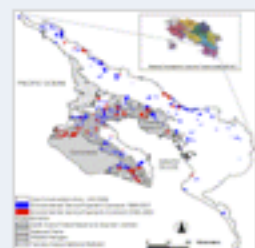


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Abstract

Keywords

1. Introduction
2. Background: current PES priority-setting criteria in Costa Rica
3. PES in the Osa Conservation Area (ACOSA) study area



4. Methods

- 4.1. Choosing a site selection approach
- 4.2. Biodiversity complementarity in TARGET
- 4.3. TARGET algorithm



5. Data

- 5.1. Surrogate biodiversity indicator
- 5.2. Opportunity cost of

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Abstract

The cost-efficiency of payments for environmental services (PES) to private landowners in the Osa Conservation Area, Costa Rica, is evaluated in terms of the trade-off between biodiversity representation and opportunity costs of conservation to agricultural and forestry land-use. Using available GIS data and an 'off-the-shelf' software application called TARGET, we find that the PES allocation criteria applied by authorities in 2002–2003 were more than twice as cost-efficient as criteria applied during 1999–2001. Results show that a policy relevant assessment of the cost-effectiveness of PES relative to other conservation policies can be carried out at regional level using available studies and GIS data. However, there are a number of data and conceptual limitations to using heuristic optimisation algorithms in the analysis of the cost-efficiency of PES. Site specific data on probabilities of land-use change, and a detailed specification of opportunity costs of farm land, labour and capital are required to use algorithms such as TARGET for ranking individual sites based on cost-efficiency. Despite its conceptual soundness for regional conservation analysis, biodiversity complementarity presents a practical challenge as a criterion for PES eligibility at farm level because it varies depending on the set of areas under PES contracts at any one time.

Keywords

Payment for environmental services; Cost-efficiency; Decision-support; Biodiversity conservation; Costa Rica

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