

Mapping the demand for ecosystem services in humandominated topical forest of Sabah, Malaysia

ABSTRACT

Mapping the demand for ecosystem services (ES) is a profoundly debated research topic that needs to be investigated further to overcome spatial discrepancies between supply and demand in the literature. This study proposes a holistic approach to valuing ES, which is demanded by local people living adjacent to Sabah's protected area in the southwestern part of Sabah, Malaysia. To assess the local people's demand for ecosystem services, we applied the 'ES Matrix Assessment' method. Timber, global climate regulation, recreation, and ecotourism are selected to illustrate the changes in ES demand patterns reported in the Klias Peninsula region. To identify the ES required by local people based on land-cover type, we used a weighted arithmetic mean approach. Then, using multiple regressions, we identified sociodemographic characteristics that influence demand for ES obtained from the Klias Peninsula's tropical forest. The 6-point Likert scale results showed that timber received medium (3) to highly relevant demand (4) among local people in the forest ecosystem, while climate regulation demand was the most highly relevant demand (5) in the forest ecosystem, and recreation and ecotourism are highly demanded in the forest ecosystem and water-based area. Overall, ethnicity, source(s) of income, distance from the protected area, length of residence, and education level have influenced the population's perception of ecosystem service demand in peat swamp forest, mangrove, and forest land, and these factors are statistically significant at the 1% to 5% levels. Our approach possesses the advantage of being intuitively straightforward, making it easy to convey to stakeholders and decision-makers across various ecosystem service (ES) applications. Therefore, our approach, while relatively simple, remains realistic and easy to apply, effectively raising awareness about the utility of the ecosystem services concept for stakeholders and policymakers.