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# Research on the Impact Mechanism of Environmental Economics on Study Tour Education: Transnational Cases and Student Capacity Building

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## KEYWORDS

*Ecological Governance;  
Environmental Economics;  
Study Tour Education;  
Cross-Border Cases;  
Practical Path*

## ABSTRACT

Against the backdrop of ecological governance, this paper selects transnational ecological cases such as China's Saihanba Forest Farm, the Netherlands' Rotterdam Water Management System, the United States' Yellowstone National Park, and Brazil's Amazon Rainforest protection. It constructs a practical path for environmental economics study-tour education, which follows the sequence of "identification of ecological issues - analysis of economic mechanisms - deduction of governance schemes - mutual learning from international experiences". The research shows that this path enables students to deeply understand the application of theories such as externality theory and public goods theory in ecological governance. Students participating in the study tour have significantly improved their abilities in aspects like ecological and economic policy evaluation and environmental cost accounting. Through comparing ecological governance models in different countries and regions, the core elements of environmental economics study-tour education are extracted, providing new ideas for cultivating economics talents with a global ecological perspective and practical capabilities.

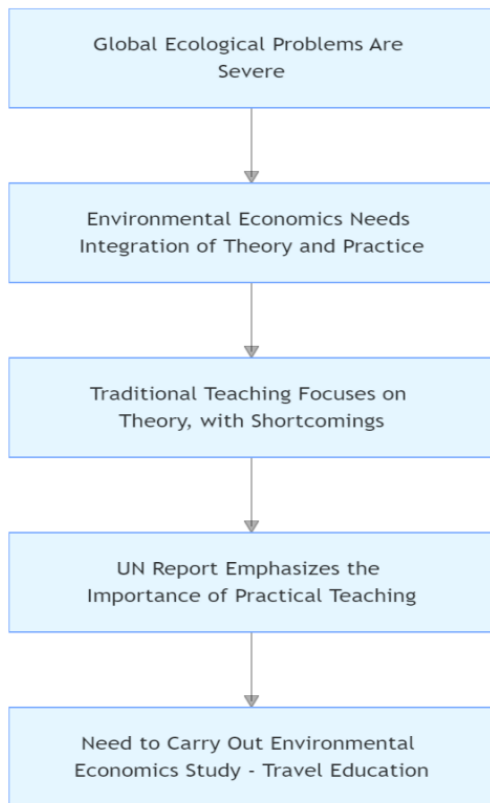
## INTRODUCTION

Currently, global ecological and environmental issues are becoming increasingly severe. Challenges such as climate change, biodiversity loss, and resource shortages continue to emerge, making ecological governance a key issue of common concern for all countries. As a discipline studying the relationship between ecological environment and economic development, environmental economics attaches particular importance to the integration of theory and practice. However, traditional environmental economics education focuses

more on theoretical teaching, resulting in students' lack of in-depth understanding of actual ecological governance scenarios and difficulty in transforming theoretical knowledge into abilities to solve practical problems.

Surveys indicate that 75% of students majoring in environmental economics report a lack of intuitive understanding of the operation of economic mechanisms in ecological governance, and 68% of teachers believe that the existing teaching model is ineffective in cultivating students' abilities in ecological and economic analysis and decision-making. Under such circumstances, carrying out environmental economics study-tour edu-

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**Figure 1 | The Logical Flowchart of Implementing Environmental Economics Study - Travel Education**

cation to allow students to enter real ecological governance sites has become an important way to make up for this deficiency. The United Nations Environment Programme also emphasized in its 2023 Outlook on Environmental Education that the proportion of practical teaching in environmental economics education should be increased to cultivate students' comprehensive literacy<sup>[1]</sup> (Figure 1).

## CONSTRUCTION OF PRACTICAL PATHS FOR ENVIRONMENTAL ECONOMICS STUDY-TOUR EDUCATION

Each link in the practical path of environmental economics study-tour education is closely connected with the cultivation of students' abilities, and promotes the transformation of students' theoretical knowledge into practical skills through progressive practice.

### Identification of Ecological Issues: Approaching the Field to Perceive Ecological-Economic Contradictions

Students are organized to delve into diverse ecological governance regions. Through on-site observations and exchanges with local residents and managers, they identify specific ecological problems and the underlying economic contradictions. At Saihanba Forest Farm,

students can intuitively perceive the relationship between forest resource protection and local economic development, and understand the economic challenges such as capital investment and industrial transformation faced by the forest farm during ecological restoration. In the Amazon Rainforest, they can detect conflicts between rainforest protection and local agricultural development as well as logging activities, gaining awareness of the complex economic interest entanglements behind ecological conservation.

When students go deep into ecological governance sites such as Saihanba Forest Farm and the Amazon Rainforest, on-site observation and communication with local residents and managers are not only a process of identifying ecological problems, but also a practical training to improve their field investigation ability and problem perception ability.

In Saihanba, students need to observe the distribution of forest resources, record the types of local industries, and even track the income changes of residents in different periods. This process requires them to master the methods of information collection (such as designing simple interview outlines, sorting out field notes), and learn to screen key information from complex phenomena. For example, when finding that "the expansion of forest area has led to a decrease in local agricultural land", students need to further think: Is this a contradiction between ecological protection and economic development? Or is it a temporary pain caused by industrial transformation? This kind of thinking promotes the transformation of their perception from "seeing phenomena" to "grasping the essence of contradictions", and lays a foundation for cultivating their sensitivity to ecological and economic issues.

### Analysis of Economic Mechanisms: Applying Theories To Unpack the Internal Logic of Ecological Governance

Building on the identified ecological issues, students are guided to apply theoretical knowledge of environmental economics to analyze the economic mechanisms in ecological governance. For instance, during the study tour of Rotterdam's water management system in the Netherlands, students can use the theory of externalities to analyze the positive externalities brought by urban flood control infrastructure, and explore how to adopt economic means to make beneficiaries bear corresponding costs<sup>[2]</sup>. At Yellowstone National Park in the United States, they can draw on the theory of public goods to examine the park's management and operation models, analyzing the role of economic tools such as ticket pricing and concessionary operations in park protection and utilization<sup>[3]</sup>.

The process of applying environmental economics theories to analyze ecological governance mechanisms is a key link to enhance students' theoretical application ability and logical reasoning ability.

Taking the study tour of Rotterdam's water management system as an example, students need to apply the externality theory to analyze the "positive externalities of flood control facilities"—how the construction of dikes and drainage systems not only protects local residents' property, but also ensures the normal operation of enterprises. To answer this question, students must first recall the core of externality theory (the impact of one's behavior on others that is not reflected in market prices), then sort out the stakeholders of Rotterdam's water system (government, residents, enterprises, etc. ), and finally deduce the logical chain of "facility input → risk reduction → social benefit increase". This process forces students to connect abstract theories with specific scenarios, and avoids the dilemma of "knowing the theory but not using it".

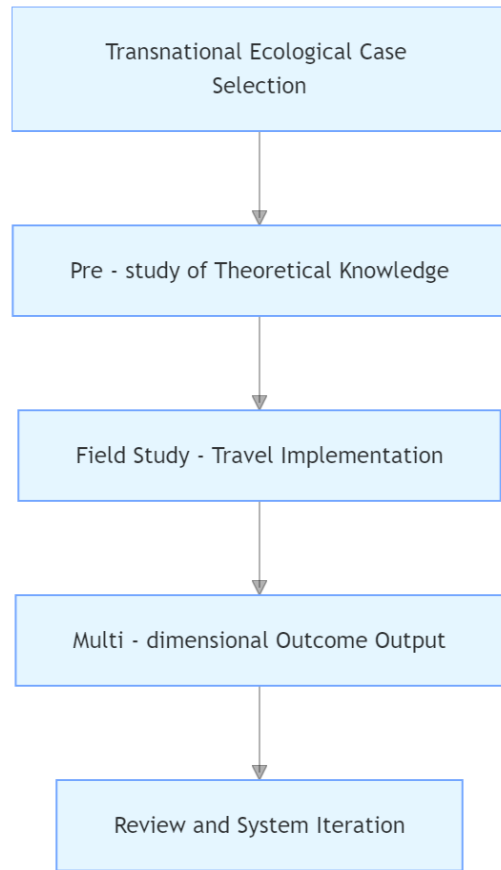
Similarly, in the analysis of Yellowstone National Park's management model with the theory of public goods, students need to distinguish "non-excludability" and "non-rivalry" in practice: Why can't the park be completely managed by the market? How to balance "free access" and "maintenance costs" through ticket pricing? Such thinking trains them to use theoretical frameworks to deconstruct practical problems, and improves their ability to reason and demonstrate with logic.

**Deduction of Governance Schemes: Designing Eco-Economic Solutions Based on Reality**

Based on the analysis of ecological issues and economic mechanisms, students are encouraged to deduce and design feasible economic schemes for ecological governance in combination with local realities. For the sustainable development of Saihanba Forest Farm, they can draw on the theory of ecological compensation to design schemes such as forest carbon sink trading and ecotourism development, balancing ecological protection and economic benefits<sup>[4]</sup>. For Amazon Rainforest protection, students can refer to tools like eco-labeling systems and green finance to propose solutions that both protect the rainforest and ensure local residents' economic income<sup>[5]</sup>. Designing feasible ecological economic schemes based on local reality is a comprehensive test of students' innovative design ability and system planning ability.

When students design forest carbon sink trading schemes for Saihanba, they cannot simply copy the existing models. They need to consider the particularity of Saihanba: the forest age structure, the regional carbon market policy, and even the acceptance of local enterprises and residents for carbon trading. This requires them to break the fixed thinking, combine the theory of ecological compensation with local characteristics, and put forward innovative solutions (such as linking carbon sink trading with ecotourism to attract more social capital).

In the Amazon Rainforest protection scheme, students need to balance the interests of multiple subjects:



**Figure 2 | Implementation Process Flowchart of Study - Travel Mode Driven by Transnational Ecological Cases**

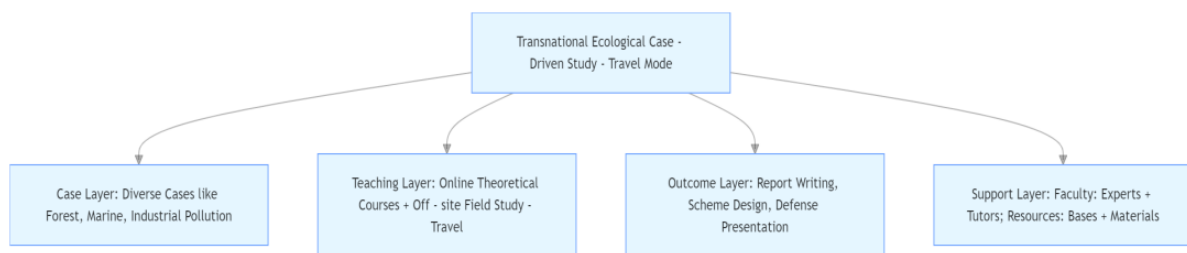
How to ensure that local residents do not rely on logging for income? How to make green finance truly flow to rainforest protection? This process requires them to establish a systematic thinking—any scheme must take into account ecological benefits, economic feasibility and social acceptance. It is in this kind of "problem-solving" practice that students' ability to integrate multi-dimensional factors for planning is continuously polished.

**Mutual Learning From International Experiences: Comparing Models to Extract Universal Laws**

Through study tours of ecological governance cases in different countries and regions, students are guided to conduct international comparisons, analyze the advantages, disadvantages, and applicable conditions of different governance models, and extract universal laws of eco-economic governance. By comparing the government-led model of Saihanba Forest Farm with the diversified management model of Yellowstone National Park, students can recognize the differences in ecological governance economic mechanisms under varying institutional contexts. Contrasting Rotterdam's market-oriented water management measures with administra-

**Table 1 | Comparison Table of Research Focus in Different Transnational Ecological Cases**

Types of Transnational Ecological Cases	Typical Cases (e. g. , Countries/Regions)	Research Focus in Environmental Economics
Forest Ecological Restoration	Black Forest Ecological Governance Project in Germany	Economic Value Accounting of Forest Resources, Practice of Ecological Compensation Mechanisms
Marine Ecological Protection	Great Barrier Reef Protection Project in Australia	Balance between Marine Ecotourism Economy and Environmental Protection, Research on Marine Carbon Sink Economy
Industrial Pollution Treatment	Industrial Brownfield Restoration in Flanders, Belgium	Cost - Benefit Analysis of Pollution Treatment, Economic Path of Green Industrial Transformation



**Figure 3 | Ransnational Ecological Case - Driven Study - Travel Mode Decomposition Chart**

tive regulation methods in other regions helps them understand the effectiveness of different economic tools in ecological governance<sup>[6]</sup>. Designing feasible ecological economic schemes based on local reality is a comprehensive test of students' innovative design ability and system planning ability.

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### STUDY-TOUR PRACTICE ANALYSIS OF TRANSNATIONAL ECOLOGICAL CASES

The specific case study tour further refines the cultivation of students' abilities, and enables the improvement of abilities to correspond to specific ecological and economic scenarios.

#### China's Saihanba Forest Farm: Collaborative Study on Ecological Restoration and Economic Transformation

Saihanba Forest Farm has transformed from a desertified sandy land into a green sea of forests, and its successful ecological governance embodies rich economic logic. During the study tour, students can learn about the economic measures adopted by the forest farm at different development stages: large-scale afforestation through state investment in the early stage, achieving self-sufficiency by developing forestry industries in the middle stage, and realizing a win-win situation for both ecology and economy through new formats such as ecotourism and carbon sink trading in the later stage. By applying cost-benefit analysis, students evaluate the relationship between economic input and ecological benefits at different stages, gaining a deep understanding of the accumulation process of ecological capital and the transformation mechanism of economic value<sup>[7]</sup>.

In the study of Saihanba's "ecological restoration + economic transformation" process, students need to sort out the economic input (such as afforestation funds, scientific research investment) and ecological benefits (such as forest coverage rate, carbon sequestration capacity) at different stages, and conduct cost-benefit analysis. This process requires them to master basic data processing methods (such as calculating the internal rate of return of ecological investment), and thus improves their data analysis ability.

More importantly, by observing the "desert → forest → ecological economy" transformation spanning decades, students will realize that ecological governance is a long-term process. When evaluating the effectiveness of economic measures, they must get rid of the short-sightedness of "immediate interests" and learn to judge the long-term value of ecological capital—this is the cultivation of long-term thinking ability.

### **The Netherlands' Rotterdam Water Management System: Study on Economic Governance of Urban Ecological Security**

As a key city in a low-lying country, Rotterdam faces severe flood control pressure, and its water management system serves as a model for urban ecological security governance. During the study tour, students focus on examining the economic operation mode of the system, including financing methods for flood control infrastructure construction, water resource pricing mechanisms, and water disaster insurance systems. Through analysis, students recognize the role of market mechanisms in water resource allocation and disaster risk sharing, while also understanding the indispensability of the government in public goods supply and supervision, deepening their understanding of the application of the government-market relationship in ecological governance<sup>[8]</sup>.

Rotterdam's water management system, which combines government supervision and market mechanisms, provides a typical case for students to understand the "government-market relationship" in ecological governance. When analyzing the financing mode of flood control infrastructure (such as public-private partnership) and the water resource pricing mechanism, students need to distinguish the boundaries of government functions (such as public goods supply, supervision) and market roles (such as efficient resource allocation).

For example, when discussing "why the government must participate in the construction of dikes", students will realize that flood control has strong public goods attributes, and the market cannot provide it efficiently; while "water pricing" can be regulated by the market to promote residents' water conservation. This kind of analysis strengthens their ability to coordinate the relationship between government and market, and enables them to better understand the applicability of different economic tools in practice

### **U. S. Yellowstone National Park: Study on Balancing Ecological Protection and Tourism Development**

Yellowstone National Park, the world's first national park, has accumulated rich experience in balancing ecological protection and tourism development. During the study tour, students can analyze how the park's ticket pricing strategy affects tourist numbers and the raising of protection funds, and explore how the concession system ensures the quality of tourism services while avoiding excessive commercialization from damaging the ecology. By applying the theory of public resource governance, students can put forward economic suggestions for optimizing park management, such as dynamically adjusting ticket prices and improving the access mechanism for concessions<sup>[9]</sup>.

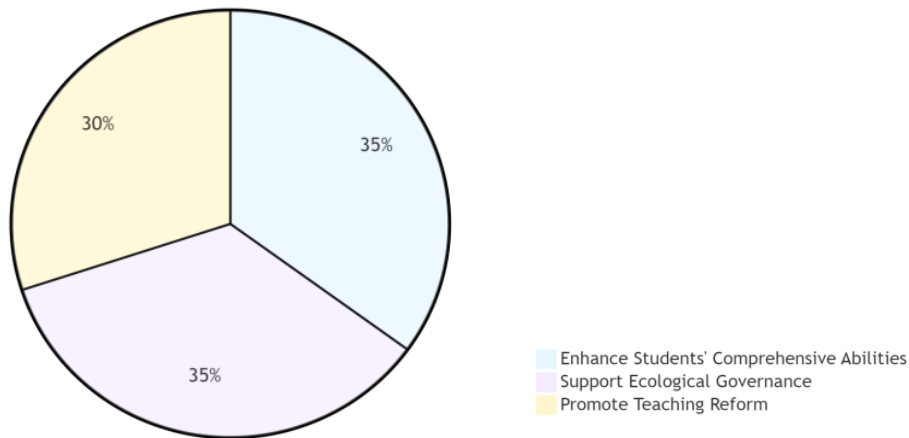
The balance between ecological protection and tourism development in Yellowstone National Park tests students' market operation ability and ecological balance ability. When analyzing the park's ticket pricing strategy, students need to consider: How to set prices to ensure that the number of tourists does not exceed the ecological carrying capacity, while ensuring sufficient funds for protection? This involves the application of "price elasticity theory" in practice—if the price is too high, it will reduce public access to public resources; if it is too low, it will lead to over-tourism.

In addition, the study of the concession system (such as the qualification review of catering and accommodation operators) requires students to think: How to avoid excessive commercialization while ensuring service quality? This kind of thinking promotes them to form a "double-line awareness"—both consider the efficiency of market operation, and adhere to the bottom line of ecological protection.

### **Brazil's Amazon Rainforest: Study on Coordinating Ecological Protection and Community Development**

The protection of the Amazon Rainforest is related to global ecological security and is also closely linked to the economic development of local communities. During the study tour, students can learn about the economic incentive measures taken by the Brazilian government and international organizations to protect the rainforest, such as providing financial subsidies to communities that perform well in rainforest protection and promoting sustainable agriculture. Using game theory, students analyze the relationships between different stakeholders such as local residents, enterprises, and the government, and consider how to coordinate the interests of all parties through institutional design to achieve long-term win-win results between rainforest protection and community development<sup>[10]</sup>.

The protection of the Amazon Rainforest involves multiple stakeholders such as local residents, logging enterprises, the Brazilian government, and international



**Figure 4 | Proportion of Core Values in Environmental Economics Study - Travel Education**

organizations. Using game theory to analyze their interest demands is a key way to improve students' stakeholder analysis ability and interest coordination ability.

For example, when students find that "local residents rely on logging for a living", they need to think: What are the alternative livelihoods (such as sustainable agriculture, ecological forestry)? How to use economic incentives (such as ecological subsidies) to encourage residents to abandon logging? In this process, students must put themselves in the shoes of different subjects—understand the survival pressure of residents, the profit demands of enterprises, and the policy goals of the government—and then design a scheme that balances all parties' interests. This kind of practice enables them to get rid of one-sided thinking and learn to solve complex ecological problems from a multi-dimensional perspective.

## VALUES AND INSIGHTS OF ENVIRONMENTAL ECONOMICS STUDY-TOUR EDUCATION

### Enhancing Students' Comprehensive Abilities

Environmental economics study-tour education takes students out of the classroom, allowing them to apply theoretical knowledge to solve practical problems in real ecological governance scenarios. This effectively improves their observation, analysis, and innovation abilities. Students participating in the study tour can gain a deeper understanding of the practical significance of environmental economics theories, learn to think about ecological issues from an economic perspective, and develop systematic thinking and interdisciplinary analysis capabilities.

The study-tour education model systematically improves students' abilities from multiple dimensions, forming a "ability system" integrating theory and practice:

- 1) **Basic practical abilities:** Including field investigation, data collection and sorting, and interview communication, which are trained in the link of "ecological problem identification".
- 2) **Theoretical application abilities:** Such as using externality theory and public.

### Promoting Reform in Environmental Economics Teaching

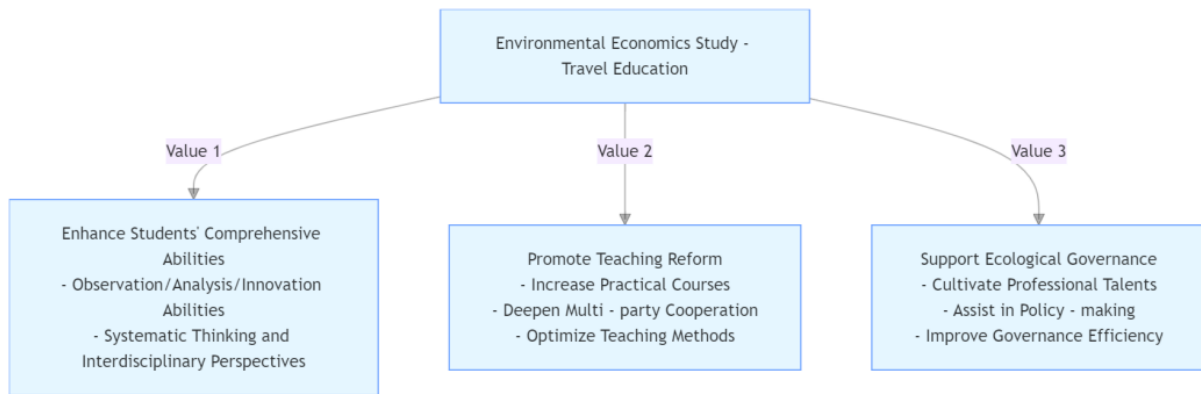
This study-tour education model provides a direction for reform in environmental economics teaching, prompting universities to adjust curriculum settings, increase practical teaching links, strengthen cooperation with ecological governance institutions and international organizations, and build a more complete practical teaching system. At the same time, it can also drive teachers to improve teaching methods, pay more attention to integrating theory with practice, and enhance teaching quality.

### Providing Talent Support for Ecological Governance

Through environmental economics study-tour education, a group of professionals with solid theoretical foundations and rich practical experience are cultivated. They can provide professional support for the formulation of ecological governance policies and the evaluation of eco-economic projects, promote the scientization and efficiency of ecological governance work, and contribute to the improvement of the global ecological environment.

## CONCLUSION

In summary, against the backdrop of ecological governance, this study constructs a practical path for environmental economics study-tour education featuring "identification of ecological issues - analysis of econom-



**Figure 5 | Values of Environmental Economics Study - Travel Education**

ic mechanisms - deduction of governance schemes - mutual learning from international experiences". Through an analysis of transnational ecological cases, including China's Saihanba Forest Farm, the Netherlands' Rotterdam Water Management System, the United States' Yellowstone National Park, and Brazil's Amazon Rainforest, it is confirmed that this path can effectively help students deeply understand the application of theories such as externality theory and public goods theory in ecological governance. It significantly enhances their abilities in ecological and economic policy evaluation, environmental cost accounting, and other aspects. Meanwhile, the core elements of environmental economics study-tour education are extracted, providing new ideas for cultivating economics talents with a global ecological perspective and practical capabilities, as well as valuable references for the reform of environmental economics teaching and the cultivation of talents for ecological governance.

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