

## Payment for Forest Environmental Services and the Role of Environmental Law

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### Abstract

Payment for Forest Environmental Services (PFES) is an economic instrument applied in the forestry sector to establish a benefit-sharing mechanism between providers and users of forest environmental services. This article employs methods of analysis and synthesis to examine and clarify the role of environmental law in the implementation of PFES. In addition, it combines other scientific research methods, including methodological approaches and data collection techniques, to identify and assess current limitations in Vietnam's environmental legal framework governing PFES. The study finds that, while PFES law plays an important role in regulating stakeholder relationships, promoting sustainable forest management, and supporting climate change mitigation, existing legal provisions remain incomplete, inconsistent, and lacking in enforceability. Based on these findings, the article proposes several recommendations aimed at ensuring and strengthening the role of environmental law in PFES implementation in practice, particularly through improving legal coherence, enhancing state management mechanisms, ensuring fairness in benefit-sharing, and supporting the development of carbon markets and international cooperation frameworks.

**Keywords:** Forest environmental services, payment for forest environmental services, environmental law

### Introduction

Forest environmental services (FES) are services that the forest environment can provide to meet the usage demands of specific stakeholders. Natural ecosystems including the forest environment are recognized as goods with use value because they satisfy the buyers' (those who benefit from FES) requirements concerning quantity and quality. However, types of FES are considered special goods due to the communal nature of forest resources, which are shared, exploited, utilized, and impacted by

multiple stakeholders. These stakeholders are required to pay when engaging in activities that exploit or use components of the forest environment (payments made to acquire rights to exploit, use, or affect forest resources). The beneficiaries of this payment mechanism include the State, FES providers, and the broader community. Among them, the State acts as the representative authority responsible for regulating the payment levels and allocating funds to continue protecting and reinvesting in the use values of forest resources.

Accordingly, Payment for Forest Environmental Services (PFES) can be understood as the relationship whereby the service users pay the service providers through payment mechanisms prescribed by law. In this context, the service providers are those who are willing (or obligated) to produce goods and forest environmental services through forest environmental management activities; while the service users are those who are willing (or obligated) to pay for the benefits derived from receiving these goods and forest environmental services.

From the perspective of environmental protection, PFES plays a crucial role in ensuring sustainable development and building a circular economy with reduced emissions, specifically:

*To begin with, PFES contributes to the effective achievement of sustainable development goals.*

*Firstly, from an economic perspective.* PFES generates a stable source of income for forest owners and communities dependent on the forest. This income is not solely based on timber harvesting or nontimber forest products but also through the provision of forest environmental services such as water regulation, soil protection, carbon sequestration and storage, biodiversity conservation, and ecological landscape preservation. Consequently, PFES contributes to diversifying economic benefits derived from forests, creating stable and long-term livelihoods for forest owners, and ensuring the enjoyment of lawful social welfare rights and benefits for forest workers. At the same time, PFES emphasizes cost savings and enhancing expenditure efficiency, encouraging greater innovation and improvement in environmentally and community friendly production and business technologies, thereby increasing the efficiency of forest resource exploitation and utilization (Nguyen Thi Huyen, Nguyen Trang Linh, 2025).

*Secondly, from an environmental perspective.* PFES directly links the economic benefits derived from forest resources with the responsibility of forest owners to protect and develop these resources. It also obliges the beneficiaries of forest environmental services to bear corresponding financial responsibilities for forest environmental protection, thereby addressing the issue of “free riding” on forest resource services. Consequently, PFES contributes to enhancing the forest’s capacity for carbon sequestration and storage, reducing greenhouse gas emissions, and supporting and promoting Vietnam’s successful fulfillment of international commitments and national strategic orientations on climate change and circular economy development in the current period.

*Thirdly, from a social perspective.* Considering the quality of the community’s living environment, PFES goes beyond the goal of protecting forests as a purely natural resource and aims to ensure and improve environmental welfare for people. By establishing a stable financial mechanism for forest protection and development

activities, PFES helps maintain the ecological functions of forests, which are the direct foundation of the quality of the living environment, especially for communities that heavily depend on forest ecosystems.

*In addition, PFES ensures the harmonious resolution of the relationship between the State and organizations or individuals regarding the protection, exploitation, and use of forest resources.* Through legal regulatory mechanisms, the State both guarantees ownership rights over forest resources and acknowledges and protects the legitimate interests of forest owners, local communities, and entities assigned to manage forests. This “harmony” is reflected in the transformation of a purely administrative command relationship into one characterized by legally formalized benefit exchanges, thereby reducing conflicts between conservation requirements and economic exploitation needs, linking forest protection responsibilities with concrete economic incentives, and simultaneously alleviating the State budget burden in the execution of management functions.

*Furthermore, payment for forest environmental services plays an important role in addressing both theoretical and practical limitations in the exploitation and use of forest resources.* Unlike conventional tangible goods, forest environmental services (FES) have the characteristics of public goods, particularly non-rivalry in consumption and non-excludability (Laura Razzolini, 2003). Because of these features, FES cannot be efficiently provided through free market mechanisms without State intervention. In traditional economic systems, markets mainly recognize and price tangible forest products such as timber and non-timber products. In contrast, the ecological benefits of FES are not fully reflected in market prices. As a result, forest owners and managers do not receive adequate compensation for maintaining forest ecosystem functions, while other actors benefit from these services without payment. This imbalance leads to market failure, as social costs and benefits are not fully incorporated into individual decision-making. It also reinforces the situation of “socialized costs and privatized benefits,” as explained in Pigou’s theory of negative externalities (Arthur Cecil Pigou, 1920). In this context, PFES serves as a corrective economic and legal instrument that helps internalize these externalities. By assigning economic value to forest environmental services and requiring beneficiaries to pay, PFES aligns private incentives with social interests. It also creates a stable financial mechanism for forest protection and development. As a result, PFES not only reduces market failure but also improves resource allocation efficiency, strengthens stakeholder accountability, and supports the sustainable management of forest resources.

Moreover, practical experience has shown that under traditional conditions, activities related to the exploitation, use, protection, and development of forest resources have primarily relied on funding from the State budget or short-term support programs. This financial shortfall creates an obstacle in implementation, where the legal obligation to protect and develop forests is established, but the economic incentives to fulfill this obligation remain insufficient. As a result, the motivation of economic actors to protect and enhance the value and ecological functions of forest resources for providing high quality forest environmental services is diminished. In response to this reality, PFES has been established as an economic instrument in the forestry sector to address shortcomings in mobilizing and utilizing financial resources for the protection, exploitation, use, and development of forest resources, by creating a reciprocal

relationship between the providers and users of forest environmental services.

Given its particularly important role in achieving climate change mitigation and building a circular, low emission economy, the implementation of PFES must be carried out in a synchronized, unified, and effective manner through the combined use of various management tools, with a special emphasis on the role of the law. However, current legislation on payment for forest environmental services still has many limitations, resulting in the role of the law in this area not being effectively ensured.

### **Research Methodology**

This article employs a doctrinal legal research approach as its primary method, combined with policy analysis and qualitative data review, to examine the role of environmental law in the implementation of Payment for Forest Environmental Services (PFES) in Vietnam.

The doctrinal method is used to analyze and interpret the content, structure, and normative functions of existing legal provisions governing PFES. The study focuses on key legal documents, including the 2017 Forestry Law, Decree No. 156/2018/ND-CP (as amended by Decree No. 91/2024/ND-CP), and relevant environmental and climate-related regulations. These sources are selected based on their direct relevance to PFES governance and their role within Vietnam's environmental legal framework.

In addition, the article applies methods of analysis and synthesis to systematize theoretical foundations related to public goods, market failure, and environmental economic instruments. These methods support the evaluation of how PFES law addresses environmental externalities and contributes to sustainable forest governance.

The study also adopts a policy analysis approach to assess the effectiveness, consistency, and practical feasibility of current PFES regulations. This includes identifying legal gaps, inconsistencies, and limitations in areas such as payment mechanisms, enforcement structures, and financial management.

Furthermore, qualitative data collection methods are used, including the review of legal documents, academic literature, and policy reports related to PFES, environmental law, and forest governance. Where appropriate, the article incorporates selected international experiences and theoretical frameworks to provide comparative insights and support the proposed recommendations.

Through this combined methodological approach, the article provides a comprehensive legal assessment of PFES and develops recommendations to enhance the role of environmental law in its practical implementation.

### **The Role of Environmental Law in the Implementation of Payment for Forest Environmental Services**

Environmental law is a system of legal norms designed to regulate the relationships among entities arising from the processes of exploiting, using, and impacting the environment, with the aim of protecting the natural environment, ensuring the quality of natural resources, and maintaining and enhancing the quality of the living environment for humans to ensure sustainable development. In general, the role of environmental law in the implementation of payment for forest environmental services (PFES) is reflected in several specific aspects as follows:

*Firstly, the law on PFES serves as a tool used by the State to regulate social relationships arising between groups of providers and users of forest environmental services, based on alignment with the orientation of sustainable forestry economic development.* As an economic instrument in the forestry sector, PFES law primarily performs a positive regulatory function by establishing mechanisms that encourage, support, and protect social relations consistent with the objectives of environmental protection and sustainable forest resource development. Specifically, through regulations on payment mechanisms for service providers, the law creates economic incentives to encourage forest owners, local communities, and related organizations to actively participate in forest management, protection, and development activities; at the same time, it stipulates the payment obligations of service users according to the principle that beneficiaries must pay. Additionally, PFES legislation also fulfills a negative regulatory function through provisions aimed at restraining, preventing, and sanctioning activities that exploit or use forest resources in ways that harm the environment and the common interests of society. This contributes to limiting uncontrolled exploitation of forest resources, while guiding stakeholders to choose resource use methods better aligned with environmental protection requirements and sustainable forestry economic development.

However, in the context of Vietnam's current legal framework on PFES, this regulatory role has not been effectively ensured in practice. Several key limitations can be identified.

First, regarding the level of payment for forest environmental services. Under Article 59 of Decree No. 156/2018/ND-CP (as amended by Decree No. 91/2024/ND-CP), PFES payment levels in Vietnam are determined based on fixed amounts for each type of forest environmental service. While this approach ensures clarity and transparency, it also reflects a "uniform pricing" mechanism that may not accurately capture the true value of forest environmental services. In reality, the value of these services depends on multiple factors, including forest quality, service provision capacity, geographical location, and the degree to which forest ecosystems contribute to the production and business activities of service users. Therefore, fixed payment levels may fail to reflect both direct and indirect, as well as long-term ecological benefits.

In addition, current PFES payment levels are not linked to flexible pricing mechanisms that respond to market fluctuations or socio-economic changes over time. Maintaining fixed payment rates over extended periods, while market prices, labor costs, and the level of benefits derived from forest environmental services continue to change, may lead to an imbalance between the costs borne by service users and the benefits they receive.

Moreover, although legal provisions exist for specific types of forest environmental services, the enforcement mechanisms remain inconsistent and incomplete. In practice, the current system mainly applies to services where users, beneficiaries, and economic gains can be clearly identified, such as water regulation for hydropower and clean water production, ecotourism services, and, more recently, forest carbon sequestration and storage. For these services, economic benefits are relatively quantifiable, allowing the law to define payment obligations and levels. However, other services—such as biodiversity conservation, landscape protection, soil erosion control, and climate regulation—have not yet been assigned clear economic values, nor are there

effective mechanisms to ensure payment in practice. These services often generate public and long-term benefits, making it difficult to identify specific users and quantify the level of benefit received. As a result, financial flows tend to concentrate in forest areas linked to hydropower, tourism, or carbon markets, while forests with high biodiversity value but low commercial returns receive limited financial support. This imbalance may weaken incentives to protect ecologically valuable forest ecosystems (Vu Thi Duyen Thuy, Pham Thi Mai Trang, 2024).

Second, regarding the forms of PFES payment. Although Article 63(3) of the 2017 Forestry Law and Article 58 of Decree No. 156/2018/ND-CP provide for two forms of payment—direct payment based on voluntary contracts and indirect payment through the Forest Protection and Development Fund—in practice, direct payment mechanisms face significant legal and operational challenges. Existing regulations on direct payment remain general and lack detailed guidance on service pricing methods, valuation mechanisms, contractual content, service quality monitoring, liability for breaches, and dispute resolution. Due to this lack of a clear legal framework, stakeholders tend to prefer indirect payment through the Fund to ensure legal certainty and ease of implementation. This practice effectively “administrativizes” PFES relationships and reduces their market-based nature.

Furthermore, in Vietnam, service providers are often households, local communities, or small-scale forest owners with limited financial capacity, management skills, and bargaining power. In contrast, service users are typically large enterprises, such as hydropower plants, water supply companies, or tourism operators. This imbalance further reinforces the preference for indirect payment mechanisms through the Fund. While this system allows the State to centralize financial management, monitor revenue and expenditure, and redistribute funds across regions, it also indicates that current legislation prioritizes administrative control over the development of market-based relationships in PFES.

Third, regarding the management and use of PFES revenues. Sections 3 and 4 of Chapter V of Decree No. 156/2018/ND-CP provide detailed regulations on the management and use of PFES funds under both direct and indirect payment mechanisms. However, the current model still emphasizes centralized financial management through intermediary funds to ensure State control and achieve forestry management objectives. As a result, PFES operates primarily within a public financial-administrative framework rather than as a market-based mechanism grounded in negotiated agreements between service providers and users. Consequently, the autonomy of stakeholders in determining service value, selecting payment methods, designing cooperation arrangements, and negotiating benefit-sharing based on service quality remains limited. This approach is not fully consistent with the contractual and market-oriented nature of PFES in particular, and Payments for Environmental Services (PES) in general (Sven Wunder, Stefanie Engel, Stefano Pagiola, 2005).

*Secondly, PFES law possesses a predictive nature, guiding the evolution of social relationships in the process of payment for forest environmental services according to the development orientation set by the State.* In principle, PFES legal provisions are formulated based on an accurate and appropriate reflection of the practical needs of managing, exploiting, and using forest resources within the economy. These provisions not only reflect existing social relations but also demonstrate guidance

and foresight regarding the future development of environmental economic relations, particularly concerning the increasing value of forest environmental services and society's growing demand for environmental protection and sustainable forest resource development in the face of increasingly severe negative impacts from climate change and environmental pollution. This predictive and guiding function is increasingly reflected in recent developments in Vietnam's environmental legislation, particularly in the recognition of the carbon sequestration and storage functions of forest ecosystems. These legal developments have laid the groundwork for the gradual formation of a carbon trading market, thereby integrating PFES into broader climate policy and green finance frameworks. By anticipating the rising economic value of carbon-related forest services and aligning domestic regulations with international climate commitments, PFES law not only responds to current governance needs but also proactively shapes future environmental-economic relations. This forward-looking approach strengthens the role of law in facilitating the transition toward a low-emission, sustainable forestry economy in the context of intensifying climate change and environmental degradation.

*Thirdly, PFES law contributes to promoting international cooperation mechanisms in addressing global environmental issues.* Based on the principle of Common But Differentiated Responsibilities (CBDR) recognized in Principle 7 of the Rio Declaration, PFES legislation has concretized the requirement to ensure equity between entities exploiting ecological benefits from forest environments and those directly protecting and developing forest resources, in accordance with the international commitments Vietnam has signed and joined, particularly the United Nations Framework Convention on Climate Change and the 2015 Paris Agreement. By establishing a legal framework on this matter, the law has facilitated the reception of financial, technical, and management support from international organizations and bilateral and multilateral cooperation programs, such as forest based on emission reduction initiatives and climate finance mechanisms. This serves as a crucial foundation for Vietnam to effectively fulfill global objectives on climate change mitigation and greenhouse gas emission reduction as a member state, thereby aligning national legislation with the general regulatory trends of international law.

*Fourthly, PFES law contributes to raising community awareness and responsibility for the sustainable protection and development of forest resources.* To minimize the phenomenon of "privatizing benefits and socializing costs" in the process of exploiting and utilizing the ecological values of the forest environment, the establishment of a legal framework for PFES has helped ensure the fair and reasonable distribution of benefits among stakeholder groups impacting the forest environment, based on the Beneficiary Pays Principle (BPP). This economic instrument not only provides a stable livelihood for forest workers, thereby enhancing their responsibility for forest protection and development, but also changes the perspectives and attitudes of service users toward the economic value of forest ecosystem services in a more efficient and resource conserving manner.

## **Recommendation**

To enhance the role of PFES law in the current period, the legal system needs to meet the following requirements:

*First, PFES law needs to establish synchronized, consistent, and feasible legal regulations.* Environmental law must be an effective tool to support the sustainable implementation of forest environmental service payment objectives, ensuring the legitimate rights and interests of each involved party. To meet this requirement, legal provisions need to be developed in a coordinated, reasonable manner, based on scientific foundations and suitable for practical conditions.

*Second, PFES law must ensure the State's management role in the payment for forest environmental services activities.* This is an essential requirement to internalize the negative external costs caused by the provision and use of forest environmental services into the payment price based on the Polluter Pays Principle (PPP). As a special type of commodity circulating in the market, the process of providing and paying for forest environmental services between entities must be controlled by law under the State's management role to promote sustainable forestry economy, protect forest resource quantity and quality. To ensure this, environmental law needs specific provisions on the functions, tasks, and powers of state management agencies in environmental protection in general and PFES in particular, as well as coordination mechanisms among these agencies. At the same time, there should be concrete regulations on the supervision mechanisms of the activities of state management agencies and sanctions applied in case of violations to ensure and enhance the effectiveness of state administrative management in environmental protection.

*Third, PFES law needs to be developed on the basis of ensuring fairness in the rights and obligations of both the service providers and service users of forest environmental services.* While the service providers must incur costs and effort to create and supply environmental forest values to the market, the service users benefit from these services by paying the corresponding costs. Therefore, theoretically, the rights and obligations between these two groups may give rise to disputes and conflicts if not regulated by environmental law. In this role, environmental law needs to establish specific regulations on the subjects entitled to payment, those obliged to pay, payment methods, payment levels, the rights and obligations of the parties, as well as mechanisms for the allocation and use of benefits derived from PFES activities.

To meet the above requirements and ensure synchronization and consistency, environmental law needs to specify the following contents:

*(i) Review, amend, and supplement the current legal regulations on payment for forest environmental services (PFES).* Although the law already specifies the subjects obliged to pay, the subjects entitled to payment, payment methods, payment levels, the rights and obligations of the parties, as well as the mechanism for allocating financial resources obtained from PFES activities, some regulations are still inappropriate, inconsistent, and lack feasibility. Therefore, environmental law needs to review and supplement missing provisions; amend unsuitable regulations to ensure the establishment of a synchronized and consistent legal system, thereby enhancing implementation effectiveness and strengthening the role of PFES law.

*(ii) Develop and implement a set of indicators to evaluate the effectiveness of PFES law enforcement.* This requirement helps improve the quality of post legislative review during the law-making process, emphasizes the responsibility of the law-making entities, and serves as a basis to enhance the effectiveness, feasibility, and strengthen the role of PFES law in practical implementation. The criteria for evaluating the

effectiveness of PFES law enforcement include achieving the policy objectives set forth, reasonable costs of law enforcement, laws being developed on the basis of respecting human rights and citizens' rights, implementation of the law being consistent with the legal system; ensuring fairness, consistency, and strictness; and being open and transparent.

(iii) *Strengthen financial resources allocated for the development and implementation of PFES law.* The provision of regular funding for the development and enforcement of PFES law should be stipulated as part of state administrative management expenses, following the principle that investment in institutional development is investment in development. At the same time, suitable mechanisms should be researched promptly to mobilize non-state budget resources for the development and implementation of PFES law, ensuring objectivity in the legislative process, especially in conducting surveys, assessing the socio-economic impact of policies and laws, and gathering public opinions, particularly from those directly affected by the legislation.

(iv) *Invest in science and technology for the sustainable protection, exploitation, and use of forest resources.* Investment in science and technology for the protection, exploitation, and use of environmental components in general including forest resources is considered a future trend amid increasingly serious declines in environmental quantity and quality, while human demand for exploitation and use continues to rise. The application of appropriate scientific and technological advancements will help increase the efficiency of resource exploitation, reduce environmental emissions, and simultaneously provide more valuable benefits for people to enjoy. This process will contribute to increasing both the quantity and quality of forest environmental services that can be involved in payment mechanisms, better meeting human needs. In other words, the effectiveness of investing in science and technology for the sustainable protection, exploitation, and use of forest resources is an important foundation to improve forest infrastructure quality and ensure the consolidation and enhancement of the role of PFES law in practice.

(v) *Strengthen international exchange and cooperation in the protection, exploitation, and use of forest resources.* PFES is an economic tool that has been applied in many countries worldwide. Therefore, enhancing cooperation, experience sharing, and technology transfer between countries is necessary to absorb, select, and internalize best practices in the design and operation of PFES mechanisms, thereby improving the effectiveness of law enforcement and the sustainability of policies. Through international cooperation, Vietnam can access advanced forest governance models, ecosystem service valuation methods, monitoring, reporting, and verification (MRV) mechanisms, and modern green financial instruments. Furthermore, this requirement promotes the formation of market linkages, especially participation in global initiatives on reducing emissions from deforestation and forest degradation (REDD+), forest carbon credits, and climate finance mechanisms; thereby contributing to Vietnam's effective implementation of international climate change commitments. This is a necessary requirement not only to strengthen the role of domestic environmental law but also to promote closer compatibility between Vietnam's environmental law and international environmental law.

(vi) *Develop and promptly operate a carbon credit market.* The carbon credit market is a market for buying and selling emission rights based on emission quotas set by the State. The theoretical basis of the carbon trading market, where greenhouse gas emission quotas and carbon credits are exchanged, originates from the concept of greenhouse gas emission rights (Zewei Yang, 2012). Developing and promptly operating the carbon credit market is an effective tool for managing greenhouse gas emissions and ozone-depleting substances (Vu Thi Duyen Thuy, 2021), thereby reinforcing and enhancing the role of forest environmental services in carbon absorption and storage; in turn, strengthening the role of environmental law in implementing payments for forest environmental services. In the context of promoting a circular economy to reduce emissions, the development of forest carbon absorption and storage services will contribute to successfully achieving greenhouse gas emission reduction targets and responding to climate change.

## **Conclusion**

Payment for Forest Environmental Services (PFES) has increasingly become one of the economic tools studied and applied by countries to ensure sustainable development in forestry economic growth. Due to its nature as a public good traded in the market, the current PFES mechanism still faces certain difficulties and challenges, requiring countries to implement synchronized solutions—including promoting the role of the environmental legal system. Depending on the political institutions and socio-economic development levels of each country, the environmental legal system will be developed accordingly; however, to enhance the practical effectiveness of PFES law enforcement, promoting and strengthening the role of the law is essential. In this regard, a number of coordinated recommendations need to be implemented:

- Review, amend, and supplement current legal regulations on payment for forest environmental services (PFES).
- Develop and implement a set of indicators to evaluate the effectiveness of PFES law enforcement.
- Strengthen financial resources allocated for the development and implementation of PFES law.
- Invest in science and technology for the sustainable protection, exploitation, and use of forest resources.
- Enhance international exchange and cooperation in the protection, exploitation, and use of forest resources.
- Develop and promptly operate a carbon credit market.

These are the fundamental and most important points to enhance the role of environmental law in implementing PFES. Specifying and synchronizing these recommendations will contribute to forming a unified and feasible legal framework for the sustainable and effective implementation of PFES.

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**Data Availability:** The data results are included in the content of the paper.

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