**Coral Reef Monetary Contribution to Saint Lucia** from

(Coastal Capital – Economic Valuation of Coral Reefs in Tobago and St. Lucia

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Coral reef associated tourism contributes significantly to the economy of Saint Lucia. 25% of tourists visit Saint Lucia due to coral reefs. The direct economic impact from visitor spending on accommodating reef recreation and miscellaneous expenditures in 2006 was approximately US$91M for Saint Lucia making 11% of GDP. Additional indirect economic impacts driven by the need for goods to support tourism contributed US$18-102M. The resulting combined direct and indirect impacts from coral reef associated tourism equals $US160-194M for Saint Lucia in 2006. The annual direct economic impact of coral reef associated fishers is estimated at US$0.4-0.7M . Additional direct impact from the need for boats, fuel, nets etc is approximatelyUS$0.1-0.2M making a total of US$0.5-0.8 M per year. 44% protection of the shore line comes from coral reefs which covers approximately 10 sq km or 1.5% of the total land area in Saint Lucia making a total of $US 28-50M in 2007 which will provide protection from climate change.

For 1995/6 estimates for the total value of the Soufriere Marine Management Area (SMMA) reef fishery varied from a lower bound estimate of EC$141,000 to an upper bound estimate of EC$270,000. For 2000/1 estimated values lay between EC$233,000 and EC$356,000. If we use the lower bound estimates for both years the value of the fishery has increased by EC$126,000, an increase of 91%. Using the upper bound estimates the value of the fishery has increased by EC$87,000, an increase of 32%. The upper bound estimate is in line with change in catch-per-unit-effort and may be the most reliable figure.

In Saint Lucia, valuation results will be useful in guiding future development planning, including evaluating the potential impacts on coral reefs good and services from proposed marina developments along the central, west and east coasts of the island and resort developments elsewhere along the coasts. It will also assist in weighing the benefits of investing in reef health through improved sewage treatment, enhanced management of the Soufriere Marine Management Association (SMMA) and other management options. This information should prove invaluable in undertaking impact assessments of touristic developments in these areas as there is currently a great demand for marinas and golf courses along the coasts of Saint Lucia.

**Soufriere Marine Management Area (SMMA) highlighting a novel approach to self sustaining financing of a marine management area**

This is the only case in Saint Lucia where the government has agreed to have revenue from user fees go into an account apart from the consolidated fund to be used directly in the management of the marine area.

There was an urgent need to address the problems and conflicts in the coastal zone of Soufriere. The initiative in 1995, leading to the establishment of the SMMA, was clearly triggered by escalating conflicts among users of the nearshore coastal and marine environment, increasing evidence of resource degradation, and loss of economic, scientific and recreational opportunity in the marine sector (SRDF, 1994 b; SMMA, 1998).

The management plan of the area defines the institutional arrangements and responsibilities, revenue sources (including specific fees to be charged for various categories of users, systems of fee payment and collection), job responsibilities and skills required for area wardens and the SMMA manager, specifics of infrastructure needed (demarcation and mooring buoys, demarcation signs), systems for monitoring the resource base and levels of resource use, surveillance, maintenance, and public awareness needs.

The initial inflow of external funding allowed the SMMA to establish a firm foundation upon which user fees, purchase of souvenirs, and other donations would make it self-sustaining.

Revenue generated by the use of marine reserves by divers has contributed substantially to the operation of the SMMA.

Since the SMMA was formed, and through the combined efforts of resource users, management

authorities, scientists, non-governmental groups, donor organisations and the Soufriere

community, achievements, summarised as follows include (George, 1996;

Brown, 1997; Renard, 1998; Pierre, 1999; Salm *et al*., 2000; Sandersen and Koester, 2000;

Pierre-Nathoniel, 2003, 2006):

* Improvement in the status of coral reefs, especially branching coral (Roberts *et al*, 1997),

which had previously been subjected to physical damage, particularly from anchorage.

* Increase in fish stocks in marine reserves and fishing priority areas (Roberts *et al*, 1997), and as a reflection of these, there has also been an increase in fishers’ catches (Gell *et al*, 2001). One of the main objectives of the SMMA was to rehabilitate the severely overexploited reef fishery. In this the SMMA has been an outstanding success. Reserve zones are designed to protect commercially important species so that they live longer, grow larger and become more numerous. Scientists from York measured the amount of fish in reserves and fishing grounds annually from 1994 to 2002, using underwater censuses. Over this period the amount of fish present in marine reserve zones of the SMMA rose dramatically, increasing fourfold over the amount present at the outset of protection. Protected stocks in reserves produce many times more eggs than exploited stocks do and their young can be carried into fishing grounds on ocean currents. There is also movement of adults and juveniles from reserves to fishing grounds, supporting nearby fisheries. In adjacent fishing grounds, fish stocks increased three times over the same period.
* Reduction or resolution of conflicts among users, through a consultative and participatory

process, leading to the enhanced co-existence of users in a shared coastal zone, and increased commitment to conservation, sustainable use and improved access and benefit sharing from the use of resources.

* Provision of facilities such as yacht moorings, which have facilitated the reduction in

physical damage to marine habitats and the patronising of local businesses (e.g. restaurants) by visitors.

* Capacity building and facilitated organisation of previously disorganised water taxi operators into the Soufriere Water Taxi Association, which has contributed towards a more viable business and helped to reduce visitor harassment by service providers in the area. It is now called the Soufriere Water Craft Association.
* Generation of user fees, which has essentially led to self- sufficient financing of the SMMA; The SMMA is financed through user fees (diving, snorkelling, yacht mooring (coral conservation fee)), souvenir sales, grants (individual and organisational) and provision of services (such as mooring installation) to other islands. A ‘friends of the SMMA’ membership programme has also been initiated, as well as an ‘SMMAdvocate’ yachting programme.
* All normal administrative costs and routine operational costs are met directly by the SMMA;
* Funds generated go into a special SMMA account and not into the government consolidated fund. The Finance Act of the country allows for this facility.
* Positive comments made about the SMMA by the users themselves, especially fishers, who initially lost the most, in terms of prime fishing grounds, when the SMMA was established.

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