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## Ecosystem Services Valuation in Puerto Vallarta, Mexico for a Concurrent PES Scheme to Foster Adaptation to Climate Change

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### Abstract

Mexico introduced a nation-wide payment for ecosystem services (PES) scheme in 2003 as an economic incentive for forest owners to compensate them for conservation costs and expenditures incurred in while carrying out good land use practices. Due to budgetary constraints the Mexican government migrated from a purely public to public-private funding, called concurrent funds. To implement such scheme the National Forestry Commission (CONAFOR) requires information of the value of the ecosystem services and the land use opportunity cost. The National Institute of Ecology and Climate Change (INECC) developed such information for the watersheds that feed Puerto Vallarta in the state of Jalisco, Mexico. The location was chosen given its ecological and touristic importance and because it has been subject of the project “Conservation of Coastal Basins in the Context of Climate Change” to foster ecosystem-based adaptation (EbA) actions. The research intended to showcase the importance and value that upstream ecosystem services provide to tourism, the potential to implement EbA in the region and also to provide economic incentives to landowners to conserve forests and implement low-impact agricultural practices. To achieve these objectives a literary review was conducted to understand the environmental, social and economic dynamics in the area and to identify the priority ecosystem services, then the willingness to pay and accept (WTP and WTA) was estimated via a contingent valuation to consider the rural/urban and consumers/producers perspectives. The study focused on water provision, scenic beauty and carbon sequestration by the upstream forest in the region. During this contingent valuation, economic data regarding forestry and agriculture activities was also captured to calculate the opportunity cost to conserve the forest. The results showed that tourist and residents would be willing to pay \$3,161 million pesos per year and farmers would be willing to accept \$1,524.6 million pesos. This shows the great existing potential and feasibility to implement a concurrent PES scheme. A payment of \$2,070 pesos per hectare would be a sufficient incentive to allow conserving 51.7% of the forest areas of the watersheds. This research evidence the great potential to implement concurrent PES schemes in Mexico to conserve large forest areas while contributing to its Nationally Determined Contributions under the Paris Agreement.

**Keywords:** Concurrent funds, contingent valuation, ecosystem-based adaptation, opportunity cost, payment for ecosystem services