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Designing ecotourism-based financing for protected areas: A discrete choice experiment in Ben en national park, Vietnam

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Abstract

Protected areas protect species and habitats while also providing ecosystem services and preserving natural landscapes and cultural values. Their management, especially in developing countries, relies heavily on state budgets, which are often inadequate and unstable. Ecotourism has therefore been promoted as a practical way to supplement conservation funding. By generating revenue from visitors' willingness to pay for nature-based experiences, ecotourism can align conservation objectives with economic incentives

The geographical focus of this study is Ben En National Park, located in Thanh Hoa Province in north-central Vietnam. Established in 1992, it is the only national park in the country situated in a lowland mountain ecosystem with high biodiversity. This study surveyed 1,062 tourists using a convenience sampling approach and applied a discrete choice experiment (DCE) to estimate willingness to pay (WTP) for ecological improvements and to assess the revenue potential of a conservation surcharge embedded in the boat fee system. An interaction-augmented multinomial logit model was employed to capture observed heterogeneity in preferences, and policy simulations were conducted to assess likely uptake and revenue under different surcharge levels.

The findings indicate the predominance of domestic, middle-income visitors. Tourists exhibited broad but uneven awareness of the ecosystem services provided by the national park. While biodiversity and carbon-related functions were relatively well recognised, watershed protection was the least understood. Estimated WTP values were positive, amounting to 20,255 VND for increasing forest restoration by 4 hectares, 5,793 VND for conducting two biodiversity monitoring rounds per year, and 6,962 VND for improving water clarity by 1 meter. Policy simulations, based on 19,266 visitors per year, show that uptake declines monotonically with higher surcharges, generating a concave revenue profile that peaks at a fee of 30,000 VND (161.8 million VND per year). Benchmarking against official cost norms suggests that this peak revenue could finance approximately two biodiversity monitoring rounds per year and about 2 hectares of under-canopy forest enrichment. However, it would be insufficient for large-scale restoration, implying the need for complementary public and partner funding.

Keywords: Protected Areas, DCE, Ecotourism, Vietnam, Willingness to Pay