

## Summary of Economic Valuation Studies and their Policy Relevance for Jamaica

WRI reviewed 15 existing and two new studies on economic valuation of Jamaica's coastal resources. The studies provide rationales for increased investment in the protection of Jamaica's coastal ecosystems, and many also explore sustainable ways to finance coastal and marine conservation. A full summary of the studies is available at [www.wri.org/coastal-capital](http://www.wri.org/coastal-capital).

| #   | Case Study  | Study Site                         | Ecosystem Services  | Policy Relevance   | Reference                   |
|---|---|------------------------------------|---|--|-----------------------------|
| <b>Policy Applications: Raising awareness of ecosystem value; justifying stricter regulations and investment in better management</b> |   |                                    |   |  |                             |
| 4   | Total economic value of reef-related fisheries  | Jamaica                            | fisheries   | Jamaica's reef-related fisheries provide valuable jobs and revenue for the country, contributing US\$34.3 million per year.  | Waite et al. (2011)         |
| 5   | Economic contribution of reefs to beach erosion control and the benefits derived from beach tourism.    | Negril, Montego Bay, and Ocho Rios | tourism, beaches, coral reefs   | The loss of beach due to coral reef degradation is projected to reduce tourist visitation by 9,000–18,000 visitors annually, costing an estimated US\$23 million per year to the entire Jamaican economy. The paper thus makes the case for greater investment in reef conservation by key stakeholders. | Kushner et al. (2011)       |
| 7b  | Socioeconomic assessment of fishing and tourism associated with Montego Bay Marine Park.                | Montego Bay                        | tourism and fisheries   | Assesses the level of social and economic dependence upon Montego Bay Marine Park (e.g. volume of reef tourism, hotel use; fisheries revenues). Results can inform policies and justify investment in management of the park.  | Bunce and Gustavson (1998)  |
| 7c  | Financial analysis of reef-associated fisheries and tourism; avoided damages from shoreline protection. | Montego Bay                        | tourism, fisheries, shoreline protection  | The high value of services associated with the park (NPV US\$381M, 10% discount rate) can be used to justify greater investment in management. Many jobs and businesses in Montego Bay rely on the health of the park.   | Gustavson (1998)            |
| 15  | Value of many ecosystem services provided by Portland Bight; includes scenarios of future tourism.      | Portland Bight                     | fisheries, forestry, tourism, carbon fixation, coastal protection, biodiversity | Study estimates US\$40M to \$53M/yr value from services associated with Portland Bight Protected Area. Results could justify greater investment in the reserve.  | Cesar et al. (2000)         |
| 16  | Financial analysis of reef-associated fisheries and tourism; avoided damages from shoreline protection. | Ocho Rios                          | fisheries, tourism, shoreline protection, biodiversity                          | Estimated value of ecosystem services provided by ORMP is US\$245M/yr. The study also estimates losses to the tourism sector if ecosystem quality degrades further. Management interventions are needed to avoid financial losses in the future.   | Env. Management Unit (2001) |

| #   | Case Study  | Study Site                  | Ecosystem Services            | Policy Relevance  | Reference                  |
|---|---|-----------------------------|-------------------------------|---|----------------------------|
| 17  | Current value of Jamaica's reef fishery and estimated losses from lack of management over 25 years.   | Discovery Bay               | fisheries                     | Estimates US\$1.3B in lost revenues from reef fisheries due to poor management over 25 years. Argues for implementing and enforcing strong fisheries regulations.                             | Sary et al. (2003)         |
| <b>Setting Taxes or Fees to Finance Management of Coastal Resources</b> |   |                             |                               |   |                            |
| 1   | Sustainable financing for coastal management in Jamaica.  | Jamaica                     | tourism / recreation          | Tourists to Jamaica have a high consumer surplus and are willing to pay an environmental tax. Coastal zone management could be completely financed by a \$2 pp tax.                           | Edwards (2009a)            |
| 2   | Measures the recreational value of changes in coral reef ecosystem quality.                           | Jamaica                     | tourism, beaches, coral reefs | The results of the study are used to discuss the feasibility of generating revenues for the sustainable financing of ocean and coastal management in Jamaica.                                 | Edwards (2009b)            |
| 6   | Willingness to pay for park entrance fees   | Jamaica (South Coast focus) | tourism / recreation          | Results can help set entrance fees to protected areas. Authors recommend an entrance fee of about US\$5 for international visitors and about US\$2.50 for domestic visitors.                  | O'Toole (2007)             |
| 9   | Local and tourist willingness to pay (WTP) for improvements in coral diversity.                       | Montego Bay                 | biodiversity                  | Survey results could be used to set entrance fees or taxes for coral reef management (avg. WTP \$23)  | Spash (2000)               |
| 10  | Visitor willingness to pay for park management.   | Montego Bay                 | tourism                       | Results can help set entrance fees to the park. Authors recommend \$5 fee/wk. The revenue maximizing fee would be \$10/wk, but this could reduce visitors to the area.                        | Dharmaratne et al. (2000)  |
| 11  | Capturing ecotourism benefits from national parks.  | Montego Bay                 | tourism                       | Uses two valuation studies from Montego Bay to recommend a voluntary hotel room fee of US\$1 per bed-night.   | Huber (2005)               |
| 12  | Consumer surplus associated with use of Montego Bay Marine Park.                                      | Montego Bay                 | tourism                       | Results suggest moderate taxes or user fees would not reduce visitor numbers to the Montego Bay area.   | Reid-Grant and Bhat (2009) |
| 13  | Fisheries and tourism values associated with Negril's coral reefs; potential losses if reefs degrade. | Negril                      | tourism and fisheries         | Tourists using Negril's coral reefs had a relatively high consumer surplus (\$18); suggests they would be willing to pay a park fee, especially if assured the \$ went to managing the reefs. | Cesar et al. (2003)        |

| #                            | Case Study  | Study Site  | Ecosystem Services   | Policy Relevance  | Reference                             |
|------------------------------|---|-------------|--|---|---------------------------------------|
| 14                           | Consumer surplus of tourists using Negril's coral reefs; potential losses if reefs degrade.   | Negril      | tourism  | Estimated WTP for coral reefs is \$31. Results support a \$5–\$15 environmental tax to finance management of MBMP.  | Wright (1995)                         |
| <b>Multiple Applications</b> |   |             |  |   |                                       |
| 3                            | Compares the tourism industry's contribution to GDP to the environmental costs of the industry (freshwater use, sewage treatment, CO <sup>2</sup> storage). | Jamaica     | NA   | Looking at replacement cost for three ecosystem services; environmental impacts more than cancel out the tourism industry's contribution to GDP. Results could support requirements for the tourism industry to compensate the public for some of these losses.   | Thomas-Hope and Jardine-Comrie (2007) |
| 7a                           | Total economic value of coral reefs in Montego Bay Marine Park.   | Montego Bay | tourism, fisheries, shoreline protection, biodiversity, pharmaceutical use | Total value of services associated with the park (\$407M NPV) as well as per hectare value estimates can be used to set fees, justify greater investment in management, and assess losses from degradation.   | Ruitenbeek and Cartier (1999)         |
| 8                            | Cost-effectiveness of different MPA management interventions.   | Montego Bay | NA   | "Fuzzy logic" model weighed the cost-effectiveness of different management options for Montego Bay Marine Park, finding that the combination of household solid waste collection, the installation of an outfall, and the use of a sediment trap on the Montego River outlet present an optimal policy option, as they are relatively cost effective. | Ruitenbeek et al. (1999)              |

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