

Appendix 2: RELATIONSHIP BETWEEN BIODIVERSITY AND THE MAIN SOCIAL AND ECONOMIC SECTORS

Sector	Contribution of biodiversity to the sector	Impact of the sector on biodiversity	Measures to improve linkages
<p>Tourism Tourism is the country's largest economic sector, and it is growing rapidly (from 212,000 visitors in 1988 to 564,000 visitors in 1997). Tourism infrastructure is concentrated on the north west coast of the island. Nature and heritage attractions currently constitute a relatively small part of the tourism product, but there are efforts currently underway to develop these resources and to involve communities in their management.</p>	<p>nature trails and bird watching in forest areas</p> <p>snorkeling and diving on coral reefs</p> <p>bathing, yachting, recreational fishing and other water sports</p> <p>wild seafood in local cuisine</p> <p>wild materials for handicraft and souvenirs</p> <p>attractiveness of landscapes</p>	<p><u>Positive impacts:</u> source of revenue and employment</p> <p>source of revenue for conservation and environmental management</p> <p>provision of incentives and creation of demand for conservation and environmental management</p> <p><u>Negative impacts:</u> generation of solid and liquid waste, with impact on ecosystems and species</p> <p>demand for seafood which often exceeds productive capacity</p> <p>potentially negative impact on plants used for handicraft and souvenirs</p> <p>illegal trade in corals and other protected marine species</p> <p>physical damages to reefs</p> <p>conversion of sensitive areas for construction of tourism facilities</p>	<p>adoption of policy to channel revenue from tourism uses of biodiversity for conservation and management</p> <p>determination of the carrying capacity of the island as a whole, and of specific sites and communities</p> <p>increase in the revenue generated from tourism uses of biodiversity</p> <p>adoption and enforcement of measures to control the impact of tourism uses on biodiversity</p> <p>research and monitor the economic, social and environmental impacts of tourism</p> <p>improvement of water quality monitoring near tourism plants</p>

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<p>Agriculture Agriculture has long been the mainstay of St. Lucia's economy. Banana remains the single most important crop, but markets and production have declined in the past five years. Approximately 34% of the lands are currently under agricultural production.</p>	<p>formation and retaining of soils, absorption and filtering of water, provision of natural pollinators, and control of pests</p> <p>increase in the genetic resistance of crops and livestock species</p> <p>wild resources with potential for commercial uses</p> <p>value of genetic material for future crop improvements</p> <p>provision of food and feed for livestock</p>	<p><u>Positive impacts:</u></p> <p>source of revenue and employment</p> <p>provision of incentives and creation of demand for the maintenance and use of important breeds, varieties, hybrids and species</p> <p><u>Negative impacts:</u></p> <p>destruction and conversion of natural habitats for agriculture</p> <p>damages to ecosystems from erosion and sedimentation caused by agricultural activities</p> <p>contamination of ecosystems by run-off and leaching of fertilizers, pesticides and herbicides</p> <p>impacts of pesticides on beneficial, non-target organisms</p>	<p>establishment and improvement of monitoring systems (soil erosion, cropping patterns, water quality and land use)</p> <p>provision of training on the use of pesticides and on integrated pest management</p> <p>review and reform of land use and land tenure policies to encourage sustainable practices</p>

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<p>Fisheries The fisheries sector is important, for economic, social and cultural reasons. Fish provides a reliable source of protein for many inhabitants, and fishing supports economic activities in a number of coastal communities.</p>	<p>commercially important species of reef fishes, conch, lobster and sea urchin</p> <p>supply of food and reduction of food imports</p>	<p><u>Positive impacts:</u></p> <p>source of revenue and employment</p> <p>provision of justification and incentives for conservation and natural resource management</p> <p><u>Negative impacts:</u></p> <p>unsustainable harvesting of certain species</p> <p>impacts of harvesting on the ecosystems and on other species</p>	<p>development of a national education and public awareness programme on environmental issues affecting fisheries and coastal and marine ecosystems</p> <p>establishment and improvement of systems for monitoring of fish stocks and environmental conditions</p> <p>enforcement of fisheries laws and regulations</p>

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<p>Forestry Forest products make significant contributions to the lives of St. Lucians, with the provision of raw material for construction, furniture-making, canoe-building, handicraft and a number of other uses.</p>	<p>timber production, in small volumes, from the natural forest</p> <p>important source of timber provided by plantations (exotic species) and dry scrub forest, utilized locally for furniture-making, building and interior decoration</p> <p>charcoal and firewood</p> <p>raw materials for handicraft production provided by commercially valuable native palm and grass species</p>	<p><u>Positive impacts:</u> source of revenue and employment</p> <p>reduction in the rate of harvesting of valuable rainforest timber species</p> <p><u>Negative impacts:</u> over-exploitation of timber plantation and commercially important local species</p> <p>over-exploitation of the mangrove ecosystem</p> <p>risk of habitat destruction from charcoal production</p> <p>threats to important species such as the <i>Latannyé</i></p>	<p>development of a silviculture prescription for all timber plantations</p> <p>development of a management regime for valuable dry land timber species and other commercially valuable species</p>

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<p>Construction and Manufacturing Construction has grown rapidly due to population increases, tourism development, and slow but steady economic growth. Manufacturing remains a small but important part of the economy. Much of this activity is concentrated in the north west of the island.</p>	<p>availability of raw products, particularly timber, for construction</p>	<p><u>Positive impacts:</u> provision of alternatives to forms of resource use which can be detrimental to biological diversity</p> <p><u>Negative impacts:</u> conversion of sensitive coastal and terrestrial habitats for commercial, residential and infrastructural uses</p> <p>sand mining for construction</p> <p>sedimentation of rivers, wetlands and nearshore marine environments from construction activity and road cuts</p> <p>pollution from manufacturing activities</p>	<p>formulation and adoption of a land use policy and of zoning procedures and guidelines</p> <p>revision of planning legislation and inclusion of requirements for EIAs</p> <p>use of bioengineering technologies for erosion control</p> <p>demarcation and effective management of existing protected areas</p> <p>development of alternative sources of construction aggregates</p> <p>identification of sensitive terrestrial and coastal habitats, and zoning for protection or compatible uses</p> <p>improvement of water quality systems and programmes near manufacturing facilities</p> <p>enforcement of legislation against industrial dumping</p>

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<p>Education Education is a very critical sector. In the formal education systems, there are currently 88 primary schools, 21 secondary schools and one tertiary education institution. Environmental education is part of the formal system, and is also provided by natural resource management agencies through a variety of media and programmes.</p>	<p>availability of a wide range of ecosystems which can be used for educational purposes in a number of disciplines</p>	<p><u>Positive impacts:</u> increased awareness and commitment, as a result of better education</p>	<p>continuation and expansion of formal and non-formal education and awareness programmes on biodiversity, for the benefits of all sectors</p>

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<p>Health Physical and mental health care is an essential requirement for the well-being of a nation and its citizens. Formal health care delivery is provided in community health centres, public hospitals (5 in all), one private hospital, and the private practice a large number of medical doctors. Informal and traditional health services remain important sources of health care, particularly in rural communities.</p> <p>Environmental health is an essential component of the sector. It forms the basis of any Primary Health Care (PHC) strategy, providing services of a primarily preventative nature to communities and institutions.</p>	<p>species which are or can be used for medicinal purposes</p> <p>production of clean air and water</p> <p>provision of useful organisms for biological control</p> <p>improved food safety and reduction in food-borne illnesses</p> <p>reduction in vector proliferation and infestation</p>	<p><u>Positive impacts:</u> provision of incentives and rationale for research on the medicinal properties of local flora</p> <p><u>Negative impacts:</u> destruction of beneficial, non-target species</p> <p>contamination from bio-medical wastes</p>	<p>continuation and improvement of monitoring of environmental quality (e.g. water and air)</p> <p>dissemination of relevant information to all concerned</p> <p>conduct of research on biological control of mosquitoes, especially <i>Aedes aegypti</i></p> <p>continued joint action and consultation</p> <p>inclusion of environmental health studies within school curricula</p> <p>inclusion of environmental health issues in popular media and educational programmes</p> <p>increased collaboration between public and private sector agencies concerned with environmental health</p>

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<p>Recreation Recreational activities, whether active or passive, are often based on the natural environment: bathing and swimming, hiking, relaxing and meditating, observing wildlife and landscapes, visiting sites and attractions, diving and snorkeling are all important sources of recreation. In recent years, the country has witnessed a growth in the demand for such outdoor and nature-based recreational activities</p>	<p>provision of resources, sites and attractions for various forms of recreation</p>	<p><u>Positive impacts:</u> increased awareness of the benefits of biodiversity, and of the need to conserve and manage</p> <p><u>Negative impacts:</u> pollution and physical damage caused by recreational uses of sensitive areas</p>	<p>adequate planning of recreational sites to control and minimize negative impacts on biodiversity</p> <p>monitoring of impacts of activities</p>

Appendix 3: PARTICIPANTS IN CONSULTATIVE MEETINGS

Ministries of government

Ministry of Agriculture, Forestry and Fisheries

Hon. Cassius Elias, Minister
Dr. James Fletcher, Permanent Secretary
Brian James, Chief Forestry Officer
Horace Walters, Chief Fisheries Officer
Rhikki Alexander, Department of Forestry
Michael Andrew, Department of Forestry
Donald Anthony, Department of Forestry
Vaughn Charles, Department of Fisheries
Christopher Cox, Department of Forestry
Marie-Louise Felix, Department of Fisheries
Cornelius Fevrier, Department of the Environment
Paul Francis, Agriculture Extension Division
Alicia George, Agriculture Research Division
Cornelius Isaac, Department of Forestry
Williana Joseph, Department of Fisheries
Joan Norville, Agriculture Research Division
Dawn Pierre-Nathoniell, Department of Fisheries
Alfred Prospere, Department of Forestry
Susanna Scott, Department of Fisheries
Laverne Walker, Department of Fisheries

Ministry of Planning, Development, Environment and Housing

Marcathian Alexander
Crispin d'Auvergne
Elizabeth Charles-Soomer
Christopher Corbin
Donovan Williams

Customs and Excise Department

Anthony Louis

Ministry of Community Development, Culture, Local Government and Cooperatives

Norma Herman
Urania Joseph
Jahto Mahal
Brenda Wilson

Ministry of Tourism, Civil Aviation and International Financial Services

Jacqueline Alexander
Sharmon Jules

St. Lucia Heritage Tourism Programme

Sylvester Clauzel

Ministry of Legal Affairs, Home Affairs and Labour

Lenita Joseph

Attorney General's Chambers

George Charlemagne

Ministry of Health, Human Services, Family Affairs and Gender Relations

Harold Andrew
Joseph Medard
Ricardo Nelson

Ministry of Education, Human Resource Development, Youth and Sports

June Sifflet

National Commission for UNESCO

Sherry Alexander Heinis

Sir Arthur Lewis Community College

Julia Bird
Hilary Charlemagne

Ministry of Commerce, Industry and Consumer Affairs

Francis Raphael

Ministry of Communications, Works, Transport and Public Utilities

Lester Arnold
Cornelius Daniel

Rural Economic Diversification Incentives Project

Jerome Jules

Mabouya Valley Development Project

Evestus Augustin

Office of Disaster Preparedness

Dawn French

Royal St. Lucia Police Force

Isidore Brisefert

Cyrus Fauckner

Anthony Lubin

Adon Marcion

George Modeste

Michael Smith

Frederick Stanio

Fire Service

Olson Peter

Statutory boards and corporations

Bureau of Standards

Thomas Edmund

Housing and Urban Development Corporation

Karlene Ellis-Vitalis

National Development Corporation

Dainea Augier

Trissa Charles

Parks and Beaches Commission

Ed Leopold

Solid Waste Management Authority

Carleen Jules

Alison King-Joseph

St. Lucia Air and Sea Ports Authority

Adrian Milaine

Solace Myers

St. Lucia Livestock Development Company

Leton Lawrence

St. Lucia Electricity Services

Cuthbert Duncan

St. Lucia Water and Sewerage Authority

Amatus Hamilton

Town and Village Councils

Atrinson Alcide, Castries

Egbert Lucien, Gros Islet

George Regis, Anse la Raye

Community and non-governmental organisations

Anse la Raye Fishermen's Co-operative

Christopher Evans

Association of Professional Engineers

Cornelius Edmund

Dennerly Watershed Management Action Force

Alfred Prospere

Derniere Riviere Water Catchment Group

Millines Herman

Folk Research Centre

Leslie Charles

Gros Islet Fishermen's Cooperative

Finbar Delicette

Laborie Conservation Group ECHO-LAB

Augustine Dominique

Micoud Water Catchment Group

Justina Toussaint

National Council for the Advancement of Rastafari

Fred Alcindor

Paul Francis

Edwin Joseph

National Council for Transportation

Guy Joseph

National Farmers Association

Patrick Ernest

National Research and Development Foundation

Bryan Walcott

National Youth Council

Rhikki Alexander	Charmaine Nathaniel
Soufriere Fishermen's Cooperative Julian Alexis Edwin Mongroo	St. Lucia Naturalists Society Lenita Joseph
Soufriere Marine Management Area Angela Lamontagne Kai Wulf	St. Lucia Teachers' Union Virginia Albert Lucius Prescott
Soufriere Regional Development Foundation Ervin Alexis	St. Lucia Whale and Dolphin Watching Association Jane Tipson
Soufriere Water Taxi Association Caroline Aimable	Talvan Water Catchment Group Morrison Lucien Claudina Robert Innocent Roserie
Southern Taxi Association Albert Pierre	Vieux Fort Heritage and Conservation Group Sylvester Clauzel Myrtle Isaac
St. Lucia Agriculturists Association Marylane La Corbiniere	<i>Private sector</i>
St. Lucia Animal Protection Society Maria Grech Jane Tipson	ACME Consultancy Agnes Francis
St. Lucia Arts and Crafts Association Sabinus Thomas	Cable and Wireless Telecommunications Ltd. Roderick Cherry
St. Lucia Chamber of Commerce, Industry and Agriculture William Yarde	Cox and Company Gilda De Veer-Spencer
St. Lucia Day Boat Charters Association Ricardo Theobalds	Minvielle and Chastanet Ian Herman
St. Lucia Dive Association (Anbaglo) Anthony Leonce Thomas de Nobrega Kai Wulf	Petroleum Dealers Association Clinton Charlery
St. Lucia Game Fishing Association Francis Compton	Rodney Bay Marina Ian Cowan
St. Lucia Horticulturists Society Gloria Greenwood	Sandals St. Lucia Anthony Leonce
St. Lucia Hotel Vendors Association Evans Stanislaus	Shoppers Paradise Pet Store Fitzroy Pollard
St. Lucia National Trust Maria Grech	St. Lucia Banana Corporation Frank Polius
	St. Lucia Distillers Ltd.

Allan Lang
Marie-Celine Lawrence

Tropical Quality Fruits Company
Cuthbert Joseph
Andre Lansiquot

Windward Islands Banana Development
Corporation
Luvette Thomas-Louisy

Regional and international organisations

Caribbean Agriculture Research and
Development Institute
Lennox Daisely

Caribbean Environmental Health Institute
Herold Gopaul

Caribbean Natural Resources Institute
Mathias Burt
Yves Renard
Allan Smith

CARICOM Secretariat
David Brown

Inter-American Institute for Cooperation in
Agriculture
L. Barbara Graham

Organisation of Eastern Caribbean States/
Natural Resources Management Unit
Keith Nichols

RARE Centre
Paul Butler
Alleyne Regis

University of the West Indies
Dunstan Campbell