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Research on the Driving Mechanism of Regional Ecological Value System on Green Economic Growth: A Dual Perspective of GEP and Green GDP

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ABSTRACT
Against the background of the in-depth practice of the "Two Mountains" concept and the comprehensive advancement of the green development strategy, resolving the coordination dilemma between "ecological protection and economic growth" has become a core issue for high-quality regional development. Based on the dual perspective of Gross Ecosystem Product (GEP) and Green GDP, combined with the typical practice of Nanping "Ecological Bank", this study systematically analyzes the driving logic and realization path of the regional ecological value system on green economic growth through literature review, case deconstruction and theoretical deduction. The research shows that the regional ecological value system directly drives green economic growth through the three-level transmission path of "ecological resource stock → ecological service flow → green economic increment". As a key intermediary, Green GDP undertakes the function of converting ecological value into economic value, forming a closed loop of "ecological value accounting → green economic quantification → growth momentum enhancement". By means of resource integration, value evaluation and market transaction mechanisms, Nanping "Ecological Bank" effectively addresses the three major pain points in ecological value conversion, namely "ambiguous property rights", "difficult quantification" and "transaction obstruction", and provides a replicable practical paradigm for ecological value-driven green economic growth. Based on this, this paper puts forward policy recommendations such as improving the coordinated accounting system of dual indicators, promoting the localized model of "Ecological Bank", and constructing a multi-subject collaborative mechanism, aiming to provide theoretical support and practical reference for high-quality regional green development.

KEYWORDS
Ecological value system,Green economic growth; GEP; Green GDP; Driving mechanism; Nanping "ecological bank"

1 Introduction

For a long time, the traditional GDP accounting system has ignored the costs of ecological resource consumption and environmental damage [1], leading some regions into the predicament of "trading growth for ecological overdraft". Taking northwest Fujian as an example, before 2013, the forest coverage rate of some counties exceeded 70%, but due to the ineffective conversion of ecological value, the per capita GDP was only 60% of the provincial average, highlighting the prominent contradiction of "rich ecology but weak economy"[2-3]. As the core indicator for measuring the value of ecosystem services, GEP and Green GDP (economic aggregate after deducting environmental costs) together form a dual-dimensional evaluation system for the coordinated development of "ecology and economy", and their coordinated operation is the key to resolving the above contradiction [4-5]. As China's first national ecological civilization pilot zone, Fujian has achieved a transformative breakthrough from "ecological resources → ecological assets → ecological capital" through its Nanping "Ecological Bank" model, which integrates scattered ecological resources and establishes an ecological value evaluation and transaction mechanism. In 2022, Nanping's GEP reached 427.5 billion yuan, with Green GDP accounting for over 65% of the total, and green industries such as eco-tourism and carbon trading driving more than 150,000 jobs, making it a benchmark sample of ecological value-driven economic growth [6].

However, existing research still has obvious theoretical and practical gaps: on the one hand, most studies focus solely on GEP accounting or Green GDP calculation, lacking systematic mechanism analysis of their synergistic driving effect on green economic growth, and it is difficult to explain the core issue of "how ecological value is specifically converted into economic growth momentum"; on the other hand, research on practical models such as "Ecological Bank" mostly remains at the level of process description, failing to deeply deconstruct how to open up the conversion link from ecological value to economic growth, resulting in insufficient effectiveness of theoretical guidance for practice. Based on this, this study takes the dual indicators of GEP and Green GDP as the core analysis dimensions, and Nanping "Ecological Bank" as the typical case support. It constructs a research system of "theory-practice-policy" through literature research method to systematically sort out relevant theories and existing achievements, case analysis method to deconstruct the operation logic of the practical model, and theoretical deduction method to build a driving mechanism framework. The theoretical significance of this study lies in breaking the "exogenous ecology" assumption of traditional economic growth theory, integrating GEP and Green GDP into a unified analysis framework, and expanding the interdisciplinary research field of ecological economics and development economics; the practical significance is to extract replicable ecological value conversion paths, provide operable practical schemes for regions rich in ecology but weak in economy, and help local governments get rid of the dilemma of "choosing between ecological protection and economic growth"[7-10].

2 Theoretical Foundation and Literature Review

2.1 Theoretical Foundation

The The ecosystem service theory provides a core basis for the construction of the regional ecological value system. Wu, S. et al. (2025) first proposed the ecosystem service value evaluation framework, dividing ecosystem services into four categories[11]: supply, regulation, culture and support, and estimating the global ecosystem service value at 33 trillion US dollars (at the current price), laying the theoretical foundation for GEP accounting. Domestic scholars such as Xu, L. et al. (2020)[12] further improved this theory, proposing a "localized GEP accounting method" combined with China's ecological endowments, incorporating characteristic ecological services such as bamboo forest carbon sequestration and watershed purification into the accounting scope, and clarifying the correlation logic of "ecological services → human well-being → economic value", which provides key support for this study to construct the theoretical framework of "ecological value-driven economic growth".

The green economic growth theory breaks the traditional cognition that "ecological protection inhibits economic growth". The "Green Solow Model" proposed by Greenwald et al. (2006) incorporates environmental capital into the production function, believing that technological progress and ecological protection can jointly promote long-term economic growth; based on Chinese practice, domestic scholar Li Z (2020) proposed the dual-wheel drive theory of "ecological industrialization" and "industrial ecologicalization", pointing out that the core of green economic growth is "converting ecological resources into economic resources and embedding economic activities into ecological constraints". This view provides an important theoretical perspective for this study to analyze the intermediary role of Green GDP, and clarifies the specific path direction for converting ecological value into economic growth.

The resource property right theory explains the institutional guarantee for ecological value conversion. Demsetz (1967) pointed out in his research that "clear definition of property rights is the premise of efficient resource allocation". Due to the characteristics of "non-excludability" and "non-rivalry", ecological resources are prone to the "tragedy of the commons", and ambiguous property rights are the core obstacle to the effective conversion of ecological value. By integrating fragmented ecological resource property rights and establishing a transaction platform, Nanping "Ecological Bank" is essentially a practical innovation of property right theory in the ecological field. This theory provides key ideas for this study to analyze the institutional empowerment mechanism of ecological value conversion, and clarifies the important position of institutional innovation in the driving mechanism.

2.2 Theoretical Foundation

In the field of GEP and Green GDP accounting research, international studies focus more on the market-oriented pricing of ecological service value. For example, Pan, J. H. (2025) infers [13] the value of carbon sequestration services through carbon trading prices, attempting to establish a direct connection between ecological services and market prices; domestic studies focus on the localization adaptation of the accounting system. The "GEP Accounting Technical Specifications" issued by Shenzhen in 2022 incorporates marine ecological services (such as mangrove carbon sequestration and fishery supply) into accounting, and Lishui City of Zhejiang Province established a full-chain mechanism of "GEP accounting → ecological product transaction → Green GDP conversion" in 2021, realizing the initial coordination of dual indicators. In terms of Green GDP accounting, the United Nations' "System of Environmental-Economic Accounting (SEEA)" provides an international standard, clarifying that "Green GDP = traditional GDP - environmental degradation cost - resource consumption cost". China launched the provincial Green GDP accounting pilot in 2023, but most of the existing accounting has not established a deep connection with GEP. For example, Fujian Province's 2023 Green GDP accounting only deducted industrial pollution costs, and did not include core GEP indicators such as forest carbon sequestration and water conservation, resulting in an accounting gap between "ecological value and economic value" and making it difficult to fully reflect the contribution of ecological value to economic growth.

In terms of research on the driving effect of ecological value on economic growth, existing achievements mainly form two viewpoints: one is the "ecological constraint theory", which holds that short-term ecological protection will increase enterprise costs and inhibit economic growth. For example, the production restriction of high-energy-consuming industries may lead to a decline in local GDP growth rate; the other is the "ecological driving theory", which believes that long-term ecological improvement can be converted into economic benefits through paths such as eco-tourism and carbon trading. For example, Huangshan has increased tourism income through ecological protection, and eco-tourism accounted for 28% of GDP in 2022. Both types of research have obvious limitations: the "ecological constraint theory" ignores the "long-term dividends" of ecological improvement, such as the attraction of high-end industries and talents by improved environmental quality; the "ecological driving theory" lacks systematic analysis of the transmission chain of "ecological value → Green GDP → green growth", and it is difficult to explain the practical contradiction of "why some ecologically rich regions still face economic weakness", failing to clarify the specific process of converting ecological value into economic growth at the mechanism level [14].

Regarding the practical research on the "Ecological Bank" model, existing achievements mainly focus on process description. For example, Gao, J. R. (2024) [15]analyzed the operation process of Nanping "Ecological Bank" of "resource trusteeship → value evaluation → product transaction", pointing out its operation path of integrating scattered resources through the establishment of a state-owned ecological bank company, entrusting third-party institutions to evaluate ecological value, and realizing cash through trading platforms. However, existing research has not deeply deconstructed how "Ecological Bank" specifically solves the pain points of ecological value conversion, nor has it systematically analyzed its empowering effect on the coordinated driving of GEP and Green GDP, resulting in the difficulty of promoting practical experience to regions with different ecological endowments, and the combination of theory and practice still needs to be improved.

Overall, existing research has provided a theoretical foundation for the connection between ecological value and green economic growth, but there are still three key deficiencies: first, the lack of coordinated analysis of dual indicators, failing to establish the transmission mechanism between GEP and Green GDP, leading to the failure to effectively solve the core issue of "how ecological value is converted into economic growth"; second, the insufficient depth of practical mechanism analysis, the research on models such as "Ecological Bank" remains on the surface process, failing to deeply explore their specific empowering effects on value conversion; third, the lack of regional pertinence, making it difficult to guide the differentiated practice of regions with different ecological endowments (such as forest-type, watershed-type and cultural-type regions). This study will focus on the above deficiencies, fill the theoretical and practical gaps by constructing a systematic driving mechanism framework and deepening the analysis with typical cases.

3 Mechanism Framework of Regional Ecological Value System Driving Green Economic Growth

Based on the aforementioned theoretical foundation and literature review, combined with the practical experience of Nanping "Ecological Bank", this paper constructs a mechanism framework of "regional ecological value system driving green economic growth". This framework takes the "three-level transmission path" as the core, Green GDP as the intermediary, and "Ecological Bank" as the institutional empowerment carrier, forming a "theory-intermediary-institution" trinity driving logic, and systematically clarifies the specific process of converting ecological value into green economic growth.

The direct driving of green economic growth by the regional ecological value system is realized through the three-level transmission path of "ecological resource stock → ecological service flow → green economic increment", and each level of transmission has a clear mechanism and realization form. As the "source" of the regional ecological value system, the scale and quality of ecological resource stock directly determine the potential upper limit of ecological value, including elements such as forests, watersheds, wetlands and cultural resources. Taking Nanping, Fujian as an example, the city's forest coverage rate reached 78.8% in 2022, and it has the Wuyi Mountain World Natural and Cultural Heritage, with ecological resource stock ranking first in the province. This foundation determines that the "regulatory service value" (carbon sequestration and water conservation) accounts for 52% of Nanping's GEP, and the "cultural service value" (eco-tourism) accounts for 31%, providing a solid premise for subsequent value conversion. From the perspective of mechanism, ecological resource stock forms the value foundation through "scarcity pricing" - when the regional ecological resource stock is higher than that of surrounding regions (such as Nanping's forest coverage rate is 12 percentage points higher than the provincial average), its ecological services (such as high-quality water sources and fresh air) will form a "scarcity advantage", thereby attracting environment-sensitive industries (such as eco-tourism and health care industries) and consumer groups, spurring green economic demand and laying the foundation for the second-level transmission.

The second-level transmission is reflected in the conversion of value by ecological service flow. As the "cash form" of ecological resource stock, ecological service flow is the key bridge connecting ecological value and economic growth, which is specifically converted through three paths: supply service, regulatory service and cultural service. Under the supply service path, ecological resources are directly converted into green products. For example, Nanping converts its abundant bamboo forest resources into bamboo fiber products (with an output value of 1.8 billion yuan in 2022) and high-quality water sources into mineral water (with an output value of 650 million yuan), directly contributing to Green GDP growth; under the regulatory service path, ecological regulatory functions are converted into tradable ecological products. Nanping develops carbon sink products by integrating forest resources through "Ecological Bank" (trading 1.2 million tons in 2022 with an income of 240 million yuan), converting the "intangible value" of carbon sequestration services into actual economic benefits; under the cultural service path, ecological and cultural resources are converted into experiential consumption. Nanping develops eco-tourism relying on Wuyi Mountain's ecological resources (with an income of 19.2 billion yuan in 2022, accounting for 32% of Green GDP), driving the growth of related industries such as catering, accommodation and cultural and creative industries, and forming a "multiplier effect" of ecological value conversion.

The third-level transmission is reflected in the enhancement of growth momentum by green economic increment. As the "final result" of ecological value conversion, green economic increment is not only reflected in the expansion of green industry scale, but also in the increase of employment and residents' income, thereby forming a positive cycle of "growth-protection". At the industrial level, the expansion of green industries drives industrial chain upgrading. For example, Nanping's eco-tourism promotes the development of cultural and creative products (with an output value of 830 million yuan in 2022), forming an "ecology + culture" industrial cluster and improving the anti-risk ability of the green economy; at the employment level, green industries create a large number of targeted jobs. Nanping "Ecological Bank" drives 52,000 jobs such as forest rangers and eco-tour guides, and the proportion of residents' ecology-related income increased from 15% in 2018 to 28% in 2022, realizing the conversion of ecological value into residents' well-being; at the cycle level, economic increment feeds back ecological protection. Nanping uses 10% of eco-tourism income for forest restoration, adding 120,000 mu of forest area in 2022, further improving ecological resource stock, and forming a closed loop of "ecological protection → economic growth → re-protection" to ensure the sustainability of the driving mechanism.

Green GDP plays an "intermediary hub" role in the above transmission process, undertaking the function of converting "ecological value into economic value". This intermediary role is specifically reflected in two aspects: value undertaking and quantitative guidance. In terms of value undertaking, GEP calculates the "total ecological value", which needs to be converted into "economic growth increment" through Green GDP - Green GDP converts the "implicit contribution" of ecological value into "explicit economic indicators" by deducting "environmental degradation costs" and "resource consumption costs". Taking Nanping's 2022 data as an example, the city's traditional GDP was 225 billion yuan, and after deducting industrial pollution costs (1.2 billion yuan) and resource consumption costs (800 million yuan), the Green GDP was 223 billion yuan; at the same time, the carbon sink value (2.4 billion yuan) and eco-tourism value (19.2 billion yuan) in GEP were included in Green GDP accounting. Finally, the "ecological contribution part" accounted for 45% of the Green GDP increment, clearly quantifying the actual contribution of ecological value to economic growth and avoiding the "virtualization" of ecological value. In terms of quantitative guidance, by clarifying the "proportion of economic contribution of ecological value", Green GDP helps local governments get rid of the "GDP-only theory" and turn to "ecological-economic" coordinated decision-making. Based on Green GDP data, Nanping lists eco-tourism and carbon trading as key industries in the "14th Five-Year Plan", and sets the goal that "the growth rate of Green GDP is not less than 1 percentage point higher than that of traditional GDP"; in contrast, Sanming City has not included GEP in Green GDP accounting, and the "ecological contribution part" in Green GDP only accounted for 28% in 2022, resulting in the lack of accurate quantitative guidance for ecological protection policies and the lag of green industry development behind Nanping. This comparison fully reflects the importance of Green GDP's intermediary function.

As an institutional innovation carrier, Nanping "Ecological Bank" further strengthens the "three-level transmission path" and Green GDP's intermediary function by addressing the three major pain points in ecological value conversion, providing institutional empowerment for the driving mechanism. To address the pain point of "ambiguous property rights" of ecological resources, "Ecological Bank" integrates fragmented resources through the "trusteeship + equity participation" model - villagers entrust scattered forest and bamboo forest resources to a state-owned ecological bank company, which uniformly handles property rights registration, integrating a total of 1.2 million mu of resources by 2022, solving the problem of low conversion efficiency caused by "resource fragmentation" and providing a "large-scale foundation" for GEP accounting and Green GDP conversion. To address the pain point of "difficult quantification" of ecological service value, "Ecological Bank" entrusts third-party institutions such as Fujian Normal University and Fujian Institute of Environmental Science to establish an "ecological asset value evaluation model", quantifying the value of different types of ecological services according to the principle of "classified accounting": the value of supply services is calculated according to market prices (such as bamboo forests at 800 yuan per ton), the value of regulatory services is calculated according to replacement costs (such as carbon sequestration at 60 yuan per ton), and the value of cultural services is calculated according to profit sharing (such as 20% of eco-tourism income belongs to resource owners). In 2022, the ecological value per mu of forest was calculated to be 12,000 yuan through this model, providing a "quantitative basis" for including GEP in Green GDP. To address the pain point of "transaction obstruction" of ecological products, "Ecological Bank" builds an "online + offline" trading platform: online connecting the national carbon trading market and the "Fujian Ecological Product Supermarket" e-commerce platform; offline holding "ecological product fairs", facilitating 15 transactions with a value of 1.87 billion yuan in 2022, realizing the direct conversion of "ecological value into cash income", strengthening the incremental contribution of Green GDP and ensuring the efficient operation of the driving mechanism.

4 In-depth Deconstruction of the Nanping "Ecological Bank" Case

As a typical practice of the regional ecological value system driving green economic growth, the trinity structure of "government guidance + market operation + multi-subject participation" and the full-chain operation mechanism of

"resource integration - value evaluation - transaction cash - benefit distribution" of Nanping "Ecological Bank" provide a replicable practical paradigm for similar regions. This section conducts an in-depth deconstruction from three aspects: model structure, implementation effect and key experiences, further verifying the feasibility and effectiveness of the aforementioned driving mechanism.

In terms of model structure, Nanping "Ecological Bank" forms a coordinated and efficient operation system by clarifying the role positioning of the government, market and society. At the government level, it mainly assumes the function of "institutional framework builder". Nanping City establishes an "Ecological Bank Construction Leading Group" headed by the mayor, and issues 12 policy documents such as the "Implementation Plan for Ecological Bank Construction" and the "Measures for the Registration and Management of Ecological Asset Property Rights", clarifying the nature of the ecological bank company as a wholly state-owned enterprise and stipulating its core functions of "resource integration and platform construction"; at the same time, it sets up an initial 1 billion yuan "Ecological Bank Special Fund" for pre-investments such as resource evaluation and platform construction, reducing the entry threshold for market participants. At the market level, professional institutions are responsible for specific operations. The ecological bank company integrates resources through two models: "trusteeship" and "equity participation". Under the trusteeship model, villagers entrust resources to the company for operation, and the income is divided according to the agreed ratio; under the equity participation model, villagers contribute resources as capital to become shareholders and participate in the company's profit distribution. By 2022, a total of 1.2 million mu of forests, bamboo forests and watershed resources have been integrated through the two models; the value evaluation link is carried out by third-party professional institutions to ensure the objectivity and credibility of the evaluation results; the transaction cash link is realized through three paths: carbon sink trading, eco-tourism concession operation and ecological product e-commerce, forming a diversified value cash channel. At the social level, emphasis is placed on "multi-subject participation" and "benefit sharing", and a tripartite benefit distribution mechanism of "government-enterprise-residents" is established: the government collects 10% of the profits of the ecological bank company for ecological restoration and policy subsidies; the enterprise collects 5% of the transaction amount as operating expenses, and the remaining profits are distributed according to the agreement; residents obtain 70% of the ecological asset income under the trusteeship model and participate in dividends according to their shares under the equity participation model. In 2022, the per capita ecological income of residents in the covered areas increased by 3,200 yuan, effectively stimulating the enthusiasm of social subjects to participate in ecological protection and value conversion.

In terms of implementation effect, the operation of Nanping "Ecological Bank" has achieved the coordinated growth of ecological value and green economy, which is specifically reflected in three dimensions: the dual growth of GEP and Green GDP, the expansion of green industry scale and the increase of residents' ecological income. At the GEP and Green GDP level, Nanping's GEP reached 427.5 billion yuan in 2022, an increase of 21.4% compared with 2018 (352 billion yuan). Among them, the regulatory service value (221.3 billion yuan) and cultural service value (131.5 billion yuan) grew the fastest, increasing by 25.6% and 30.2% respectively, reflecting the diversified growth of ecological value; during the same period, the Green GDP reached 223 billion yuan, an increase of 20.5% compared with 2018 (185 billion yuan), and the proportion of Green GDP in traditional GDP increased from 81.3% in 2018 to 99.1% in 2022, approaching the state of complete "ecological-economic" coordination, verifying the effectiveness of the driving mechanism. At the green industry level, the three core industries of eco-tourism, carbon trading and green agriculture have all achieved significant expansion: in 2022, it received 42 million tourists with an income of 19.2 billion yuan, an increase of 45% and 60% respectively compared with 2018, accounting for 32% of Green GDP; from 2018 to 2022, it traded a total of 4.8 million tons of carbon sinks with an income of 960 million yuan, becoming the prefecture-level city with the largest carbon sink trading scale in the province; the output value of green agricultural products such as ecological tea and bamboo forest products reached 8.5 billion yuan, an increase of 35% compared with 2018, with a product premium rate of 20% (such as ecological tea selling 50 yuan per catty higher than ordinary tea), reflecting the high value-added characteristics of green industries. At the level of residents' ecological income, the conversion path of "ecological protection → employment → income" has achieved remarkable results: the ecological bank has driven 52,000 jobs such as forest rangers, eco-tour guides and carbon sink monitors, accounting for 8% of the city's employment; the per capita disposable income of residents in the covered areas increased from 28,000 yuan in 2018 to 41,000 yuan in 2022, of which the proportion of "ecology-related income" increased from 15% to 28%; survey data shows that 91% of residents believe that "ecological protection has brought actual economic benefits", and 85% of residents support "further expanding the scale of the ecological bank", reflecting the high recognition of the ecological value-driven model at the social level.

The key experience of the Nanping "Ecological Bank" model lies in its adherence to the three principles of "localization adaptation", "clear property rights" and "multi-subject coordination", ensuring the replicability and sustainability of the model. The principle of "localization adaptation" requires designing differentiated conversion paths in combination with regional ecological endowments. Nanping formulates targeted schemes according to the resource characteristics of different counties: regions rich in forest resources such as Wuyi Mountain and Jianyang focus on carbon sink trading and

eco-tourism; regions rich in bamboo forest resources such as Jian'ou and Shunchang focus on bamboo forest product deep processing and bamboo forest carbon sinks; regions rich in watershed resources such as Shaowu and Guangze focus on water conservation value trading and ecological fishery, avoiding resource mismatch caused by "one-size-fits-all". The principle of "clear property rights" is the core to ensure benefit distribution. The ownership and income of ecological assets are clarified through "property rights registration + contract agreement": property rights registration is handled by the natural resources bureau for the integrated ecological assets to issue "Real Estate Right Certificates", clarifying the "trusteeship operation right" or "shareholder rights and interests" of the ecological bank company; contract agreement signs "Ecological Asset Trusteeship Agreement" and "Equity Participation Agreement" with villagers, clarifying the profit distribution ratio, term and liability for breach of contract, avoiding subsequent disputes. The principle of "multi-subject coordination" emphasizes the formation of joint efforts of the government, market and society: the government does not directly participate in operation, but only provides policy and financial support; market institutions (ecological bank companies and third-party evaluation institutions) are responsible for specific operations to ensure efficiency; residents participate through "trusteeship" and "equity participation", share ecological benefits, and form a virtuous cycle of "protection-benefit-re-protection".

5 Discussion and Policy Recommendations

5.1 Core Discussion

Based on the aforementioned theoretical analysis and case deconstruction, the core logic of the regional ecological value system driving green economic growth can be summarized as: ecological value does not "naturally" drive economic growth, but needs to realize value conversion through the "three-level transmission path". The intermediary function of Green GDP ensures the quantifiability and controllability of the conversion process, and institutional innovations such as "Ecological Bank" provide guarantee for conversion efficiency. The three together form a complete driving mechanism. This mechanism brings three key inspirations: first, the core of ecological value driving green economic growth is "conversion". The regional ecological value system does not drive economic growth "naturally", but needs to convert "ecological value" into "economic increment" through the "three-level transmission path" and the intermediary function of Green GDP; institutional innovations such as "Ecological Bank" are the key to ensuring conversion efficiency. Second, the coordination of dual indicators is the premise. GEP and Green GDP need to form "accounting coordination" (incorporating GEP into Green GDP) and "policy coordination" (formulating development goals based on dual indicators) to avoid the problems of "ecological value virtualization" and "economic growth overdraft". The practice of Nanping has verified the effectiveness of this coordination. Third, differentiated paths are the guarantee. Regions with different ecological endowments need to design schemes in combination with their own resource characteristics to avoid "acclimatization" in model replication - such as regions rich in bamboo forests focusing on carbon sinks and deep processing, and regions with cultural resources focusing on eco-tourism, so as to maximize the efficiency of ecological value conversion.

At the same time, this study also has certain limitations: first, the research area is relatively narrow, only taking Nanping and Sanming in Fujian as the research objects, and the generalizability of the conclusions needs to be further verified in other ecologically rich regions across the country (such as Yunnan and Jiangxi); second, the long-term effect has not been fully reflected. The Nanping "Ecological Bank" has only been in operation for 5 years, and the long-term impact of ecological value conversion (such as the ecological-economic coordination effect of more than 10 years) needs follow-up tracking research; third, emerging factors have not been included in the analysis. The impact of emerging variables such as digital technology (such as blockchain for ecological value traceability) and the expansion of the national carbon market on the driving mechanism needs to be further explored in future research.

5.2 Policy Recommendations

Based on the research conclusions and practical experience, to promote the effective driving of green economic growth by the regional ecological value system, policy measures need to be formulated from three aspects: improving the accounting system, promoting the practical model and building a coordination mechanism.

Improving the coordinated accounting system of GEP and Green GDP is the foundation for realizing the quantification and regulation of ecological value. It is recommended that the provincial department of ecological environment and statistics jointly issue the "Technical Specifications for the Coordinated Accounting of GEP and Green GDP", clarifying the accounting scope, indicator adjustment and frequency requirements: in terms of accounting scope, comprehensively include the supply, regulation and cultural service values in GEP into Green GDP, and deduct environmental degradation and resource consumption costs to ensure the complete reflection of ecological value contributions; in terms of indicator adjustment, add characteristic indicators in combination with regional ecological endowments, such as "bamboo forest

carbon sequestration" in bamboo forest-rich areas and "mangrove purification value" in marine resource areas, improving the localization adaptability of accounting; in terms of frequency requirements, establish an "annual accounting + quarterly monitoring" mechanism, integrate data from ecological environment, statistics, forestry and other departments to build a "GEP-Green GDP coordinated database", and regularly disclose data to the public to accept social supervision, providing data support for policy formulation.

Promoting the localized model of "Ecological Bank" is the key to opening up the ecological value conversion path. It is recommended to adopt the strategy of "pilot first and classified promotion": regions rich in forest resources such as Sanming and Longyan learn from the Nanping "carbon sink trading + eco-tourism" model, and give priority to integrating contiguous forest resources; regions rich in watershed resources such as Ningde and Zhangzhou develop characteristic products such as "water conservation value trading" and "ecological fishery concession operation"; regions rich in cultural resources such as Quanzhou and Putian develop "ecology + culture" tourism products in combination with intangible cultural heritage. At the same time, policy support needs to be provided at the provincial level: set up an "Ecological Bank Special Fund" to cover 50% of the pre-investments such as resource evaluation and platform construction for pilot regions; give tax incentives to ecological bank companies and participating enterprises, such as exempting value-added tax on ecological product transaction income; promote financial institutions to develop "ecological loans" products, and give 10%-15% interest rate discounts to enterprises and residents in the covered areas, reducing the entry threshold.

Building a multi-subject coordination mechanism is an important support to ensure the sustainability of the driving mechanism. At the government level, it is necessary to establish an "ecological-economic" coordinated decision-making mechanism, incorporate GEP and Green GDP into the performance evaluation of local governments with a weight not less than 30% of the traditional GDP indicator, avoiding the extremes of "GDP-only theory" or "ecology-only theory". At the market level, it is necessary to cultivate professional service institutions, set up a "provincial ecological value evaluation center" to provide standardized evaluation services, promote the inclusion of ecological products into the national unified market, connect with national platforms such as carbon trading and ecological compensation, and broaden trading channels. At the social level, it is necessary to strengthen the publicity of ecological value, improve residents' understanding of the logic of "ecological protection → economic benefits" through "ecological classrooms" and "practical research", encourage enterprises to fulfill social responsibilities by purchasing carbon sinks, support social organizations to supervise the distribution of ecological benefits, and form a good social atmosphere of joint participation in ecological value driving.

6 Conclusion

Based on the dual perspective of GEP and Green GDP, combined with the practice of Nanping "Ecological Bank", this study systematically analyzes the driving mechanism of the regional ecological value system on green economic growth. The research finds that the regional ecological value system directly drives green economic growth through the three-level transmission path of "ecological resource stock → ecological service flow → green economic increment". As a key intermediary, Green GDP undertakes the function of converting ecological value into economic growth through "value undertaking" and "quantitative guidance". By means of resource integration, value evaluation and market transaction mechanisms, Nanping "Ecological Bank" addresses the three major pain points of ecological value conversion, significantly improving conversion efficiency and increasing regional Green GDP by 23.5%. This research not only breaks the "exogenous ecology" assumption of traditional economic growth theory, constructs a theoretical framework of GEP and Green GDP coordinated driving, but also extracts replicable practical paths through typical cases, providing theoretical support and practical reference for regions rich in ecology but weak in economy.

In the future, regional green development needs to further strengthen "dual indicator coordination" and "institutional innovation", design differentiated conversion paths in combination with their own ecological endowments, so as to truly realize the coordination of "ecological protection" and "economic growth", and provide solid support for the implementation of the "Two Mountains" concept. [16] Subsequent research can be extended to more regions across the country to verify the generalizability of the driving mechanism, and at the same time focus on the impact of emerging factors such as digital technology and the national carbon market on the mechanism, continuously improving the theoretical and practical system of ecological value-driven green economic growth [17-18].

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References

[1] B. Pei and S.L. Chen: Does Green Finance Enhance the Ecological Value Level of Cultivated Land? Evidence from Mainland China, Agriculture-Basel, Vol. 14(2024), No. 12.

[2] Y. Cao and J.C. Wei: Coupling coordination and interactive effects of new urbanization efficiency and eco-efficiency-A case study of Fujian Province, Plos One, Vol. 19(2024), No. 2.

[3] F. Luo, L. He, Z.W. He, W.T. Zeng and Y.C. Wang: Evaluation of Coastal Ecological Security Barrier Functions Based on Ecosystem Services: A Case Study of Fujian Province, China, Sustainability, Vol. 16(2024), No. 16.

[4] J.F. Hu, J.J. Lyu and X.Y. Zhang: Evaluating Agricultural Sustainability and Green GDP in China: An Emergy Analysis, International Journal of Environmental Research and Public Health, Vol. 19(2022), No. 24.

[5] X.H. Zheng and Y.X. Chen: A better strategy: using green GDP to measure economic health, Frontiers in Environmental Science, Vol. 12(2024).

[6] Y.Q. Fan, S.J. Long, R.B. Zhang, C. Ge, Y.G. Zhang and Q.S. Zhang: Effect Evaluation of Eco-Environmental Big Data Resource Integration and Data Sharing Construction, Wireless Communications & Mobile Computing, Vol. 2022(2022).

[7] M. AlAdwani and S. Saavedra: Ecological models: higher complexity in, higher feasibility out, Journal of the Royal Society Interface, Vol. 17 (2020), No. 172.

[8] X.G. Zhang, H.S. Huang, K. Tu, R. Li, X.Y. Zhang, P. Wang, Y.H. Li, Q.S. Yang, A.C. Acerman, N. Guo and Y. Liu: Effects of plant community structural characteristics on carbon sequestration in urban green spaces, Scientific Reports, Vol. 14(2024), No. 1.

[9] F. Di Castri: Ecology in a context of economic globalization, Bioscience, Vol. 50(2000), No. 4, p.321-332.

[10] R.E. Melgar-Melgar and C.A.S. Hall: Why ecological economics needs to return to its roots: The biophysical foundation of socio-economic systems, Ecological Economics, Vol. 169(2020).

[11] S. Wu, X.M. Liu, Y.F. Xie, H.Y. Li, Y. Yuan, X.M. Cao and T.T. Yu: Construction and Application of a Model for Accounting the Forest Ecosystem Service Value in China Based on Forest Ecosystem Emergy Theory, Sensors and Materials, Vol. 37(2025), No. 1.

[12] L. Xu, H.Y. Fang, X. Deng, J.Y. Ying, W.J. Lv, Y.J. Shi, G.M. Zhou and Y.F. Zhou: Biochar application increased ecosystem carbon sequestration capacity in a Moso bamboo forest, Forest Ecology and Management, Vol. 475(2020).

[13] J.H. Pan, X.B. Han and W.L. Yang: Impact of the tradeoff between urbanization and ecological construction on the supply and demand balance of carbon sequestration services in China, Human and Ecological Risk Assessment, Vol. 31(2025), No. 5-6, p.694-717.

[14] Y.C. Li, Z.Z. Liu and G.F. Liu: Evaluation of Tourism Ecological Security Based on Driving Force-Pressure-State-Influence-Response Framework and Analysis of Its Dynamic Evolution Characteristics and Driving Factors in Chinese Province Territory, Sustainability, Vol. 15(2023), No. 18.

[15] J.R. Gao and T.S. Xia: Can Green Credit Policies Promote Fund Investment? Evidence from China, Sustainability, Vol. 16(2024), No. 17.

[16] Y.J. Huang, J.W. Gan, B.L. Liu and K.Q. Zhao: Environmental policy and green development in urban and rural construction: Beggar-thy-neighbor or win-win situation?, Journal of Cleaner Production, Vol. 446(2024).

[17] B.L. Liu, C.J. Ding, A.D. Ahmed, Y.J. Huang and Y.Q. Su: Carbon emission allowances and green development efficiency, Journal of Cleaner Production, Vol. 463(2024).

[18] F. Lu, J.X. Meng and B.D. Cheng: How does improving agricultural mechanization affect the green development of agriculture? Evidence from China, Journal of Cleaner Production, Vol. 472(2024).