

Abstract

Payment for Ecosystem Services (PES) represents a strategic concept designed to motivate landowners towards enhancing land management practices for the preservation and provision of ecosystem services. Such services span river basin protection, forest conservation, flood control, and carbon sequestration. Initiated in the early 1990s, PES schemes have been globally adopted, witnessing varied levels of success. Recently, over the past decade, this approach has emerged as a notable trend in Asia. Given the considerable costs and diverse stakeholder involvement associated with these schemes, our study embarks on a comparative analysis between PES initiatives in Europe—where the relationship between humans and nature has historically been more harmonious and progressively safeguarded—and those in Asia, characterized by swift industrialization and urbanization. Employing a systematic literature review method, this study meticulously evaluates a total of 89 articles from the Scopus database, spanning from 2009 to 2023. The analysis revealed that although PES programs enjoy global application, stark differences are evident in their foundational backgrounds, objectives, and determinants of success across Europe and Asia. European PES initiatives typically rest on a more balanced and incremental human-nature relational approach, supported by policy measures. In contrast, Asian PES programs are chiefly directed at mitigating ecological challenges stemming from rapid industrial growth and urban expansion. This investigation delves into literature trends, project categories, beneficiary profiles, implementation scales, and encountered challenges, thereby dissecting critical success factors for PES schemes aimed at enriching future research directions and policy-making processes. The study underscores the criticality of accounting for the socio-economic, political, and dynamic environmental landscapes when crafting and executing PES strategies, highlighting the nuanced considerations essential for tailoring effective ecosystem service policies.

Conclusion

This comprehensive analysis of Payment for Ecosystem Services (PES) highlights distinct approaches between Asia and Europe. Asia's focus lies on immediate solutions through direct payments, emphasizing community involvement and addressing pressing needs. In contrast, Europe's strategy, integrated within frameworks like the Common Agricultural Policy, leans towards long-term biodiversity and sustainability goals.

Methodologically, the study reveals a preference for data simulation to predict ecosystem behavior, diverging from economic valuation methods which, despite their infrequency, are critical for quantifying ecosystem service value to inform policy. However, these approaches face challenges in applying theoretical assessments practically, highlighting the need for adaptation to socio-economic contexts.

The study advocates a comprehensive strategy combining economic valuation, policy innovation, and predictive modeling to tailor PES programs for both conservation and development, ensuring adaptability to local conditions. In sum, it underscores the need for an interdisciplinary approach in PES research, integrating various methods to address ecosystem management complexities effectively. This holistic strategy is vital for fostering sustainable development, promoting socio-economic well-being, and achieving a balance between ecological preservation and economic growth.