thirdly, the enclave R & D broke the bottleneck: jointly build an "enclave AI R & D center" in Quzhou, Zhejiang Province, Quzhou provides computing power and talents, Beichuan provides application scenarios, and the achievements are shared between the two places. The first phase of the project "Low Bandwidth AI Navigation System" solves weak signal pain points in mountainous areas. This model was selected into "Digital Economy Innovation Case of Sichuan Province", which verified the feasibility of cultural resource-based counties to realize characteristic breakthrough through AI.

7. Research Conclusions and Policy Recommendations

7.1 Core Conclusions

This study reveals the triple mechanism and institutional requirements of ecological value transformation in western counties: firstly, technology-driven mechanism: AI reconstructs ecological resource transformation chain through high-precision data collection (remote sensing + Internet of Things), intelligent value accounting (dynamic model + algorithm) and credible transaction guarantee (blockchain + intelligent contract), so as to solve the problems of difficult monitoring, pricing and transaction under traditional mode. Lueyang, Pingwu and other cases show that technology empowerment can increase the premium of ecological products by 25%-40%; second, the path innovation mechanism: "industrial intelligence"(such as smart agriculture),"format digitalization"(such as carbon sink platform),"regional synergy"(such as enclave economy) three paths need to be promoted in parallel. Beichuan experience shows that the combination of culture and tourism industry with AI large model can increase the number of tourists by more than 100%, but it needs supporting digital infrastructure and talent plan; thirdly, the system adaptation mechanism: policy incentive (fiscal and tax preference of more than 30%), governance reform (algorithm supervision + multi-governance), element reform (data property rights separation) constitute key support. The practice of Qingjian and Lueyang proves that the success rate of AI projects increases by 28% for every 10% increase in system adaptation.

7.2 Policy Suggestion

Based on our research conclusions, we propose a comprehensive four-dimensional policy framework designed to foster the classified development of Artificial Intelligence (AI) across diverse county types. This framework is guided by an overarching governance strategy and implemented through targeted actions in infrastructure, policy innovation, human capital, and differentiated local strategies.

Overarching Governance: To begin, a central government agency, such as the Ministry of Industry and Information Technology (MIIT), will collaborate with provincial authorities to formulate a county-level AI Enablement Index. This index will serve as a guiding tool to assess local readiness and direct tailored policy support.

The four dimensions of our proposed framework are as follows:

First, Digital Infrastructure and Application. Authorities will implement the "East Data West Computing" optimization project, deploying edge computing nodes in western counties (e.g., the Guizhou Meitan Tea Data Center). Our goal is to achieve 30% coverage at the municipal level by 2027. Relevant government departments will promote the adoption of low-bandwidth AI applications, such as the Beichuan offline navigation system, to overcome constraints from insufficient network coverage in remote areas.

Second, Policy and Institutional Innovation. The government will pilot "Ecological Digital Special Zones," granting them pioneering authority to reform data property rights. Regulatory bodies will establish a negative list management system, relaxing AI access restrictions for beneficial scenarios like ecological monitoring and digital cultural restoration. Local governments in western counties will set up dedicated AI innovation funds to provide risk compensation for the research and development of key technologies.

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Third, Human Capital Development. Human resources departments will launch the "Migratory Bird Engineer" plan, which will award professional title promotion bonus points to talents from eastern China who serve in the western region for two years. Vocational institutions will introduce "AI + Ecology" micro-majors, with the objective of training 100,000 "Digital New Farmers" by 2027.Project teams will replicate the successful "AI Bean Project" model, focusing on targeted skill development for women and youth groups in rural communities.

Fourth, Differentiated County-Level Strategies. Building on the foundation above, we will provide differentiated policy support based on each county's unique comparative advantages: For Ecological Advantage Counties (e.g., Pingwu): Local governments will focus on developing AI-driven carbon sink accounting and ecological asset securitization to leverage their natural capital. For Cultural Resource Counties (e.g., Beichuan): Local cultural departments and enterprises will prioritize the digitalization of cultural IP and the creation of immersive digital experiences to revitalize cultural heritage. For Agriculture-Leading Counties (e.g., Lueyang): County agricultural bureaus and leading enterprises will concentrate on deploying smart agriculture technologies and building robust, AI-powered agricultural product traceability systems. For Energy-Rich Counties: Local authorities, in partnership with energy companies, will explore AI-driven operations and maintenance for wind and solar power installations and advance the development of smart grids.

We recognize that the transformation of ecological value in western counties depends on a dual revolution in both technology and institutions. Ultimately, our goal is to construct an "ecological digital community" that deeply integrates the innovation, industry, and policy chains. This integrated approach is the key to achieving a green economic rise in the digital era while safeguarding our invaluable natural landscapes.

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