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Policy and management brief 3: Value of coral reefs for tourism and costs of reef degradation.

Annex A2, Appendix 3, of the Final Technical Report of project R7668.

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## Appendix A2.3

### Brief 3: The value of coral reefs for tourism and costs of reef degradation

Tourism is one of St. Lucia's most important industries and the island's coastal environment is its most important tourism asset. Coral reefs are of critical importance in supporting tourism. This brief examines how much tourism revenue is generated by coral reefs in the Soufriere Marine Management Areas. It also describes the role of the SMMA in maintaining and enhancing the value to coral reef assets to the St. Lucian economy. Finally, it explores the costs of reef degradation from pollution.

#### KEY FINDINGS

Vacation choice and spending patterns of visitors to the Soufriere Marine Management Area were investigated by interviewing 459 tourists visiting beaches at Anse Chastanet and Jalousie. On average, each visitor spent 7 days on the island and EC\$6145 on their trip to St. Lucia. Visitors staying on the island spent more on their trip (median of EC\$464 per day) than cruiseship visitors (median of EC\$186 per day).

Coral reefs are an extremely valuable asset to the St. Lucian economy. Visitors spent EC\$19.7 million on diving and snorkeling tours alone, nearly half of which (EC\$9.45 million) was attributable to tours taken within the SMMA. Visitors coming primarily to scuba dive spent more than those coming for a general holiday or business (median of EC\$6826 versus EC\$5119 for general holiday and EC\$4388 for business) whether they stayed on the island (median trip length of 7 days) or were cruiseship visitors (median trip length of <24hrs).

Visitors not only contribute revenue towards the SMMA in fees, but also benefit businesses. In St. Lucia, most dive and snorkel businesses are St. Lucian owned and collectively employ a workforce of over a hundred people. In addition, the hotel and restaurant industry that caters to visitors employs some 17,400 people, or 11% of the population (St. Lucia Government statistics, 2001). Central government also derives revenues from hotel occupancy (EC\$23 million) and travel taxes (EC\$2.53 million) as well as reporting an annual visitor expenditure of EC\$292 million. The overall economic benefits of coral reef-associated tourism thus reach beyond revenues for the SMMA, and include wider benefits from other services provided for tourists.

More than half of respondents (68%) interviewed bought their holiday as a package. Although the total holiday cost, whether package or not, was similar across respondents, it is likely that non-package holidays resulted in greater financial benefits to the St. Lucian economy. Package holidays are renowned for problems associated with 'leakage', i.e. money 'leaking' back out of the country. Significant proportions, sometimes up to 80%, of revenue is expatriated due to expenditures on tourism-related imports and services, foreign ownership of businesses, or overseas credit loans. Estimates of the leakage rate in St. Lucia range from 45% in 1978, to 61% for 1986. The increase in cruiseship activity and development of all-inclusive resorts, where all or most guest services are included in one pre-paid holiday package price may aggravate the problem of leakage, both in St. Lucia and the Caribbean in general. In addition, there may be an increase in conflict between visitors and local communities, who often perceive that all-inclusive resorts exclude them from tourism benefits.

Visitors to the SMMA were also asked about their motivations for visiting St. Lucia's reefs, their perceptions of reef attributes including fish and coral life, underwater visibility, garbage and crowding, their best and worst experiences on their reef trip and what would have improved their reef visit. 789 tourists were interviewed using two separate questionnaires over two sample periods (Period 1: December 2000 to March 2001; Period 2: July to October 2001). 85.0% of visitors rated viewing marine life as their number one motivation for diving or

snorkeling in St. Lucia. 88% of divers in Period 1 cited marine life as providing the highlight of their trip and 52.4% of divers and snorkelers interviewed in Period 2 said that marine life had given them the most enjoyment.

The most frequently cited negative experiences in St. Lucia related to equipment problems or personal difficulties (33%). However, quality of the reef and underwater environment was very important. Poor underwater visibility was cited as a disappointment by 14% and seeing damaged coral by another 14%. Remaining factors included poor weather or water conditions and seeing other divers damaging the reef. Similarly negative factors most cited in Period 2 were dead or damaged coral (15.4%), garbage (13.3%), boat traffic noise and pollution (11.2%). Remaining factors, each representing less than 9% of answers, included a lack of fish and diversity of fish, poor underwater visibility and crowding. To improve matters, in general, tourists wanted more information on the marine life of the area (51.9%), better infrastructure (30.4%), better service (15.2%) and removal of garbage (2.5%).

Problems of reef degradation might have ranked more highly if tourists had seen the most heavily damaged sites. However, tour operators avoid the worst affected places. Sediment pollution and garbage problems have already resulted in several sites within the SMMA being unusable for reef tours. Based on figures for revenues generated by the SMMA divided by the number of diving and snorkelling sites it has, it is possible to estimate the costs of losing sites to pollution or other negative impacts. They are estimated at between EC\$432,000 to EC\$756,000 per site per year. Those losses will become more significant as tourism expands on the island. They will be further exacerbated if tourism goes downmarket as a result of declining environmental quality. If this occurs, the island would have to cater for greater numbers of lower spending visitors to sustain revenues.

Marine protected areas add value to the island's coral reef assets. Many visitors to St. Lucia were interested in environmental issues, with almost three-quarters surveyed either belonging to an environmental organisation or reading articles on marine life. Most visitors interviewed (86%) knew of the existence of the SMMA before their visit. Nearly half of those interviewed (44%) said that the existence of the Soufriere Marine Management Area had positively influenced their decision to visit St. Lucia. This demonstrates the value of marketing protected areas for economic gain.

## **MANAGEMENT OPTIONS**

**Maintain strong protection of marine reserves:** Abundant fish and large fish are highly valued by tourists. In the Turks and Caicos Islands, research showed that divers would pay more to see plentiful big fish. Marine reserves enhance the value of fish stocks for tourism. Since 1995, the SMMA has increased the size of fish stocks four-fold in marine reserves and three-fold in adjacent fishing grounds. There are also more large fish around, such as snappers, parrotfish and groupers. To sustain these benefits, it is essential that reserves continue to be protected from fishing over the long-term. With continued protection, fish stocks will carry on increasing and large fish will become more abundant, further enhancing the attraction of the reefs for tourists.

**Create more marine management areas:** The existence of protected areas is important to tourists choosing their vacation destinations. The role of protected areas in increasing the abundance of marine life and quality of the coastal environment is becoming widely known. Protected areas attract more and higher spending tourists. The success of the SMMA warrants expansion of this kind of management to other coastal areas and communities around St. Lucia.

**Take action to reduce pollution:** The above findings highlight the importance of reef quality to tourists. But increases in fish stocks have come against a background of serious reef degradation. Half of all corals present in 1995 had died by 2001 due to storm damage, disease and sediment pollution. Sediment pollution in particular needs to be reduced in order to maintain the value of reefs as a tourism asset. Sediment kills corals, prevents reef recovery after storms, and reduces underwater visibility. Dead corals and poor visibility reduce tourist enjoyment of reefs.

**Degraded reefs cost money:** Reducing sediment pollution and garbage on reefs would bring several sites back into use that have been abandoned. Reducing pollution levels more generally will enhance the value of St. Lucia's reef assets, and good reef management will be especially important to support future expansion of tourism.

**Monitor and regulate the use of reef resources for the benefit and long-term sustainability of reef-dependent industries:** The combined impacts from visitors and pollution need to be tackled to protect reef assets, and regular monitoring is necessary to evaluate the success of protection. If reefs continue to degrade, options for high value/low impact tourism will diminish. To maintain tourism revenues there will need to be a shift to high volume/high impact tourism. If this should happen, the quality of the environment will suffer, in the water and on land, as will the quality of life and employment opportunities for St. Lucians.

**Encourage development of locally owned tourist businesses and stayover visitors:** Local ownership increases benefits to the island economy, and stayover visitors spend more than those from cruiseships. Supporting small-scale, locally owned businesses developed around coastal tourism in marine management areas will enhance the value to tourism to local communities and the national economy.