

**Nature Island Tourism: Applying an Eco-Tourism Sustainability Framework to the
Island Of Dominica**

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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ABSTRACT

Eco-tourism continues to experience fast growth, as the desire for more sustainable tourism amongst tourists increases and as economic situations in developing countries demand new avenues for development. In many Caribbean and other developing countries, tourism serves as a promising alternative for development in the face of struggling primary industries and is identified as a possible means through which sustainable development can be achieved. However, not many Caribbean islands are developing and benefiting from an eco-tourism defined as tourism which demands a high level of human responsibility involving “active contribution towards conservation and/or the improvement of host community welfare” (Stone, 2002:16). The Caribbean island of Dominica will benefit greatly from an assessment of its present approach to eco-tourism development and recommendations for realizing more positive contributions to sustainability.

The case study of Dominica was used, together with information from a sustainability and sustainable tourism literature review, to (1) develop a comprehensive eco-tourism sustainability framework, and (2) test its application by exploring the current practice of eco-tourism on the island. The literature review revealed the current trends and debates surrounding sustainability and sustainable tourism. This was used to create an initial framework for sustainable tourism, which was subsequently elaborated to reflect the island’s situation. Key informant interviews from the public and private sectors ensured varied perspectives, which were corroborated by participant observations and other secondary research to highlight key issues affecting tourism on the island.

This research has revealed that early attempts at conservation and sustainability by the Forestry Division, though not driven by tourism, contributed to preservation of the physical attractions on the island. The major factors affecting the potential for sustainable eco-tourism in Dominica were identified as the geo-physical setting, political/economic motivations, trade agreements, culture, social capital, attitudes, behaviour, habits and customs, environmental considerations, public awareness, outreach, human resource development, and education, site development, and external assistance/ collaboration for

research. Continued growth and development of tourism are hindered by limited resources (financial, physical, and human), insufficient collaboration between and among private and public sectors, weak law and enforcement, poor physical planning, conflicting Government priorities, the rugged topography, the dilemma of needing to increase number of visitors while also protecting the environment, the challenge of partitioning the resources between traditional and recreational users while maintaining sustainable use of resources, climate change, changes in the world economy, and the intrinsic vulnerability of Small Island Developing States (SIDS).

In light of the myriad of challenges to sustainable eco-tourism development and key considerations from the eco-tourism sustainability framework, the recommendations are focused on addressing the most significant challenges, by suggesting an action plan geared towards improving solid waste management planning and disaster management planning; developing a national stewardship plan to build awareness about environmental protection, conservation and responsibility; and a literacy training programme for tourism service providers who may be illiterate.

The eco-tourism sustainability framework and recommendations emerging from the test of its application can guide planning and management within this field and improve the capacity for eco-tourism to make more positive contributions to sustainability on the island of Dominica and more generally, throughout other Small Island Developing States (SIDS).

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ACRONYMS

ACP	African, Caribbean and Pacific
CIDA	Canadian International Development Agency
CAST	Caribbean Alliance for Sustainable Tourism
CARICOM	Caribbean Community
CDB	Caribbean Development Bank
CDERA	Caribbean Disaster Emergency Response Agency
CDMP	Caribbean Disaster Mitigation Project
CAREC	Caribbean Epidemiological Centre
CMEC	Caribbean Media for the Promotion of Tourism
CANARI	Caribbean Natural Resources Institute
CEHI	Caribbean Environment and Health Institute
CPEC	Caribbean Project for Economic Competitiveness
CTO	Caribbean Tourism Organization
CDB	Central Development Bank
DDA	Discover Dominica Authority
DAIC	Dominica Association of Industry and Commerce
DHTA	Dominica Hotel and Tourism Association
ECU	Environmental Co-ordinating Unit
EDF	European Development Fund
ETDP	Eco-tourism Development Programme
EU/EC	European Union/European Commission
GSPs	Gibson Sustainability Principles
GOs	Governmental Organizations
IWC	International Whaling Commission
IDA	Invest Dominica Authority
NEAP	National Emergency Action Plan
NEEC	National Emergency Executive Committee
NDC	National Development Corporation/National Disaster Coordinator
NDP	National Disaster Plan
NEPO	National Emergency Planning Organization
NOAA	National Oceanic and Atmospheric Administration
NGOs	Non-governmental Organizations
OAS	Organization of American States
ODM/DMO	Office of Disaster Management/Disaster Management Office
OECS	Organization of Eastern Caribbean States
OECS-ESDU	Organization of Eastern Caribbean States—Environment & Sustainable Development
PAHO	Pan American Health Organization
PVOs	Private Voluntary Organizations
PMU	Programme Management Unit
SIDS	Small Island Developing States
SHAPE	Society for Heritage Architecture Preservation and Enhancement
SCET	Steering Committee for Eco-tourism
SLIC	Sustainable Living Initiative Centre (SLIC)

UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational Scientific and Cultural Organization
UNWTO	United Nations World Tourism Organization
UWI	University of the West Indies
WEF	Waitukubuli Ecological Foundation
WNTP	Waitukubuli National Trail Project
WTTC	World Travel and Tourism Council

CHAPTER 1: INTRODUCTION

My research examines how Dominican eco-tourism potential has emerged, and prospects for future development research. The chapter introduces study questions, purpose, and objectives. The study rationale and research contributions follow, as a confirmation of the significance of this research. Sustainability is the overarching theme. The eco-tourism setting in Dominica is investigated through a sustainability lens, using the Gibson Sustainability Principles (GSPs) as a generic set of guidelines to build a comprehensive eco-tourism sustainability framework. The framework's applicability is then tested in order to assess the island's ability to support a healthy eco-tourism industry that will contribute to community development.

1.1 ECO-TOURISM, SUSTAINABILITY, & SUSTAINABLE COMMUNITY DEVELOPMENT

Tourism growth is a major world-wide economic force, offering strong competition to the oil and food industries as well as to the automobile sector [United Nations World Tourism Organization (UNWTO), 2008b]. The UNWTO predicted 2007 as “the fourth consecutive year of sustained growth” for the global tourist industry, noting that tourism's resilience to natural and man made stresses has been quite evident (2008b). “Worldwide arrivals reached 842 million in 2006, representing a 4.6% year on year growth” (2008b). It has been predicted that by 2020, international arrivals will exceed 1.5 billion people. Developing countries are forerunners in tourism growth. Their market share increased from 34% to 40% between 2000 and 2007. Although World Travel and Tourism Council (WTTC) has reported a decline in Travel and Tourism Economy GDP growth to 1.0% in 2008 from 3.6% pa in the past four years and predict 2009 and 2010 as difficult years, “Travel and Tourism is expected to resume its leading, dynamic role in global growth” beyond the current economic recession (http://www.wttc.org/eng/Tourism_Research/Tourism_Economic_Research/, April 9, 2009). Many governments “see opportunities to benefit from a market with a sustained high growth rate” (Jenkins, 2006:22) and are looking to tourism as the key to new economic and social benefits. Investments in tourism infrastructure are rapidly increasing

in countries in the Middle East, Africa, Asia and the Pacific, and Central and South America (UNWTO, 2008a). In the Caribbean, tourism has become one of the region's main export earners (WTTC), 2004: 7). The growing importance of experiential tourism (including nature, culture, and soft adventure) has further heightened the popularity of areas endowed with natural beauty and diverse cultures.

1.1.1 Eco-tourism In The Making

Worldwide interest in eco-tourism and other environmentally conscious approaches to tourism management and planning began in the 1970's. Post World War II depressions had stunted tourism growth, initiating a review and re-assessment of tourism over the two previous decades (Murphy, 1985), concluding that previous approaches to tourism planning and development had been unsatisfactory (Baud-Bovy, 1982; de Kadt, 1979, as cited in Stone 2002). A WTO 1978 survey of tourism plans revealed that many plans were not actually implemented (Baud-Bovy, 1982). Key factors in failures to implement included inflexibility of plans; failure to integrate tourism into the rest of the economy; neglect of social impacts (Getz, 1986); and heavy emphasis on physical planning (Spandouis, 1982). Further, focus on economic gains meant that negative environmental, social, and cultural impacts of tourism were often ignored (Travis, 1982).

A World Bank (WB) and United Nations Educational Scientific and Cultural Organization (UNESCO) sponsored conference in 1976 focusing on the cultural and social impacts of tourism recommended "vigorous, active, and widespread planning and intervention" (de Kadt, 1979: 9). De Kadt saw usefulness in promoting practical, equitable, and participatory approaches to tourism planning and posited that tourism plans ought to be integrated into national policies and should explore alternative forms of tourism (1979). Baud-Bovy (1982) also endorsed participation by all parties, requiring a change from rigid planning in the past. He highlighted this as a possible response to the problem of ignoring or downplaying crises occurring at the implementation stage and recommended that attention be focused on three interdependencies in tourism: "between tourism development and socioeconomic development; between the various elements of the tourism sector itself (resources, markets, infrastructure, people, etc.); and between

tourism and outdoor recreation” (Baud-Bovy, 1982, as cited in Stone 2002). “Regional strategic planning” for tourism was recommended by Gunn to facilitate and improve communication between private and public organizations and aid in better feedback and collaboration (1979).

In line with this shift towards more inclusive processes in tourism planning, Murphy (1985) promoted community-centered tourism, recognizing the significant dependence of tourism on host communities. He placed the proposed ecological community approach within the general framework of systems approach to planning, stating that they are both, “complicated systems where components exhibit a high degree of interdependence” (1985:173), recommending that a flexible approach to tourism planning would allow for better integration of tourism plans into other regional and local plans for land use, economic and social development.

Despite reassessment and review efforts, tourism development still remains largely focused on developing plans, giving less attention to implementation and monitoring (Pearce, 2000). The acceptance of “sustainability” in tourism has not been fully translated into effective implementation, in part due to uncertainty about its principles (Baidal, 2004; Ruhanen, 2004). Co-ordination and communication among the various tourism players remains a challenge (Gunn, 1991), as does improving faulty tourism plans that have resulted in the exclusion of local populations, environmental destruction, and economic strife (Cork, 1995; Yang and Wall, 2008:166).

On a more positive note, considerations of alternative forms of tourism that recognize the environmental, social and cultural implications of tourism have become more common (Page and Connell, 2006:391). Following the Brundtland Commission report in 1987, the term “sustainable development” won the favour of many governments, academics, and practitioners in various fields, promoting economic growth in the context of environmental protection (Wall, 1997). Eco-tourism is one such alternative. There are several perspectives that offer direction for tourism planning in the 21st century. The World Travel and Tourism Council (WTTC) presented its blueprint for new tourism,

which includes three main conditions: “governments recognizing travel and tourism as top priority; business balancing economics with environment, people and cultures; a shared pursuit of long-term growth and prosperity” (2003:6-10).

Acknowledgement of the complexity of natural and human systems has inspired some scholars to suggest a more comprehensive examination of the tourism system by incorporating ideas from associated disciplines such as ecological economics and complexity theory ((Faulkner and Russell, 1997; Farrell and Twining-Ward, 2004; Russell and Faulkner, 1999, 2004; Zahra and Ryan, 2007). Faulkner and Russell (1997) explain tourism dynamics through the lens of complexity and chaos. Flexible, adaptable approaches to tourism planning that ensure regular revision and modification are needed to reflect emerging realities (Farrell and Twining-Ward, 2004): “Researchers, consultants, managers, and stakeholders need to understand complex systems through integrative and nonlinear approaches; otherwise progress will be hampered and results distorted, incomplete and devoid of full meaning” (2004:167). Burns’ (2004) Third Way approach to tourism, adapted from Giddens’ (1998) consideration of a Third Way political alternative, proposes a more participative, entrepreneurial, iterative, and socially democratic approach to tourism.

1.1.2 Defining Eco-tourism

One of the first writers to use the term “eco-tourism,” was Ceballos-Lascurain, in the early 1980’s (Boo, 1990). Since then, there has been much debate over its definition. Some like Boo (1990) and Eagles (1997) suggest that one defining characteristic is exploration of and learning about natural environments. Other definitions take into consideration a broader set of desires, as implied in The Ecotourism Society’s definition: “Ecotourism is responsible travel to natural areas which conserves the environment and improves the welfare of local people;” “Ecotourism is about creating and satisfying a hunger for nature, about exploiting tourism’s potential for conservation and development, and about averting its negative impact on ecology, culture, and aesthetics” (The Ecotourism Society, 1990 as cited in Lindberg & Hawkins 1993:8). Since the early 1990s, more frequent advocacy for consideration of conservation and local/community

development indicate an increasingly environmentally, socio-ecologically, and culturally aware era in tourism planning and management (Harrill and Potts, 2003; Tosun and Jenkins, 1998; Altun *et al.*, 2007).

The notion of an eco-tourism continuum includes suggestions that all forms of tourism are eco-tourism, since they all leave an impact on the environment, and at the other extreme, visionary formulae of zero impact eco-tourism as an ideal goal (Miller & Kaae, 1993, as cited in Stone 2002). Both characterizations are unrealistic. For the purposes of this research, a more useful definition falls somewhere between these two end points, varying depending on the level of human responsibility (Orams, 1995). **In this thesis, eco-tourism is defined as tourism which demands a high level of human responsibility involving “active contribution towards conservation and/or the improvement of host community welfare”** (Stone, 2002:16). The challenge is in integrating economic gains with environmental protection, social wellbeing, and cultural sustainability.

1.1.3 Defining Sustainability & Sustainable Communities/Livelihoods

Eco-tourism, as defined here, requires an understanding of sustainability, as a focus for continuing improvement. Gibson *et al.* documented the historical development of sustainability and “sustainable development” (2005:38-65). Much debate continues over a definition of sustainability and/or fundamentals of sustainability. Hay states that many environmentalists are concerned that ambiguity in definitions of sustainability is reflective of a deliberate attempt to use sustainability as a façade, behind which people pursue economic interests, ignoring broader environmental and social goals (2002).

The Brundtland Commission defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987:8). In the years since, the worldwide gap between rich and poor has widened, and in the view of many, the state of the environment and ecosystems has worsened (Gibson *et al.*,

2005:50). Even after the widespread official adoption of Agenda 21¹ at the United Nations first World Conference on Environment and Development and the follow-up conference at Johannesburg in 2002, worldwide expectations and goals for sustainable development have not been met (2005:49-50). The eight criteria for sustainability proposed by Gibson *et al.* were developed after consideration of the strengths and weaknesses of a range of other sustainability principles and assessment methods (2005:59-62; 206-234). (See section 3.2 in chapter 3).

Others have also considered the need for sustainability and for a sustainable tourism aligned with environmental and social goals so that communities and livelihoods are enhanced. In this research, eco-tourism is understood as a type of sustainable tourism. The principles of sustainable livelihoods are outlined by the United Kingdom Government's Department for International Development (DFID) and the Food and Agriculture Organization of the United Nations (FAO) as follows: people-centred, holistic, dynamic building on strengths, promoting micro-macro links, encouraging broad partnering, and aiming at long-term sustainability (2000:3-4).

1.1.4 Resilience

Sustainability also requires a certain level of socio-ecological resilience, as the broader framework under which sustainable livelihoods can be understood and pursued (Gibson *et al.*, 2005:116). According to the Resilience Alliance, "resilience" is "the ability of a system to absorb shocks, to avoid crossing a threshold into an alternate and possibly irreversible new state, and to regenerate after disturbance." "Socio-ecological" refers to "an integrated system of ecosystems and human society with reciprocal feedback and interdependence. The concept emphasizes the "humans-in-nature' perspective" (2007:4). This suggests systems that are adaptable and flexible. For the purposes of this research, sustainable tourism exists within and promotes optimal levels of resilience.

¹ Agenda 21 is the main document that emerged from the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil, from June 3rd-14th, 1992 (UN Department of Economic and Social Affairs, 2004). It details a set of directives and plans to address concerns about the environment and development such as "poverty reduction, technology transfer climate change, and hazardous waste disposal" (Gibson *et al.*, 2005:49). Signed by 182 state leaders, this document serves as a "blueprint for sustainable development" (Page and Connell, 2006:398). The development of indicators for measuring sustainable tourism was a major priority identified in the document (Garraway, 2005).

1.1.5 Eco-tourism—Opportunities for Sustainable Community Development

There is a growing trend towards sustainable tourism that is community-based² (Harrill and Potts, 2003), as the number of tourists seeking to experience local culture continues to grow. Dominica and other similar destinations are faced with the challenge of ensuring the protection of natural environments and socio-cultural heritage, while building livelihoods on revenues from tourism activities (Dujon, 1999:1).

The Caribbean region is considered to be one of the top tourist destinations in the world (Duval, 2004:3). The region's market share of world tourism of approximately 3% (Poon, 2002)—although not evenly distributed throughout the islands—is quite great, considering the region's relatively small geographic area. The tourism sector is extremely important to the region. Island governments are aiming to reap as many economic benefits as possible from their countries' natural and cultural attributes. However more research is needed to examine tourism in the context of sustainability and development for Small Island Developing States (SIDS) (Butler (1993), as cited in Scheyvens and Momsen 2008:491). Dominica, like many other Caribbean islands, is examining strategies aimed at developing community-based eco-tourism, as means of promoting community development across the island (Ministry of Tourism and National Development Corporation, 2005:20-21).

Community economic development has become one common response to economic hardships in countries around the world (Nel and Binns, 2002:184). Increasingly, tourism is being used as a tool to aid in economic restructuring processes (2002: 184). The growing importance of experiential tourism (including nature, culture, and soft adventure) has further heightened the popularity of areas such as the Caribbean, endowed with natural beauty and diverse cultures. According to a UNWTO report, some sectors of experiential tourism were expected to increase by approximately 20% in the next several

² For the purposes of this thesis, community-based tourism is identified as a type of eco-tourism through which experiential tourism activities can be experienced.

years (2001). With this trend, community tourism is becoming more widespread, as tourists seek more authentic experiences of the local culture.

This research hypothesizes that sustainable development of tourism on Dominica will benefit from an investigation into the key factors or settings that have been instrumental in facilitating development of eco-tourism around the island. This research examines those settings and factors, and the means through which they can be sustained and perhaps enhanced for future development.

1.2 STUDY PURPOSE, QUESTION & RESEARCH OBJECTIVES

The purpose of this study is to develop and apply an eco-tourism sustainability framework for Dominica, and to test its application through assessment of the island's present approach to eco-tourism. The Gibson Sustainability Principles (GSPs) are used as a generic sustainability guide in developing the framework. The research questions are: **What are the generic sustainability requirements for tourism to make maximum contributions to sustainability? How can the framework be applied using the case study of Dominica? What are the key considerations for eco-tourism in Dominica emerging from development of the framework and application to the case study?**

Research sub-questions are:

- What is eco-tourism and how should it be considered within the Dominican context?
- What are the current and potential key factors affecting tourism in Dominica that need to be examined?
- Can an eco-tourism sustainability framework be created for Dominica using the GSPs as a generic guide?
- How applicable is the Dominican eco-tourism sustainability framework?

The objectives are as follows:

- To identify and examine the factors that enable and inhibit eco-tourism development in Dominica
- To develop an eco-tourism sustainability framework for Dominica, using the Gibson Principles as a generic guide
- To test the framework's applicability in the Dominican context

The methodological approach is detailed in chapter 2, and is grounded in qualitative methods for data collection. Primary research included interviews and participant observations. Secondary sources were also consulted.

1.3 THESIS RATIONALE & RESEARCH CONTRIBUTION

The Government of Dominica has identified eco-tourism as a promising path towards sustainable development and as a potentially viable growth area, as the island's main economic sector (agriculture) undergoes structural changes (Skerrit, 2007). At present, paths toward eco-tourism at the community level have not been clearly delineated, presenting opportunities for development of local and regional strategies for eco-tourism development (Esprit, 2008).

Dominica's natural landscapes and environments are its primary attractors (Government of Dominica, 2006: 17). It is of utmost importance that the characteristics upon which the country prides itself are not lost because of negligence borne out of a failure to construct and implement proper strategies and approaches for the development of tourism. It is necessary to ensure that the influx of tourists will not lead to damage of natural sites and loss of traditional livelihoods for local people (Esprit, 1994:33).

This research enhances and broadens the literature on sustainable tourism and eco-tourism implementation for Small Island Developing States (SIDS), including the Caribbean islands. There is much debate in the literature over what defines eco-tourism (Leung *et al.*, 2001:21). My research aims to provide basic guiding principles and defining characteristics of, and some practical strategies for development of eco-tourism on the island of Dominica. These guidelines may be useful to studies of eco-tourism options in other countries with similar economic, biophysical, social, and political structures.

As a theoretical contribution, this research is an addition to the currently emerging body of work on resilience thinking/theory (Resilience Alliance, 2007), with special focus on SIDS. It also attempts to apply Gibson's sustainability criteria to the case of Dominica and the wider Caribbean, offering one test of the Gibson Principles (Gibson *et al.*, 2005:62).

The applied contribution of this research is to develop a set of practical guidelines for the sustainable development of Dominica's eco-tourism sector, emphasizing environmental integrity and recovery, support for the agricultural sector, and development of sustainable livelihoods for local people. Within these guidelines, this research specifies mechanisms and measures for governance and implementation. Based on this analysis, recommendations will be provided for the Government of Dominica for changes and/or adjustments to existing policies, practices, strategies, plans, and programmes.

1.4 METHODS

This thesis attempts to identify key requirements for an eco-tourism sustainability framework, using ideas from the conceptual framework set out in chapter 3. The framework is then specified for Dominica after more case specific considerations. Chapter 2 provides details on this approach to research.

1.5 ORGANIZATION OF THESIS

In chapter 2, research methods are outlined, and details are provided on data management, analysis, and verification. Chapter 3 expands on the conceptual framework and the research methods used to arrive at logical answers to the research questions: What are the generic sustainability requirements for tourism to make maximum contribution to sustainability? How can the framework be applied using the case study of Dominica? What are the key considerations for eco-tourism in Dominica emerging from development of the framework and application to the case study? Discussions and debates surrounding sustainability and tourism are further explored. The integrated systems approach to sustainability is highlighted as a reasonable and justifiable approach to the concept of sustainability, and sets the standard for exploring the Gibson Sustainability Principles, which are later used as a general guide to formulate an eco-tourism sustainability framework.

Chapter 4 provides a broad overview of the island's economic, social, and cultural setting. The significance of tourism, as compared to the other sectors of the economy, is highlighted. The 5th chapter describes the island's tourism resources and examines more closely the significance of tourism on the island, while identifying key considerations for elaborating the framework. Findings are discussed and analyzed in chapter 6, through detailed consideration of the major factors that have enabled and hindered tourism development. Throughout chapters 5, and 6, special reference is made to the Roseau Valley, as a case within the case study of Dominica

A comprehensive eco-tourism sustainability framework for Dominica is presented at the end of chapter 6. In chapter 7, there is further analysis of Dominica's tourism in relation to the framework. The thesis concludes with a consideration of the potential broader applicability of the framework, and implications for future development of tourism with relevant recommendations for the Government of Dominica in chapter 8.

CHAPTER 2: METHODOLOGY

2.1 OVERVIEW OF METHODS

Methods used were qualitative. They were developed to assess the present state of eco-tourism in Dominica, considering both the industry and its larger ecological, political, social and cultural context, and to build a framework for identifying and pursuing opportunities for enhancing contributions to sustainability through eco-tourism on the island. This thesis poses mainly what and how questions, making the qualitative approach suitable (Yin, 2003). A case study approach provided a methodological focus (Creswell, 2003: 14-15).

This research was exploratory. The main case study analysis strategies used were a “reliance on theoretical propositions” strategy and “developing a case description” (Yin, 2003:109-114). In the first strategy, the theories against which my findings were tested centred on the sustainability, integrated systems, and community economic development theories discussed in chapter 3. Based on these, the Gibson Principles were chosen as the basics for developing sustainable eco-tourism guidelines. Developing a case description was important in order to recognize the particulars of the Dominican context and to identify lessons to be learned and implications for other areas. Analysis of multiple cases would have increased the generalizability of this research; however, this was not practical, considering time and financial constraints. Nevertheless, the general recommendations may be useful if applied to other destinations with similar ecological, political, social, and cultural situations.

The research strategy was triangulated through review of government policies, government documents, and other relevant literature as well as interviews, and participant observations. The use of two or more research strategies is discussed by Esterberg, who states that using multiple strategies usually ensures a strong research framework (2002:37). Furthermore, empirical research can be useful and progressive insofar as it is employed together with theory and tested by logical inquiry (Yin, 2003: xv). In an effort to facilitate logical inquiry, interviews were employed. Knowledge and information

gathered from all participants was used to identify useful theoretical and practical considerations for tourism development.

2.2 THE CASE STUDY METHOD

The island of Dominica is my case study. The Roseau Valley was the case within this broader context. Based on this “case within the case,” information was gathered to be used in creating a framework for developing and evaluating options for strengthening eco-tourism on the island and perhaps other Caribbean countries as well. (See maps 4.2, 4.3, and 5.1b in the appendix for the case study areas).

Yin (2003) offers a thorough elaboration on case study research as a non-laboratory social science methodology. This research style includes the following characteristic elements: problem definition, design, data collection and analysis, composition, and reporting.

He lists and explains five major characteristics of a good case study: “case must be significant; complete: consider alternative perspectives; display sufficient evidence; and, composed in an engaging manner” (2003:161-165). Authors such as Corcoran *et al.* take the discussion further by mentioning that there is a need for more case studies that can be applied to the real world and lead to practical solutions (2004:7). This research thoroughly examines the case in question, exploring its social, economic, and environmental characteristics, so that recommendations made and conclusions drawn are well founded.

Case study research should allow for reflection on ethical issues. According to Esterberg, whether or not one chooses to tackle ethical questions can speak volumes about the legitimacy of one’s research (2002:44-45). For this research, ethics is addressed in the conceptual framework, which finds its basis in sustainability ideals. As well, the broader politics that surrounds case study research can influence one’s findings and interpretation of data. Examining broader issues of power relations and motives behind the research is crucial to determining the value and usefulness of case study research (Creswell,

2003:62-67). For this research, awareness of these issues was taken into account in determining the manner in which primary and secondary data was collected. For example, opinions were sought from groups from multiple sectors of society. This research has received ethics clearance from the University Of Waterloo Office Of Research Ethics.

2.3 CASE SELECTION

Case selection has been done on the basis of degree of relevance to the topic of eco-tourism and the practicality of conducting research within this destination.

2.3.1 Case Selection Rationale: Dominica

Dominica was a suitable choice for investigation because of the growing importance of eco-tourism on the island; its virtually untouched natural environment; a rich cultural heritage; the need for economic diversification; limited knowledge, capacity, and resources to manage tourism properly; the fact that tourism development is a priority for the Government of Dominica; the urgency of properly planning a sustainable future in tourism; and my knowledge of and connections on the island.

Much can be learned from this case, considering that tourism in Dominica is still in the infant stages. It is an opportunity to explore the potential benefits of tourism guided by sound sustainability ideals—something that is not practiced in most Caribbean tourist destinations.

2.3.2 Case Selection Rationale: The Roseau Valley

The Roseau Valley was chosen as a main reference point since it possesses the largest concentration of tourist destinations on the island, namely Trafalgar Falls, Middleham Falls, Freshwater Lake, Boeri Lake, Boiling Lake, Titou Gorge and numerous hot sulphur springs. (See Map 5.1a in chapter 5 showing some natural attractions in the Roseau Valley). Also, since the researcher was raised in the valley village of Trafalgar, existing connections and social networks made it easier to collect information. Trafalgar Falls, in

particular, is one of the major tourist attractions on the island (Discover Dominica Authority, 2008:4).

More importantly, the Roseau Valley is representative of many of the significant tourism and sustainability-related issues affecting communities around the island. Therefore, findings based on the Roseau Valley case are most likely applicable to other localities.

2.4 DATA COLLECTION

2.4.1 *Secondary Information Sources*

Secondary research started in September of 2007 and ended with completion of the final draft in April 2009. Esterberg uses the term “unobtrusive measures” to refer to an approach whereby one analyzes texts and material artefacts (2002:116-130). It was understood that the sources relied upon should be reliable and credible, so that my research findings are set upon a trustworthy and legitimate foundation. This research made use of academic articles, news items, books, and other government documents. Preliminary research from September 2007 to April 2008 revealed some of the perspectives and debates surrounding eco-tourism development in general and in the Caribbean context. As expected, the literature directly relating to Dominica was very limited, but sufficient to provide a general understanding of some of the main tourism issues. This understanding was further corroborated and expanded after conducting field research on the island from June to August 2008.

The review of relevant literature on the island (in the form of government policies and government documents) provided insights into the various proposed strategies for a more sustainable approach in Dominica. Such document research was helpful, and complemented by review of documents identifying lessons learned from other similar case studies within the Caribbean region.

2.4.2 Primary Information Sources: Interviews

Considering the time constraints of my study and my particular objectives, I decided to conduct key informant interviews. Snowball (or chain referral) sampling was identified as most suitable in this case.

Table 2.1: Government and Quasi-Government Bodies and Their Functions

Department/Agency/Organization	Function/Involvement	Number of Interviews	Date (2008)
Ministry of Tourism, Industry and Private Sector Relations	tourism policy, planning	2	July 1st & Aug 27th
Agriculture, Fisheries and Forestry	agriculture-related management for sustainable livelihoods; fisheries management; management of national parks, forest reserves and wildlife; management of all eco-tourism sites	7	July 2nd-Nov 20th
Discover and Invest Dominica Authority (Quality Assurance Unit)	Product development, marketing, and investment	4	June 27th-July 10th
Education, Human Resource	Capacity-building; skills development	1	Sept 16th
Ministry of Health (Solid Waste Management Corporation; Environmental Health Department)	integrated system for public education and awareness and for the collection, treatment, recycling and disposal of solid and hazardous waste; conservation and maintenance of the environment in the interest of health generally and in relation to places frequented by the public	2	Sept 17 & 24th
Ministry of the Environment (Environmental Co-ordinating Unit)	promote emissions reduction technologies, programmes, and activities; general public awareness of environmental issues; advise government on environmental issues	1	Aug 14th
Air and Sea Port Authority	operate official ports	1	Sept 25th

Initially, key players in the tourism industry were interviewed (Creswell, 2003: 93). They were chosen from an informal network of contacts, who referred me to other possible interviewees. Prior to beginning the interviews, the main tourism stakeholders were identified, based on the preliminary research. As can be seen in tables 2.1 and 2.2, key informants from different sectors were targeted, including officials from both central and local government, and other professionals and individuals within the communities, in order to gather diverse perspectives and to ensure a well informed analysis. The tables highlight some of the major sectors/departments from which key informants were interviewed.

Table 2.2: Main Service Providers Interviewed

Groups	Function/Involvement	Number of Interviews	Date (2008)
Tour Guides	private service	1	Aug 30th
Tourist Vendors	private service	3	Sept 13th
Taxi Operators/Bus Drivers	private service	5	Sept 5th, Sept 19th
Accommodation (Hoteliers and Owners of Guest houses) & Private Business Owners	private business	10	June 16th-Aug 30th
Natural Site Developers	private business	4	June 16th-Aug 10th

A number of others not identified under these headings were also interviewed. The majority of interviewees agreed to have their names used in the thesis. In such cases, the full names and professional titles are used. In cases where informants requested anonymity, reference is made to the sector in society with which they are generally associated, without identifying them explicitly. (See Appendix C for the complete list of participants). In total, 50 interviews were carried out with key informants.

For some interviewees, a two stage interview technique was employed. Initially, general questions about the topic were asked, followed by a synthesis of this information. In the second round of interviews, there was a review of some of my initial findings in the hope of sparking further discussions, and somewhat different questions were asked, based on my preliminary analysis.

During the interview question construction phase, additional information on interview methodologies was gathered in order to ensure reasonable and relevant responses that were not pre-determined by me. A key consideration was ensuring that my own pre-conceived ideas and perspectives were not allowed to distort the study. Research assumptions can easily be influenced by the lens through which the researcher views the world (Peshkin, 2001: 242). Esterberg provides much insight into preparing for an interview and tips on the kinds of questions to ask. Her discussion on the various types of interview styles assisted in pointing out the style that was most suitable to my study—the semistructured interview (2002:87). This approach allowed me to have a list of questions, which served as a guide for a more in-depth discussion with the interviewees.

I attempted to establish a certain level of comfort between myself and the research participants by engaging in informal conversations prior to scheduled interviews. This was done to ensure that interviewees expressed their opinions freely. The fact that I am a national of the country further aided in creating a degree of comfort.

2.4.3 Primary Information Sources: Participant Observation

One other research technique was participant observation. It assists in reconciling theory with reality, and in understanding people's ways of life and their opinions as they relate to eco-tourism development and the viability and sustainability of their communities (Esterberg, 2002:61; Creswell, 2003:21). My role as a participant observer was a challenge because of my insider/outsider role as a researcher in my home country. I was mindful of the possibility of those being observed altering their normal behaviour, in order to give a desired impression. There was an attempt to minimize this occurrence by comparing my observations with information gathered from other research methods.

My main considerations were establishing boundaries of the site; deciding on exactly what to observe; deciding on how much observing and participating to be done; addressing issues of formal permission; developing trust relationships; and, properly interpreting what was observed (Esterberg, 2002: 57-80). The first three considerations were determined based on the objectives of the study and on the need to limit the research area to a manageable size. Studying the whole island was most appropriate, because the factors that enabled tourism development can best be described for the island as a whole. Formal permission was not required for general island observations, or for observations made within the Roseau Valley. However, key informants were contacted and made aware of my study undertakings.

2.5 DATA MANAGEMENT, ANALYSIS, AND VERIFICATION

2.5.1 *Data Management*

Management of data refers to the storing, organizing and accessing of the information collected. This was important to ensure that no information was lost and to aid in proper data analysis. All secondary data were critically reviewed to form part of the literature review section, which informed the data analysis section. Essentially, each Gibson sustainability requirement was used as a theme to guide the organizing of further data.

Most information from interviews was collected by note-taking and audio recording. The audio recorded interviews were saved electronically and encrypted for security purposes. All primary information was thoroughly reviewed and colour coded under themes that correspond with key considerations within the conceptual framework summarized at the end of chapter 3.

2.5.2 *Data Analysis*

Analysis of data was done continually during the research as the information was categorized under themes. The specified sustainability principles framework served as a guide for analysis. The general framework for sustainable tourism was further developed to suggest a more specific framework for sustainable tourism based on more detailed

understanding of the Dominican context as revealed in the case research. This sustainable tourism framework was then used to assess Dominica's tourism at present. The state of Dominica's tourism was measured using the detailed framework developed from primary and secondary data. As noted above in chapter 1, the detailed framework incorporates the generic sustainability criteria from Gibson with other sustainability requirements from the conceptual framework in addition to the main considerations particular to tourism in Dominica, including factors or circumstances that enabled and continue to enable the existence and development of tourism on the island, and key gaps, limitations and other challenges to be overcome. The critical questions asked are: (i) how well do these factors serve growth of sustainable tourism? and, (ii) how can they be further enhanced and improved to ensure continued sustainability?

2.5.3 *Data Verification*

Validity and credibility are highly important in research. As Huberman and Miles recognize, "if qualitative studies cannot consistently produce valid results, then policies programs, or predictions based on these studies cannot be relied on" (2002:37).

Whittemore *et al.* (2001) express the need to distinguish between criteria and technique in qualitative research. Criteria, which are defined as "the standards to be upheld as ideals in qualitative research" (2001:528) centre on credibility, authenticity, criticality, integrity, explicitness, vividness, creativity, thoroughness, congruence, and sensitivity. Techniques are the methods used to ensure validity and are incorporated into the research design, data collection phase, analysis, or in the presentation (2001:528-533).

Verification of research implies a process of checking, reviewing, confirming, and corroborating, which ensures the validity, reliability, and authenticity of research findings and resultant conclusions (Morse *et al.*, 2002: 9). Five major verification strategies are identified by Morse *et al.*; these ensure: (i) coherence within the methodology; (ii) suitable sample; (iii) collecting and analyzing simultaneously; (iv) theoretical thinking; and, (v) development of theory. Methodological coherence ensures that the research methods used match the study questions, which will be consistent with the kind of data received and analytical processes. It encourages flexibility, as each component informs

the other during the development and progression of the research. Modifications may have to be made to the various components as the study proceeds, in order to achieve overall research goals and objectives (2002:11-13).

The sample of chosen interviewees should have sufficient knowledge of the research topic, in order to ensure relevant information is gathered. Also seeking opposing perspectives reveals information that may not have been too obvious; thereby, illustrating thorough comprehension of the topic and completeness of research. The concurrent collection and analysis of data aids in identifying what information has already been obtained and what still needs to be gathered. This process offers guidance to the research and helps the investigator identify areas that require further exploration. Theoretical thinking ensures that the data being collected are confirmed by new data, which should in turn be corroborated in data already collected. The continuous examination of data accumulated and the theoretical considerations gives rise to new theories in the following ways: “(i) as an outcome of the research process;” and (ii) “as a template for comparison and further development of the theory” (2002:13).

These issues were addressed for this research in a number of ways. Triangulation was used—a process by which information was gathered from multiple relevant sources. Data were collected over an extended period of time, allowing for persistent observation and multiple interviews from different stakeholders. This process also allowed for the consideration and convergence of different types of knowledge, which is a crucial requirement for validity. Intensive transcription of recorded interviews ensured review of data and accounted for accuracy in translation. Analysis was done throughout the process, as new data were gathered. As a result, recurring themes and issues emerged, confirming the accuracy of data. A theoretical framework was used to guide the research and data collected offered guidance for the further development of theory.

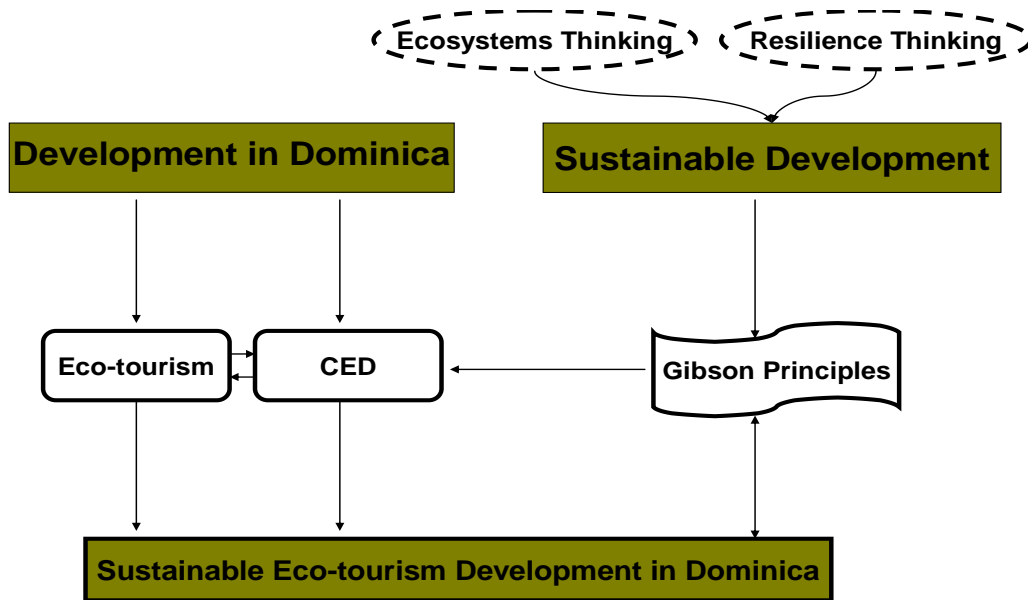
CHAPTER 3: CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

3.1 CONCEPTUAL FRAMEWORK

Sustainability is the overarching theme and the desired ideal, placed here in the context of tourism for the purpose of examining tourism's ability to bring long-lasting benefits to Dominica. The ultimate goal is to attain a sustained level of development that will be evident in an increased standard of living, a healthy ecosystem, a viable economy, and an overall enhanced wellbeing of people. A first step in addressing this goal is an evaluation of extent of sustainability attained thus far. The Gibson Sustainability Principles (GSPs), which must be specified for the context, serve as a broad guide and tool for assessing and informing advanced sustainability assessment, so that the ultimate goal stands a better chance of being realized. Gibson's principles are grounded in acknowledgement of the inter-connectedness of natural and human systems, and the importance of developing new ways of thinking that will bring lasting mutual benefits (Gibson *et al.*, 2005).

The Brundtland Commission's definition of sustainability has been used for the purposes of this thesis, adapted to the specifics of my case. As mentioned in chapter 1, it is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987:8). Critiques of the Brundtland Commission have noted that it was based on the premise that there must be growth, that the definition is highly ambiguous, and that it has been used by different parties in an attempt to use "sustainability" as a façade, while pursuing their own interests (Goldin, 1995; Sachs, 1999). In order to address these criticisms, I have attempted to draw from Gibson's insights on sustainability assessment and sustainability criteria, relating these to my particular case (Gibson *et al.*, 2005). For the purposes of this thesis, therefore, sustainability is considered as the Brundtland Commission's understanding of the term, grounded in a set of sustainability requirements that support social, economic and environmental soundness.

Figure 3.1: Conceptual Framework & Criteria



3.1.1 Pillar Approach Versus the Integrated Systems Approach to Sustainability

Conventional ways of thinking about sustainability have considered the three elements of economic, social, and environmental considerations as separate competing entities. These pillar-based approaches to sustainability refer to decision making processes that seek to balance opposing objectives for optimally desirable outcomes. Elkington, who writes about the “triple bottom line” (TBL) provides an example of the pillar-based approach (1998, as cited in Del Matto, 2007:16) based on the following three pillars: economic prosperity, environmental quality, and social justice. It is not surprising that this approach has been so extensively incorporated into sustainability models, since it falls in line with the structured government systems and organizations, associated with separated economic, social, and environmental disciplines (Gibson, 2006: 263).

Efforts to move away from this pillared approach are needed in a world where there are interconnections among the economic, social, and environmental realms and where there have been many negative impacts caused by ignorance of these cross-sectoral links. In

light of these and other realities, the pillar approach to sustainability has come under strict scrutiny (Lehtonen, 2004; Pope *et al.*, 2004; Gibson *et al.*, 2005; Gibson, 2006).

Pillared approaches have led to much conflict (Pope *et al.*, 2004; Gibson *et al.*, 2005; Gibson, 2006, as cited in Del Matto, 2007:16-17). Efforts to reconcile objectives and to integrate goals have proven immensely challenging and mostly unproductive, because the pillar approach presents each component (economic, social, and environmental) as operating independently (Lehtonen, 2004). In so doing, crucial interdependencies and complex feedback relationships typical of systems are largely ignored (Gibson, 2006:263). It advances the status quo—the very thing sustainability should challenge (Lehtonen, 2004). The pursuit of economic advancement often comes into tension with environmental conservation efforts. This tension is evident in very rigid governmental structures. Further, the lack of holistic and integrative methods for data collection that consider cross-pillar concerns is a major criticism of conventional approaches to sustainability assessment (Gibson, 2006: 263). As Orr so rightly stated, there needs to be more conscious thought about the natural world around us, before we become bogged down by the strict statutes of the various disciplines (1994:94-95).

A more integrative approach to sustainability questions and challenges the long established institutions and social structures that support or contribute to unsustainability (Dovers, 2001:7). This alternative—an integrated systems approach to sustainability—seeks to address the deficiencies presented by the more conventional approach.

The Integrated Systems Approach

The integrated systems approach emerged as a concept for understanding and assessing in this complex world, where multiple processes occur at numerous scales in time and space. It was the product of sustainability research done by scholars such as Holling (1986; 1995); Robinson *et al.* (1990); Kay *et al.* (1999); Kay and Regier (2000); Gibson (2002); Gibson *et al.* (2005) and Gibson (2006) (DelMatto, 2007:18)

Box 3.1: Properties of a Complex System

Non-Linear: Behave as whole, a system. Cannot be understood by simply decomposing into pieces which are added or multiplied together.

Hierarchical: Are holarchically nested. The ‘control’ exercised by a holon of specific level always involves a balance of internal or self-control and external, shared, reciprocating controls involving other holons in a mutual causal way that transcends the old selfish—altruistic polarizing designations. Such nestings cannot be understood by focusing on one hierarchical level (holon) alone. Understanding comes from multiple perspectives of different types and scales

Internal Causality: Non-Newtonian, not a mechanism, but rather is self-organizing. Characterized by: goals, positive and negative feedback, autocatalysis, emergent properties and surprise.

Window of Vitality: Must have enough complexity but not too much. There is a range within which self-organization can occur. Complex systems strive for optimum, not minimum or maximum.

Dynamically Stable? There may not exist equilibrium points for the system.

Multiple Steady States: There is not necessarily a unique preferred system state in a given situation. Multiple attractors can be possible in a given situation and the current system state may be as much a function of historical accidents as anything else.

Catastrophic Behaviour: The norm

Bifurcations: moments of unpredictable behaviour

Flips: sudden discontinuity

Holling four-box cycle: shifting steady state mosaic

Chaotic Behaviour: our ability to forecast and predict is always limited, for example to about five days for weather forecasts, regardless of how sophisticated our computers are and how much information we have

(Kay *et al.*, 1999:726)

The term “integrated” refers to the process involved in the pursuit of sustainability, while “systems” indicates the manner in which sustainability is understood, learned, and assessed (Del Matto, 2007:18). This approach draws mainly from active consideration of intra and inter system connections, and attempts to offer solutions that tackle multiple problems simultaneously. Waltner-Toews and Kay discuss the ecosystems approach, which addresses environmental issues in a more comprehensive, holistic manner, taking into account the numerous dynamics throughout entire systems (2005). Characteristic behaviours of complex systems are highlighted in Box 1 above (Kay *et al.*, 1999:726). In such systems the world is viewed through the lens of its interrelated parts. The different parts or systems operating together are referred to as nested holarchies. Horizontal and vertical levels of interaction occur simultaneously. Each level is of equal importance and

is necessary for the proper functioning of the entire system. The unpredictable nature of complex systems is evident in their capacity to reorganize, sometimes in an unexpected manner. Therefore, there is great uncertainty when operating and managing in the system. Nevertheless, choices have to be made, and there arises the important question of who should be involved in making those choices. All major stakeholders should be involved in making decisions so that choices are made based on the most complete picture possible and do not take narrow views, sacrificing fundamental socio-ecological functions for short term gains (Gibson, 2009).

Patterson *et al.* provide a description of an integrated model for the Commonwealth of Dominica that attempts to account for the present and potential interactions among ecology, economy, and society as they relate to tourism development strategies (2004:121), and as an approach to integrated resource management within a tourism development context. Effectively, they take a complex systems approach. This model, however, is subject to criticism based on the types of assumptions made. For instance, data were collected and incorporated into the model, but in instances when there were no data available, the model was calibrated to automatically produce “realistic dynamics” (2004:123). How does one determine what is realistic in a complex system? One must be careful not to over-simplify natural and human systems and their interactions. In complex and unpredictable environments, decisions have to be made and plans executed. Detailed study and examination of the human and natural environments is of paramount importance in sustainability assessment. It calls for a different way of thinking that favours precaution in decision-making and assessment techniques (Gibson, 2009).

Resilience Thinking

Ecosystems theory demands an approach to planning that supports the creation of resilient societies and environments. Walker and Salt refer to a holistic approach to resource management (2006). The idea of resiliency suggests that communities must be able to adjust to changes in physical, social and economic environments, and still retain their capacity for recovery and survival. McCarthy presents the following resiliency criteria (originally from Walker and Salt): diversity; ecological variability; modularity

(system highly connected is more likely to collapse); acknowledging slow variables; tight feedbacks: not too tight; social capital; innovation; overlap in governance; consideration of the unpriced ecosystem services (2007). Essentially, he is proposing appreciating and managing natural and human systems by taking into account the complex and uncertain nature of environments. A resilient system is sufficiently adaptable to redefine itself, and to continue supporting vital life processes after disturbance.

Easter (1999) discusses the vulnerability of small island states, and highlights their susceptibility to natural disasters as one of the contributory factors. Other underlying factors such as economic weaknesses and fragile trade relations worsen these countries' vulnerability. Easter makes specific mention of Dominica's own vulnerability, as a country susceptible to natural disasters and heavily dependent on a few exports. Any eco-tourism development plan must take into consideration the reality of natural phenomena on the island and various factors that hinder small island economies more broadly.

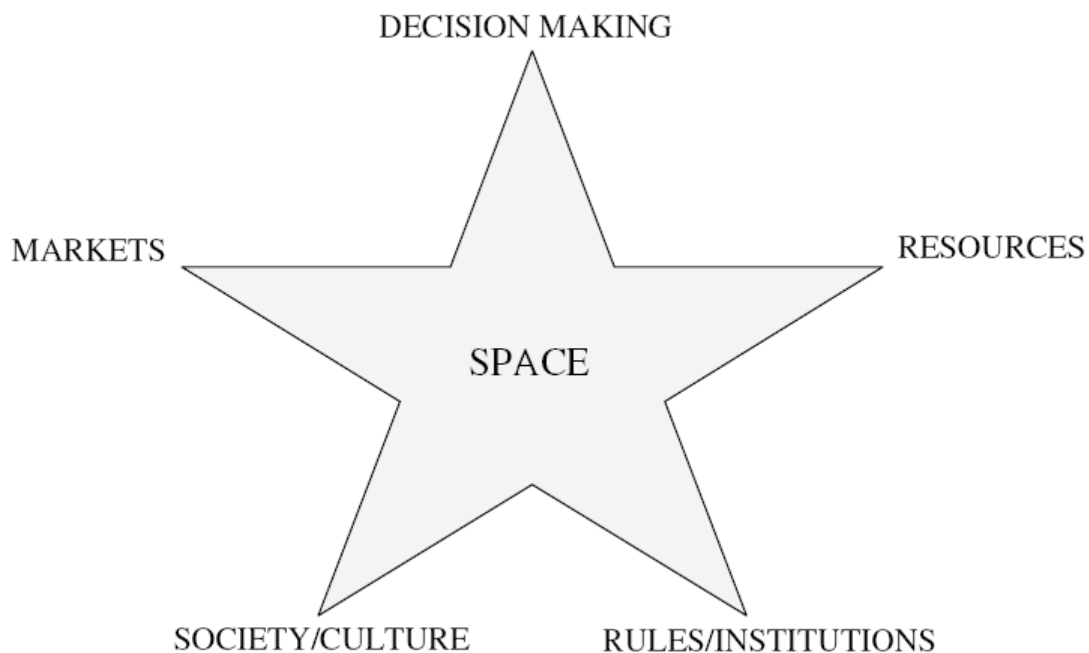
3.1.2 *Community Economic Development and Sustainability*

A major goal for tourism development is to ensure the development of communities, societies and nations. Boothroyd and Davis (1993:230) discuss in detail various interpretations of the term "community economic development (CED)" expressing it in three main different ways as ceD, Ced, and cEd, with the emphasis on the word behind the capitalized letter in each case. In cEd there is focus on economic growth like jobs and increased income. With ceD, both monetary and nonmonetary values are included, and Ced, focuses on market and nonmarket principles and ideas of caring and sharing and equity. The challenge lies in combining these three in an effort to create sustainable communities. The stress is on the need to aim for stable states, and not just growth states, which put greater emphasis on economic values. They suggest that their approach to CED is not consistent with mainstream views and approaches, because we have a culture that is wrapped up in individual interests. The authors argue that it is possible to overcome that norm. They see the usefulness in ensuring that goals are reassessed to determine what is important and what needs to be changed or modified.

Shaffer *et al.* present a new paradigm for Community Economic Development (CED). They illustrate this paradigm with a star diagram incorporating the following elements: “resources, markets, space, society/culture, rules/institutions, and decision making” (2006:62). “Space” is located in the centre of the star, perhaps to indicate that all these elements and activities occur within a space of some sort. They define this approach to CED as holistic or truly interdisciplinary.

They argue that community economic development is not only about capitalizing on land, labour, and capital, but that it is also about engaging willing (and even unwilling) collaborators in building a long-term strategy: networking and expanding the resource base beyond the community’s physical boundaries; addressing the problem of disconnects and ensuring better flow of information and experience between and among local firms (2006:66)

Figure 3.2: The Star of Community Economic Development



(Source: Shaffer *et al.*, 2006:62)

Although it may not have been their objective in this article, the discussions could have been further enhanced with a brief discussion on a clear framework or set of criteria for sustainability through which these activities could be achieved. Shaffer *et al.*'s arguments remain oriented towards an ultimate goal of economic gain. Also, their model does not properly express the relationship or the dynamics between and among its various elements. Boothroyd and Davis on the other hand, do emphasize sustainability as a crucial element of development but do not articulate the criteria used to ground their opinions (1993).

Deller echoes the views of many other experts in his field, that communities may overcome many barriers to development through collaboration. The pooling and sharing of resources such as knowledge, education, and experience realized through multi-community partnerships and cooperatives can greatly aid in community economic development. Furthermore, Deller expands his argument to mention that there are some serious barriers to forming such community collaborations. These include: the unwillingness of local governments to share power with external cooperative organizations; loss of community pride within the individual communities; jealousy between and among communities; and, under representation of particular parties (2003:2).

3.1.3 *Social Capital and Sustainability*

Community development discussions may benefit greatly from consideration of social capital as a major factor influencing the quality and sustainability of such development (Dale, 2005:13-28). Das argues for the usefulness of building bonding social capital—casual horizontal ties between families, friends and people in community through norms of reciprocity—(World Bank, 2001a:128, as cited in Das, 2004:30). Bridging social capital—horizontal connections, i.e. connections to people with “broadly comparable economic status and political power,” but with different demographic, ethnic and geographical backgrounds (Fine, 2002, as cited in Das, 2004:30), implies a larger social and spatial scale than bonding capital and refers to civic engagements such as community organizations, and sports and youth clubs.

Das also highlights some important factors that tend to undermine the ties of social capital. He argues that trust and reciprocity are often weakened when poor communities are left to fend for themselves without the help of the state. Citing a study conducted in Remuna and Chasakhanda, eastern India, Das points out that, although there is a certain level of trust and reciprocity among people of common class³ positions, this is often destabilized by four main factors, which include the common class factor, the spatiality factor, the heterogeneous nature of class, and political differences (2004:34-38). These factors may also work to undermine bridging capital. For these reasons, reciprocity and trust do not develop easily. They are ideals to work towards. Some of these factors such as political differences and the common class factor are very relevant to the Dominican case.

Fukuyama holds a similar opinion when he mentions that, in order for states to improve social capital, there ought to be an awareness of the heterogeneous nature of communities, in terms of class, religion, culture, and political affiliation, and how these affect local relationships; combating ignorance and corruption through education and training; providing public goods; respecting local jurisdictions, and identifying activities that are best managed by local levels of power (2001:17-8).

Woolcock and Narayan argue that there is much to be gained from building bonding social capital, stating that it has proven to be a major contributor to trust and reciprocity relations among people. Such relations in turn, have aided development efforts (2000:226). They explain the interplay of bonding and bridging social capital as a sort of network, within which there is a system of reciprocity and trust through the creation of various community services, from baby-sitting to emergency cash, as well as a system of distrust, which develops from negative social ties. They give the example of indigenous groups in Latin America that have strong social cohesion, but are unable to facilitate meaningful development (Narayan, 1999). Woolcock & Narayan state that this problem stems from the fact that such community groups do not have the vertical ties needed to augment their resource base and to improve their access to power (2000:228). There is a

³ 'Common class' here refers to similar economic standing.

general consensus that both strong intracommunity ties and weak extracommunity connections are needed, in order for social capital to be effective in improving the living standards of the poor (2000:228). Intracommunity ties refer to the bonding social capital, while extracommunity connections are the horizontal ties characteristic of bridging social capital.

Evans has promoted “state-society synergy” as an effective, viable approach to realizing the true potential of social capital (Evans, 1996:1119). The two main elements of this synergistic paradigm are complementarity and embeddedness. The former basically refers to the government contributing resources to the community, while the community contributes to itself, while the latter refers more to action by government officials of penetrating communities (Das, 2007). Complementarity allows states to aid communities by providing basic resources and empowering people to become self-sufficient. In so doing, it necessitates embeddedness (Evans, 1996:1120-21). These two concepts stem from horizontal as well as vertical relations. Success or failure of social capital therefore, lies in the balance that is created between the two, and this may vary from one country to another.

3.1.4 Sustainable Tourism

Sustainable tourism is increasingly becoming a desirable option as sustainability becomes more of a priority on the agendas of governments and other public and private entities.

It takes into consideration many of the concepts outlined above, ensuring environmental and cultural protection, and producing economic returns for the long-term. Holden identifies two meanings of the term: “advocating the sustaining of tourism in a destination” and advocating **“tourism as a vehicle for achieving sustainable development, which encompasses much wider socially determined goals and priorities”** (2000: 182). He states that guidelines for sustainable tourism emerge from the former definition. For the purposes of this thesis, sustainable tourism is defined according to the latter definition.

Apostolopoulos and Gayle identify crucial challenges faced by small island states in

developing sustainable tourism and propose a framework for achieving sustainable tourism. This framework includes three interacting components: a flexible monitoring system, strategic positioning, and sustainability (2002: 289). They mention that previous frameworks have looked at the individual components but failed to look at all three and how they may interact to ensure competitive advantage. The authors also outlined five research initiatives for planners: using “more realistic computer-modeling applications; better tools for environmental monitoring; the development of more user-friendly indicators; increased use of Geographic Information Systems (GIS); and, the proliferation of eco-tourism experiments and island case studies.”

One of Poon’s main arguments is that sustainable eco-tourism requires the tourism sector to be linked with other productive sectors of the economy such as “agriculture, light manufacturing, professional and business services, culture, environment, sports, entertainment, and other ancillary services or even with local communities and small, micro and medium-sized businesses” (2002:17). There is also the challenge of ensuring environmental protection. There is a need “to enhance the environmental management capacities in the public and private sectors...” (2002:16). Holden expresses views similar to Poon’s, stating that it is important to look at planning beyond eco-tourism or the development of natural sites, and focus on the environment as a whole and as a sector from which production can emerge while ensuring environmental integrity (Holden, 2000).

In one of the earliest integrated tourism initiatives, Lindberg and Hawkins offer an eco-tourism guide to planners and managers, in an effort to provide some guidance for practical approaches to eco-tourism development and management. They draw insights from studying areas such as Belize, Senegal, and Nepal where eco-tourism projects have ranged from devastating to successful. They conclude that eco-tourism has been most successful in areas where programmes and projects emerged and developed from the community or village level (1993: 164).

3.1.5 *Gibson Principles for Sustainable Development*

In order for tourism to bring lasting benefits to communities, there must be serious consideration of the complexities within and between human and ecological systems. It is useful to identify a set of guiding principles for sustainability that encapsulate all the theories and concepts in the foregoing discussion, as a means of offering practical guidance for sustainable tourism development.

Gibson proposes eight criteria for sustainability: socio-ecological integrity, efficiency, sufficiency, opportunity, intra and inter-generational equity, civility and democracy, and precaution (Gibson *et al.*, 2005:62). He argues that progress towards sustainability requires efforts to reduce vulnerability and improve resiliency of populations and ecosystems; to plan for uncertainty and complexity; to consider environment and resource problems on a contextual basis; to recognize the uniqueness of each case; and, to sustain natural systems, which are the basis of all human development. These core principles are grounded in a thorough acknowledgement of the inter-connectedness of natural and human systems, and the importance of developing new ways of thinking that will bring lasting mutual benefits. They have been chosen as a guide for developing a framework for sustainable tourism. They are a broad set of criteria intended to inform and nurture a more sustainable future, which, in this case, involves the development of tourism. The Gibson Principles are stated in the following section.

Scholars who have commented on the usefulness of the Gibson principles include Rosenthal (2004); Donnelly and Boyle (2006); Morrison-Saunders (2006); Morrison-Saunders and Therivel (2006). Others such as Pope *et al.* (2004); and, Pope (2006) have acknowledged the importance of moving away from the three-pillar approach to sustainability, and of identifying sustainability principles for assessing the sustainability of development and decision making (Hermans and Knippenberg, 2006:299). In a review of *Sustainability Assessment—Criteria and Processes*, Morrison-Saunders states, “An important point is to move beyond the three pillars or triple bottom line approach of considering social, economic, and environmental parameters separately, to embrace a truly integrated approach to sustainability assessment” (2006:400).

Morrison-Saunders and Therivel suggest that Gibson's principles offer a new way of thinking about sustainability and that there is true potential in their application—potential that will ensure lasting results and desires (2006). Pope also agrees with the opinion that they encourage a new way of thinking that challenges scholars to transform the decision-making process (2006).

The principles are not the perfect quick fix to all sustainability woes, but are broad guidelines that can be tailored to specific cases. A major limitation is that their broad generic nature makes it difficult to apply them to specific cases for effective decision-making (Pope, 2006: ix). Gibson *et al.* acknowledge the insufficiencies of the principles. They state that each requirement cannot be easily assessed in a given case, and that trade-offs and compromises are almost inevitable, considering the challenge of integration in a highly complex world (2005:119). Many of the implications of these requirements have not been firmly grounded in practical application and they need to be developed further within specific cases (2005:119). These challenges are essentially what this research has attempted to address studying the natural and human environment in a particular case, and developing a framework based primarily upon the GSPs. The challenges of integration and trade-offs are expected in a complex system. Although this thesis will attempt to address such limitations through examination of the case, there will be room for further research and assessment.

Based on the literature review and in consideration of the key elements of the conceptual framework (Figure 3.1) the following propositions have been developed to specify the generic sustainability principles from this chapter for tourism. For the purposes of this research, the following served as an initial template to be further developed after deeper reflection (in chapters 5 and 6) on key factors affecting eco-tourism on the island.

3.2 GIBSON SUSTAINABILITY PRINCIPLES ELABORATED FOR APPLICATION TO TOURISM

(1). Socio-ecological system integrity: “Build human-ecological relations that establish and maintain the long-term integrity of socio-biophysical systems and protect

irreplaceable life support functions upon which human as well as ecological well-being depends” (Gibson *et al.*, 2005:116).

Implications for Eco-tourism development: Tourism must not undermine the very systems— human as well as the ecological—on which it depends. It must develop and sustain a relationship between the two that is nurturing and conscious of the inherent value of both. The human system—since it alone is open to rational direction—must be involved in active efforts to understand the complexity of natural systems so that more responsible decisions can be made. A precautionary approach to management that involves consideration of multiple perspectives is necessary. An attempt to understand would require the asking of questions such as: What is the current health of the ecosystem? How resilient is this system? How is it able to deal with stress? How is its self-organizational capacity? How is biodiversity?

(2). Livelihood sufficiency and opportunity: “Ensure that everyone and every community has enough for a decent life and opportunities to seek improvements in ways that do not compromise future generations’ possibilities for sufficiency and opportunity”(Gibson *et al.*, 2005:116).

Implications for Eco-tourism Development

Tourism should help create the opportunities to ensure that community members benefit from tourism plans, programmes and policies. Factors that undermine people’s ability to take full advantage of these opportunities must be addressed, for example, financial and economic difficulties, health problems, security issues, lack of education, and land ownership issues. Tourism must be linked to other sectors of the economy.

(3). Intragenerational equity: “Ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, etc. between rich and poor” (Gibson *et al.*, 2005:116).

Implications for Eco-tourism Development

Sustainable tourism must seek to reduce the gap between the more and less advantaged, by ensuring that programs, plans, and policies are designed in a way that allows each person an equal choice and the less advantaged the opportunities and resources necessary for an improved standard of living. There must be compromises between the rich and poor, which result in greater respect, co-operation, understanding, and tolerance.

(4). Intergenerational equity: “Favour present options and actions that are most likely to preserve or enhance the opportunities and capabilities of future generations to live sustainably” (Gibson *et al.*, 2005:117).

Implications for Eco-tourism Development

Tourism ought to contribute to the improvement, enhancement, and maintenance of the health and wellness of natural and human systems and their relations for the benefit of present and future generations. Therefore, present actions should not weaken the socio-ecological integrity of the system for future generations. The trade off rules should be applied, when choosing among development options. The six trade off rules are that acceptable trade-offs should ensure an overall net progress towards sustainability; trade offs that accept adverse effects “in sustainability-related areas are undesirable unless proven (or reasonably established) otherwise,” (Gibson *et al.*, 2005:139) in which case the proponent has the responsibility of offering justification; trade-offs that involve significant adverse effects are unacceptable unless the alternative poses more serious adverse effects; trade offs that favour displacement of adverse effects from the present to the future are unacceptable unless the alternative involves displacement of a worse effect into the future; all trade offs must be clearly and explicitly justified “based on openly identified, context specific priorities as well as sustainability decision criteria and the general trade-off rules” (Gibson *et al.*, 2005:139); and the entire process of prioritizing various alternatives must be open and inclusive of all stakeholders (2005:139-140).

(5). Resource maintenance and efficiency: “Provide a larger base for ensuring sustainable livelihoods for all while reducing threats to the long-term integrity of socio-ecological

systems by reducing extractive damage, avoiding waste and cutting overall material and energy use per unit of benefit” (Gibson *et al.*, 2005:117).

Implications for Eco-tourism Development

There should be a move towards reducing the harmful human impacts on the environment (as indicated, for example, by the ecological footprint), through efforts such as optimizing production processes, waste reduction, and renewable energy development. This approach to tourism also provides for the protection and responsible use of the natural resource base.

(6). Socio-ecological civility and democratic governance: “Build the capacity, motivation and habitual inclination of individuals, communities and other collective decision making bodies to apply sustainability principles through more open and better informed deliberations, greater attention to fostering reciprocal awareness and collective responsibility, and more integrated use of administrative, market, customary, collective and personal decision making practices” (Gibson *et al.*, 2005:117).

Implications for Eco-tourism Development

Recognition of the usefulness of including diverse opinions in planning and organizing for more informed decision-making is another essential under sustainable tourism. Diversity brings new innovative ideas, and a greater level of understanding of ecology and social issues; and therefore, an increased probability of drawing better conclusions and making fair and suitable choices. Tourism development and planning must emerge from ideas and desires expressed by communities. Development plans must focus on achieving positive gains, not only for the economy, but for the environment and society. There must be an effort to strengthen and enhance the ties of social capital, in order to benefit communities.

(7). Precaution and adaptation: “Respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, plan to learn, design for surprise and manage for adaptation” (Gibson *et al.*, 2005:118).

Implications for Eco-tourism Development

The complex nature of natural and human systems calls for careful planning and decision making, which avoids “even poorly understood risks” (Gibson *et al.*, 2005:118). Adaptation measures should be taken to decrease the vulnerability of social and ecological systems in which tourism thrives. Planning should be done to weather surprise shocks and uncertainties, whether they be natural, social, or economic.

(8). Immediate and long-term integration: “Attempt to meet all requirements for sustainability together as a set of interdependent parts, seeking mutually supportive benefits” (Gibson *et al.*, 2005:118).

Implications for Eco-tourism Development

Sustainable tourism must make a positive contribution to sustainability in each of the ways mentioned above. It is not a question, however, of balancing each requirement, but of generally seeking positive results from each. This is because each one is as important as the other and there is considerable potential for positive feedbacks among the gains in different areas. Still, there is the inevitability of trade-offs and compromises, but these must be made after careful consideration of the most important social and ecological issues. Compromises should not be sought for the sake of convenience, only if they promise a definite positive gain in the future.

It is this framework that is further expanded to address the island situation, after identification of key issues specific to Dominica in the next 3 chapters.

CHAPTER 4: CASE STUDY SETTING

All the information in this chapter was gathered from secondary sources, except in one instance on page 44, in which case two interviewees provided information. For key informants who permitted, they are explicitly identified by their names and professional titles. In cases where informants want to remain anonymous, general reference is made to their general association, in order to protect identities.

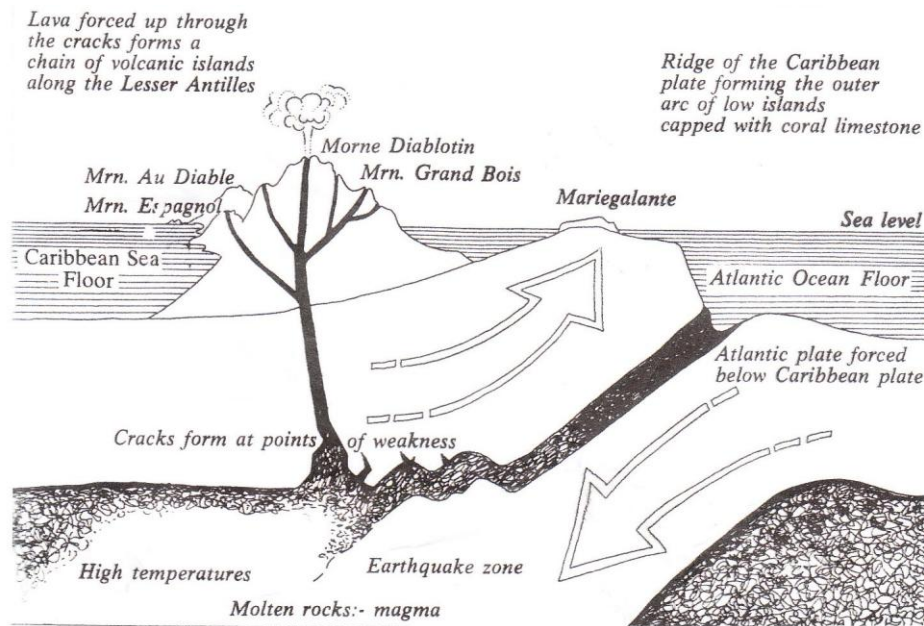
4.1 DOMINICA AT A GLANCE

4.1.1 *Introducing the Island*

Approximately 25 million years ago, during the Miocene geological period, a majestic island gradually emerged from the sea, through intense volcanic activity along a subduction zone (Evans & James, 1997:2), as the Atlantic Plate and the Caribbean Plate moved in opposite directions towards each other. As a result, the dense Atlantic Plate was forced downwards, below the Caribbean Plate, into an area of high temperature and pressure beneath the Earth's crust. Simultaneously, magma from the mantle was ejected outwards through cracks along the Caribbean Plate, resulting in the formation of a chain of volcanic islands that make up the Lesser Antilles (Honychurch, 1995:1-3).

Dominica, being one of the most mountainous, is located at approximately 15° 25' N, 61° 20' W between the French islands of Guadeloupe—to the North—and Martinique—to the South. Due to its geological formation, this small landmass of 754 sq km has a rugged topography characterized by towering mountains—four of these being above 4,000 feet—and deep narrow valleys [Dominica Hotel and Tourism Association (DHTA), 2003: 22]. (See Appendix A for maps showing relative location and topography). As the persistent north-east trade winds approach the Caribbean islands, they are forced upwards by mountains, resulting in orographic rainfall which is the island's main form of precipitation (Potter *et al.*, 2004:21-23).

Fig 4.1: Formation of Northern Section of Dominica



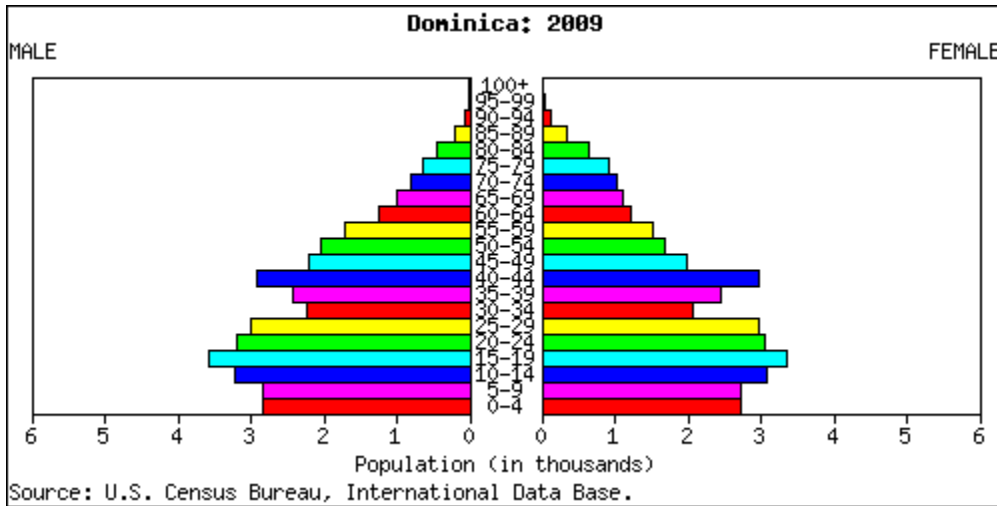
(Source: Honychurch, 1995:3)

Steady trade winds coupled with a seasonal temperature variation has resulted in a humid tropical marine climate. The heavy rainfall has allowed the growth of extensive forests and varied flora and has resulted in an abundance of fresh water, much of which is protected by a natural park system [Central Intelligence Agency (CIA), 2008].

The mostly youthful⁴ population of approximately 72,514 is mainly scattered along the 148 km of coastline (CIA, 2008), because of the rugged topography and mountainous interior. Map 3.1c in Appendix A shows the settlement patterns on the island. The 2002 National Survey recorded the population at 71 000, 35% of which were below the age of 30 (Dominica Government Information Service-GIS, 2006).

⁴ For the purposes of this thesis, a youthful population includes individuals under the age of 40

Figure 4.2: Population Pyramid for Dominica, 2009



The fairly heavy bottom population pyramid noted in figure 3.2 suggests a relatively young and economically productive population. It is also indicative of a growing population and potential for increased pressure on the resource and economic base.

4.1.2 Economic Activity and Performance

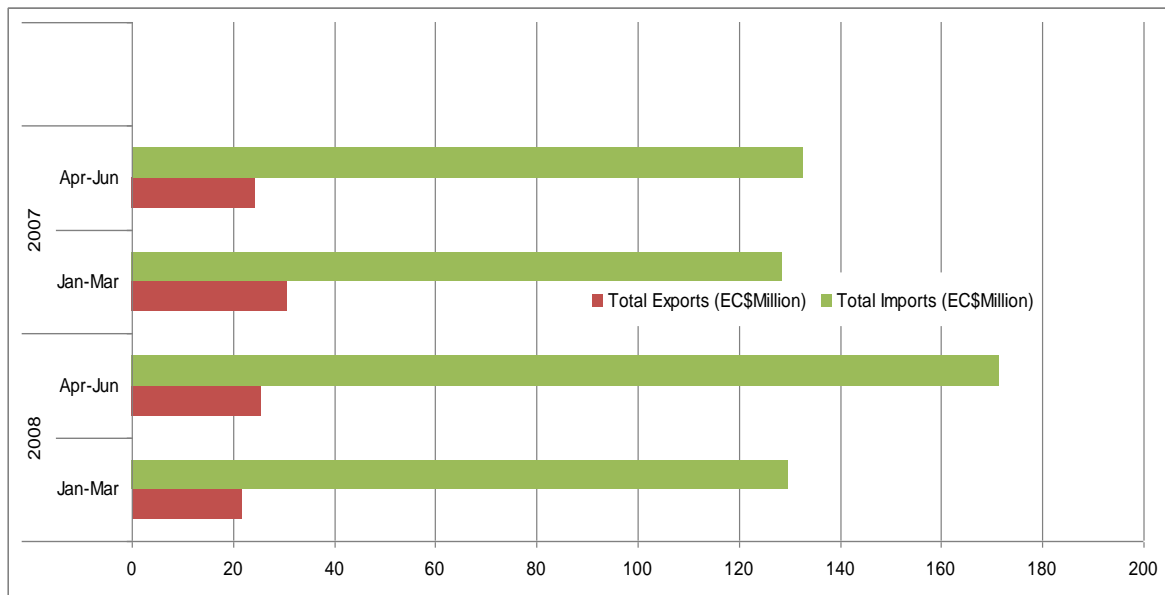
The Dominican economy is primarily agriculture-based. This sector has experienced multiple shocks both from climatic conditions and from developments in the international economy (CIA, 2008). The sector's contribution to Gross Domestic Product (GDP) fell from 25% in 1990 to 18% in 2005 (Foreign and Commonwealth Office, 2008). As a response to demands by the International Monetary Fund (IMF), and the economic and financial crisis of 2001-2002 the government took measures geared towards economic restructuring in 2003. These included tax increases, "elimination of price controls, and privatization of the state banana company" (<https://www.cia.gov/library/publications/the-world-factbook/geos/do.html>, April 8, 2008). As a result, the economy experienced a 2-decade record high real growth in 2006. More recently, the government has developed a tourism 2010 policy and master plan, with eco-tourism development as the goal (Ministry of Tourism and National Development Corporation, 2005).

According to the 2007 Caribbean Development Bank (CDB) economic review, the island’s macroeconomic status was still promising, amidst challenges such as the increase in international energy prices, unfavourable weather conditions⁵, and “unfavourable developments in regional air transport⁶”

<http://www.caribank.org/titanweb/cdb/webcms.nsf/AllDoc/B6782594452E429E04257466005D6159?OpenDocument>, October 27, 2008).

In that year, there was a 1.6% decrease in real output growth, as a result of the pressure being experienced by the tourism and agriculture sectors, most likely due to the effects of Hurricane Dean. The relative stability noted in public finances has been attributed to a strong macro-economic policy environment, sensible management of finances, and considerable income through grants. Both investment demand and consumption fuelled an expansion in credit growth “for the fifth consecutive year” (CDB, 2007). However, the fact that imports outweighed exports reflected badly on the Balance of Payments (BOP), resulting in a broadening of the external current account deficit, as illustrated in figure 4.3 below

Figure 4.3: Total Imports and Exports from January to June for 2007 and 2008



(Adapted from Central Statistical Office, 2008)

⁵ Unfavourable weather conditions here refers to the occurrence of hurricanes

⁶ Unfavourable developments in regional air transport are such things as airline shutdowns and cutbacks and the associated staff reductions and office closures (Caribbean Net News, 2007a; Caribbean Net News, 2007b).

According to Mr. David Williams, a Forestry Officer, and Mr. Henry George, a former chairman of the Dominica Tourist Board, serious interest and investment in tourism began in the mid 1980s⁷ (2008). Economic contributions from tourism are difficult to estimate accurately, because of the sector's strong linkage with other segments of the economy. Tourism's direct contribution to GDP has been estimated at 6.5-10% (Government of Dominica, 2006:88). Approximately 2500 jobs are directly linked to tourism. In 2005, tourism supplied about EC\$25 million as tax revenue—10% of Government total tax revenue (2006:89). Tourism gains have also helped to compensate for trade deficits. The EC\$335 million deficit of 2005 was reduced by half due to foreign exchange earnings from tourism (Government of Dominica, 2006:90). Tourism contributions to individual communities and other sectors of the economy also add to the sector's value.

4.1.3 Beyond Economics

The Human Development Index (HDI) gives a meaning to development beyond economic performance. It is derived by measuring four major categories or indicators: life expectancy; adult literacy; combined primary, secondary and tertiary gross enrolment ratio; and, GDP per capita [United Nations Development Programme (UNDP), 2009] Although the index does not measure factors such as gender inequality and political stability, it provides a more rounded and realistic assessment of human progress (as opposed to GDP per capita alone) which is consistent with the more multi-varied, integrated approach being proposed in this thesis.

⁷ The 1958 Hotels Aids Ordinance, (which offered incentives for investors interested in building hotels consisting of 10 or more rooms) marked the Government's "first tangible attempt...to promote tourism" (Wilkinson, 1997:65). A tourist development strategy called the Shankland Cox Report of 1971 followed. Most of its major recommendations were rejected due to "projected development costs, lack of aid funding, and energy costs" (Wilkinson, 1997:66). It was based on an approach that favoured mass tourism for the island. Over the last three decades, the country has had a number of tourism policies besides the Shankland and Cox Report, namely, the 1994 national cruise policy done by the Caribbean Tourism Organization (CTO); a 1997 tourism policy report proposing an approach to eco-tourism that incorporates conservation ideals; and a tourism development plan prepared by Dr. Maria Bellot between 1997 and 2000. Although the latter has been viewed by individuals from the National Development Corporation (NDC) and the Ministry of Tourism as quite "definitive," none of these have been seriously implemented and enforced (Ministry of Tourism & National Development Corporation, 2005: 10).

Table 4.1 below states Dominica's HDI rank in comparison to other selected countries. According to the UNDP 2008 statistical update, the island ranks 77 out of a total of 179 countries (UNDP, 2009). The 2007/2008 UNDP report graded Dominica as 71st out of 177 countries. That ranking placed it in the medium development category (European Commission's Delegation, 2009). It can be assumed that, at six ranks lower, the country still maintains a position in the medium development category.

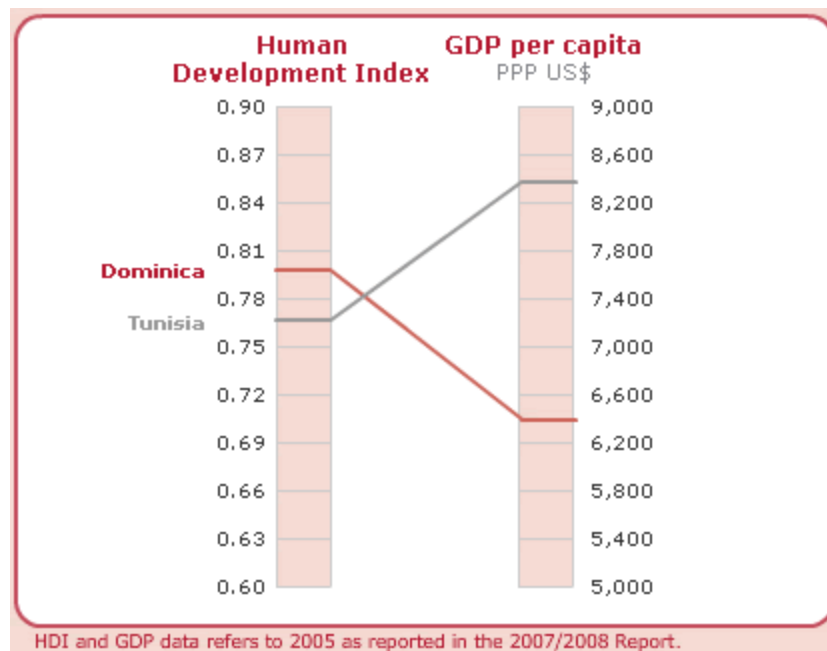
Table 4.1: Human Development Index (HDI) For Dominica and Selected Countries, 2006

HDI value 2006	Life expectancy at birth (years) 2006	Adult literacy rate (% ages 15 and above) 2006	Combined primary, secondary and tertiary gross enrolment ratio (%) 2006	GDP per capita (PPP US\$) 2006
1. Iceland (0.968)	1. Japan (82.4)	1. Georgia (100.0)	1. Australia (114.2)	1. Luxembourg (77,089)
75. Bosnia and Herzegovina (0.802)	52. Slovakia (74.4)	74. Turkey (88.1)	60. Mongolia (79.0)	77. Brazil (8,949)
76. Turkey (0.798)	53. Montenegro (74.2)	75. Saint Vincent and the Grenadines (88.1)	61. Jordan (78.7)	78. Macedonia (TFYR) (7,921)
77. Dominica (0.797)	54. Dominica (74.1)	76. Dominica (88.0)	62. Dominica (78.5)	79. Dominica (7,715)
78. Lebanon (0.796)	55. Viet Nam (74.0)	77. Namibia (87.6)	63. Brunei Darussalam (78.5)	80. Thailand (7,613)
79. Peru (0.788)	56. Macedonia (TFYR) (74.0)	78. South Africa (87.6)	64. Belize (78.3)	81. Algeria (7,426)
179. Sierra Leone (0.329)	179. Swaziland (40.2)	147. Mali (22.9)	179. Djibouti (25.5)	178. Congo (Democratic Republic of the) (281)

(Source: UNDP, 2009)

The human development data for Dominica below suggest that GDP considered on its own is not an accurate indication of true human progress. Figure 4.4 shows that, although Tunisia’s GDP per capita was higher than Dominica’s in 2005, at US\$8, 400 and US\$6, 400 respectively, Dominica ranked higher on the Human Development Index. This suggests that Dominica scored higher for the other indicators included in the human development index, which are listed in table 4.1 above. Disregard for such indicators as education, life expectancy, and literacy creates a very narrow view of development.

Figure 4.4: Human Development Index and GDP per capita Figures for Dominica and Tunisia



(Source: UNDP, 2007/2008)

4.1.4 The Emergence of Eco-tourism within the Dominican Context

The island’s geological formation has created landscapes dotted with numerous ecological attractions such as “tropical forests, mountains, rivers, lakes, wetlands and sunken volcanoes with steep drop-offs” (Government of Dominica, 2006:19). Its African, French, and English colonial history has also resulted in a unique cultural heritage (2006).

Dominica has much to gain, since its tourism product exemplifies the richness of nature and culture/heritage (Ministry of Tourism & National Development Corporation, 2005: 5). The 2007/2008 budget address which was presented by the Dominican Prime Minister on July 18th, 2007 informed cabinet ministers, other ministers of government, and the people of Dominica of the various undertakings and investments made by the government throughout the year, in sectors such as education, health, and the environment. Prime Minister Skerrit expressed the continued commitment of his government to improving the lives of all Dominicans, and outlined progress in various sectors. As the government attempts to restructure and diversify the agriculture industry, it sees much promise in furthering the development of eco-tourism as part of a broader strategy to capitalize on the island's natural resources, while maintaining ecological and social integrity (2007:18-27).

4.1.5 Positive Tourism Developments

Dominica has received benchmark designation from Green Globe 21 (an eco-tourism organization), as an exemplary eco-tourist destination. It was the first country to receive this status. The then tourism minister, Hon. Charles Savarin, stated, “We are extremely proud to be a leader in the promotion and development of sustainable tourism, not just in the Caribbean but globally” (Caribbean Net News, 2004). In addition to this national title, Green Globe 21 also identified five hotels that were worthy of benchmark status. These included: the 3 Rivers Eco-Lodge, Tamarind Tree Hotel, Garraway Hotel, Fort Young Hotel and the Hummingbird Inn.

The Canadian International Development Agency (CIDA) has contributed to the Dominican tourist industry by providing funding for training programs under the Nature Islands Standards of Excellence Program. This has increased awareness and customer service in that sector of the economy. Sharon Pascal, the then Director of Tourism at Dominica's National Development Corporation commented that the improvement of customer service is one way of increasing tourist “arrivals and expenditure” (CIDA, 2007). One way in which Dominica has made some progress with respect to eco-tourism development is highlighted here—through training and certification programs. The

Wacky Rollers Adventure Vacations & Expeditions is an example of a private local business that has benefited immensely from this program (CIDA, 2007). One of the co-owners mentioned the usefulness of this CIDA-supported training program especially in improving the skills of their tour guides (2007).

The most recent policy development initiated by the government in collaboration with the Canadian International Development Agency's (CIDA) Caribbean Project for Economic Competitiveness (CPEC) is the Tourism 2010 Policy of 2005. This commitment to tourism marketing and promotion has inspired the development of programmes and strategies geared towards this goal. For example, the recent community tourism thrust initiative encourages the management of tourism resources from within the community and the practice of green business (Skerrit, 2007:29). The government, in collaboration with the European Union (EU) developed the Eco-tourism Development Programme (ETDP) in 2002 (Ministry of Tourism, Legal Affairs and Civil Aviation, 2006a). Two Acts were approved in April of 2007, by Parliament. These are the Invest Dominica Authority and the Discover Dominica Authority Acts. The first provides broad guidelines for encouraging investment in and growth of the economy, while the Discover Dominica Authority addresses the marketing and development of the tourism product (Skerrit, 2007:24).

4.1.6 Challenges to Developing Eco-tourism

Sustainable tourism, including eco-tourism is not without its challenges. Dujon argues that the success of eco-tourism strategies depends on the ability to recognize and understand the impacts of extracting and exploiting natural and human resources and to create appropriate policies and plans to ensure ecological and economic sustainability. She assumes that tourism is plagued by many of the same problems faced by other "export-led development strategies" (1999:1). These include damage to the environment; leakage of income due to the outflow of profits; "limited forward and backward linkages;" and "vulnerability to global economic changes." She grapples with the question of how eco-tourism can be implemented in a way that would ensure sustained economies and sustained environments in the wake of global economic forces, and

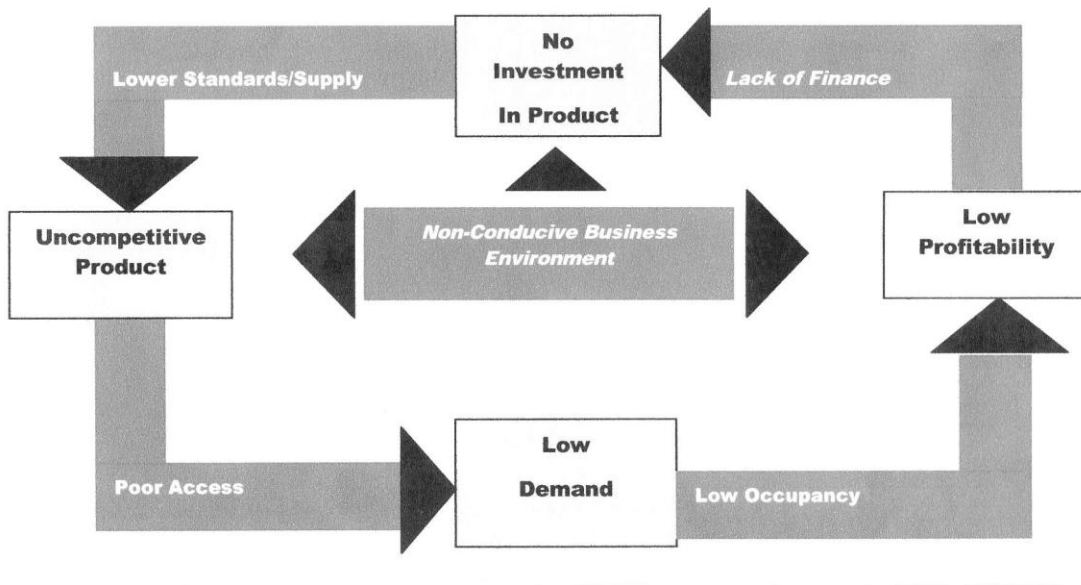
discusses the various factors that would determine success or failure of such an eco-tourism strategy. She also notes that territorial size and ownership of resources can be determinants of the effectiveness of various tourism undertakings.

Some challenges for Dominica are discussed by Bellot (2001). She begs a closer look into the performance of the tourist industry in Dominica and stresses that it is important to consider not only the number of tourist arrivals, but also their activities once they have arrived. Factors that limit the tourists' experience, and therefore undermine the quality and reliability of the tourism product being offered include sub standard accommodation, the limited size of Dominica's two airports, and "lack of a more organized and attractive environment for vending of craft items and tours that are not pre-sold" (2001). Bellot suggests that present standards should be raised; advocates for more creativity within the private sector to develop tourism; and also urges the private sector to work more closely with the government to improve the tourism product (Bellot, 2001).

Burnett and Uysal (1991) discuss the adverse impacts of Dominica's geographic location on its tourism industry. Although the country benefits from being in a suitable location for cruise ship tourism, benefits to be derived from tourists that may come by air may be restricted. Due to the country's position and the limited size of its airports, it may be logical and more sustainable to develop tourism on a small scale, recognizing the limited capacity of the island but identifying great opportunities for expansion, improvement, and marketing. Weaver (1991) reveals that an assessment of the Dominican market, tourist accommodations, and the economy suggests potential for the development of a tourism alternative to typical mass tourism elsewhere in the Caribbean. Dominica has made a concerted effort at developing policy in support of alternative tourism since 1971.

Among the factors mentioned in the Tourism Master Plan that limit the country's ability to benefit fully from its tourism product are "infrastructure gaps, lack of facilities and services, insufficient marketing, skills deficiencies, and inadequate management of the sector" (Government of Dominica, 2006:94). These were also identified by Wilkinson over ten years ago.

Figure 4.5: Dominica’s Under Competitive Cycle



(Source: Government of Dominica, 2006:95)

The major limiting factors are the non-business environment, limited and difficult air access, little knowledge of Dominica within the market place, and a product limited “in terms of variety, quantity, and quality” (Government of Dominica, 2006:95). These have resulted in a vicious cycle, as seen above. A low demand refers to few tourists patronizing tourist businesses such as hotels and guesthouses, and other service providers. Due to the lack of substantial profits, the owners are unable to invest in their business upkeep and enhancement, and standards become lower. As a result, little attention is drawn within the market place. As well, foreign investors are deterred by the non conducive business environment characterized by “lengthy and complicated process securing title to land; lack of transparency with regard to incentives approval; no land use policy and plan” (Government of Dominica, 2006:96). Hence, air access⁸ is negatively affected by the small presence in the market and reduced ability to do proper marketing and promotion.

⁸ The negative effect on air access suggests that commercial flights are few because of low demand

CHAPTER 5: DOMINICA’S ECO-TOURISM RESOURCES

This chapter provides details on Dominica’s attractions, the economic importance of tourism, and its competitive performance, which are used to further inform the comprehensive eco-tourism sustainability framework for Dominica, presented in chapter 6. The information in this chapter has been gathered from secondary sources, interviews, and observations.

5.1 SIGNIFICANCE OF TOURISM

Dominica has an agriculture based economy, with bananas as the main export crop. However, according to Mr. Henry George, former chairman of the Dominica Tourist Board, earnings from agriculture have not been very reliable from around the early 1980s (2008) due to the island’s vulnerability to “climatic conditions and international economic developments” (CIA, 2008). As the government attempts to restructure and diversify the agriculture industry and the larger economy, the development of eco-tourism has been recognized as a promising option. (Skerrit, 2007:18-27).

5.1.1 Natural Resources And Cultural Heritage

Environmental Setting

The island offers a tourism product that stems from its rich natural resource base, and cultural heritage. Its volcanic history has resulted in a rugged terrain and rich soils that support a lush tropical forest. An abundance of fresh, clean water flows swiftly through its valleys. The varied flora and unique fauna are also of particular interest (Government of Dominica, 2006:19). As illustrated in maps 4.2, 4.3, and 5.2 in appendix A, the island possesses a network of national park systems, namely, the Morne Trois Pitons National Park in the south, and the Cabrits and Morne Diablotins National Parks in the north. In 1997, the Morne Trois Pitons National Park was declared a World Heritage Site by UNESCO. The two terrestrial reserves include the Northern and Central Forest Reserves. There is one marine reserve at the southernmost tip of the island—the Soufriere Scotts Head Marine Reserve. (Government of Dominica, 2006:20).

Terrestrial Assets

Among its terrestrial assets are forests, mountains, waterfalls, rivers, lakes, wetlands, and sunken volcanoes. Special attractions include the Boiling Lake (the largest of its kind in the world), Trafalgar Falls, Emerald Pool and Sulphur Springs. The Roseau Valley attractions are very popular partly because of their relatively close proximity to the cruise ship berth and the scenic drive through the Roseau Valley.

Map 5.1a: The Roseau Valley Showing Some Natural Attractions



(Source: Government of Dominica, 2006:155)

Scale: One inch represents approx. 1 mile

Mr. Billy Christian, former protection officer in the Forestry Division identifies this area as having one of the greatest concentrations of natural attractions on the island (2008). These include the Trafalgar Falls, the Emerald Pool, Middleham Falls, Freshwater Lake, Boeri Lake, Boiling Lake, smaller fumaroles, and hot sulphur springs in Wotten Waven, some of which are highlighted in the map above. (See Map 5.1b in Appendix A for a topographic map of The Valley area). The winding contours are an indication of the very rugged nature of the landscape. The river basin can be identified as having a dendritic flow pattern, characterized by smaller tributaries feeding the larger fluvial system. The direction of flow is from an area of highland to an area of lowland.

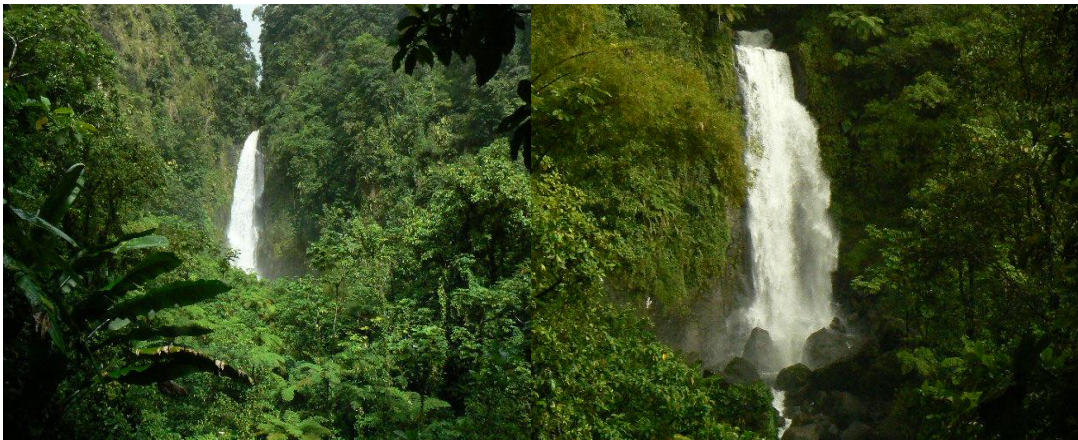
Picture 5.1: The Valley of Desolation And The Boiling Lake



The Valley of Desolation (Source: Lambert, July 2008) The Boiling Lake

Three public sector interviewees identified the Trafalgar Falls as the number one destination for cruise ship tourists (2008). The falls to the left, typically referred to as the “Father Falls” is the tallest of the two extending for 125 ft (38m). On the right is the “Mother Falls,” which is 75 ft or 23m (Discover Dominica Authority, 2005).

Picture 5.2: The Trafalgar Falls



Male Fall (Source: Lambert, December 2008) Female Fall

Dominica’s forest cover of over 60% of the island is the most extensive in the Lesser Antilles. Its native flora has been documented as over 1,000 species of flowering plants, 74 species of orchid and 200 species of fern. Wildlife is less abundant but still unique and limited to small animals and birds. Its 166 species of birds include the Sisserou Parrot

(indigenous to the island) and the Red Necked Parrot (Government of Dominica, 2006:19).

Marine Assets

The island's volcanic history has not allowed for the typical extensive white sand beaches characteristic of other Caribbean islands such as Barbados, Jamaica, and the Bahamas. The majority of beaches have black volcanic sand, which is a significant difference in terms of the island being able to offer a unique experience. The few beaches of lighter sand—such as the Woodford Hill and Hampstead Beaches—are relatively small (Government of Dominica, 2006: 19).

Picture 5.3: Marine Environment



(Source: Ministry of Tourism, Legal Affairs & Civil Aviation, 2006b; Government of Dominica, 2006:21 ITME, 2008a respectively).

The offshore zones support world class diving, due to features such as good visibility, steep cliffs, and caves (Government of Dominica, 2006:21), and an abundance of fish, whales, dolphins, and turtles.

Cultural Heritage

The Amerindian, European and African influences have resulted in historic remnants in the form of physical structures; a mostly black population (with an Amerindian minority); Dominican arts and craft; and, other aspects of a vibrant Creole culture. One of the

reminders of a colonial history is Fort Shirley, located in the Cabrits National Park in the north, which is being rehabilitated under the EU funded Ecotourism Development Programme (ETDP).

Picture 5.4: Fort Shirley



(Source: Government of Dominica, 2006: 22-23)

Most of the architecturally and historically significant buildings are located in the island's capital of Roseau. There has been some effort to maintain these structures, but a lot more work still needs to be done to maintain physical infrastructure and to ensure general building upkeep. Concern for the sustainability of the town's architectural heritage has led to the formation of SHAPE, the Society for Historic Architectural Preservation and Enhancement.

Picture 5.5: Historic Building in Roseau



(Source: Government of Dominica, 2006:23)

There are a number of Amerindian and Maroon sites, where historic remains can be found. As well, the last of the indigenous Caribbean people are located along the east coast in an area known as the Carib Territory. These people demonstrate their craft and culture at the Carib cultural village, which was finished in 2006. Cultural events are held throughout the year, including the World Creole Music Festival and the Carnival (Government of Dominica, 2006:22-23). See map 5.2 in Appendix A for cultural heritage sites.

Picture 5.6: Carib Craft, Architecture, People



(Source: Dominica Weekly, 2007b)

5.1.2 Dominica as a Niche Market for Eco-tourism

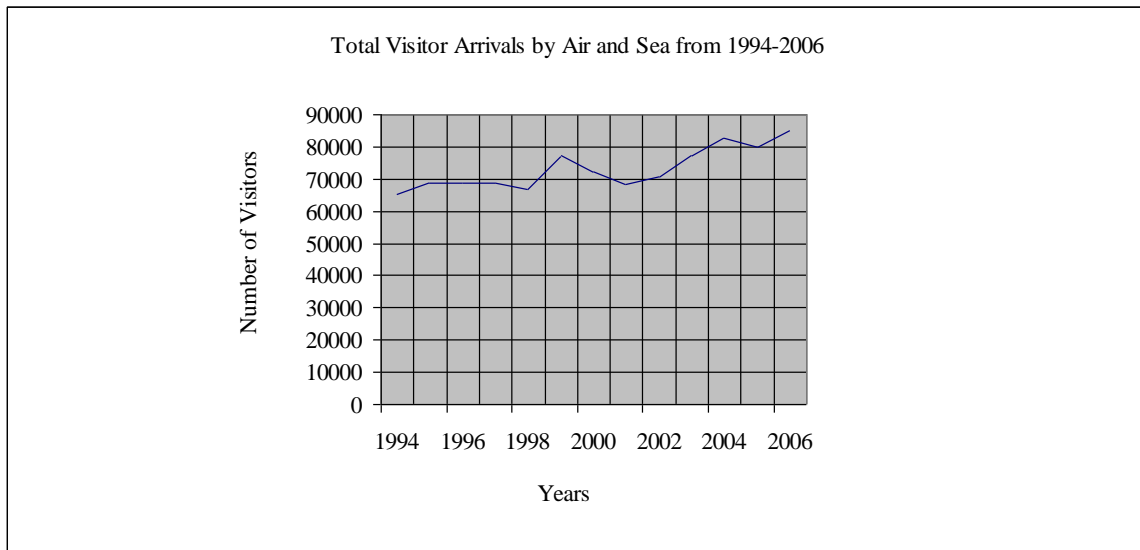
Dominica's product possesses particular features that place it within a special niche not only within the Caribbean, but in the world (Government of Dominica, 2006:83). Its primary attractors include: general leisure/nature/eco-resorts; scuba dive; hiking/trekking; festivals/events; and cruise. Secondary ones are yachting and whale watching. Although these attractors can be found in other areas around the world, Dominica's natural resources have been minimally spoilt, compared to other destinations such as St.Martin.

5.1.3 Eco-tourism Economics

Dominica’s visitors can be categorized under two main types: tourists, and excursionists. Visitors include non-resident persons “(national or alien) usually resident abroad, who enter Dominica and intend to stay for not more than one year” (Central Statistical Office-
-CSO, 2006: v). A tourist refers to a visitor who stays in the country for at least one night, but not more than 365 nights (CSO, 2006: v). This also defines stay-over visitors. Excursionists are visitors that do not spend a night in the country (CSO, 2006:v). This may include cruise ship tourists or flight passengers who do not spend a night.

The total number of visitors to the country increased overall from 1994-2006. Due to an economic and financial crisis (NationMaster.com, 2009) there was a decrease in the number of visitors between 1999 and 2001, after which arrival numbers recovered.

Figure 5.1: Total Visitor Arrivals by Air and Sea from 1994-2006



(Adapted from Central Statistical Office, 2006:8)

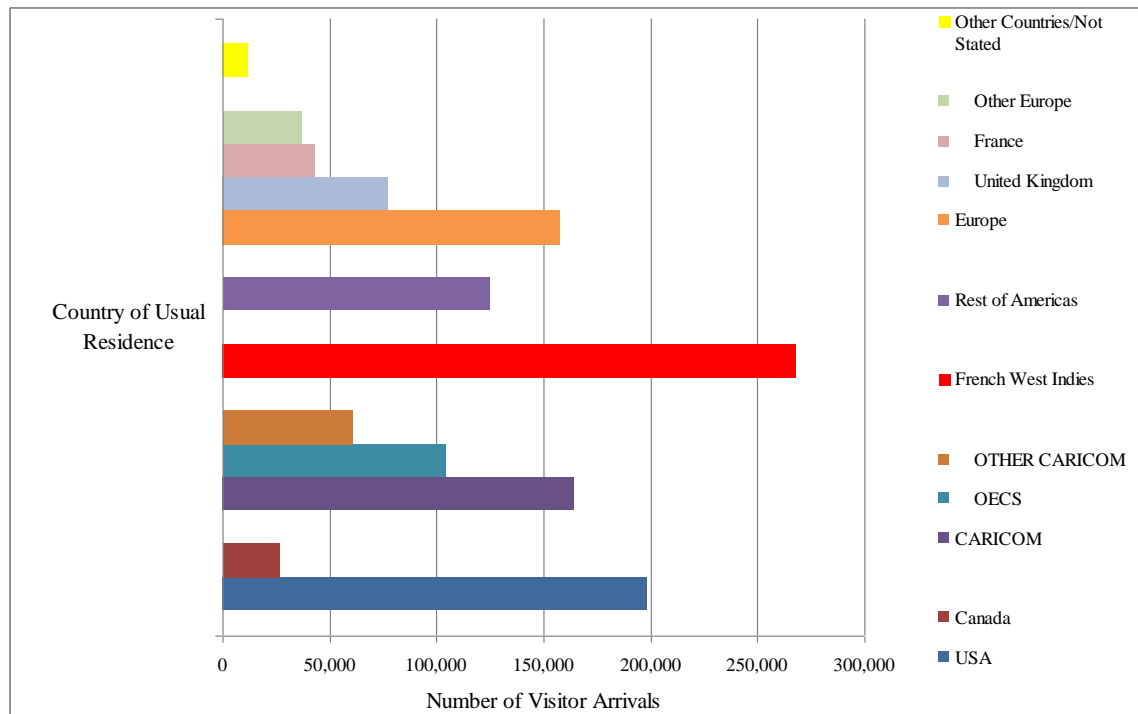
As noted in table 5.1 below, the largest number of visitors comes from cruise passengers, followed by stay-over tourists. The largest percentage of arrivals comes from within the Caribbean, followed by the United States and Canada, then Europe.

Table 5.1: Number of Visitor Arrivals by Visitor Categories, 2005

Activity/Motivation	Numbers
A Stay-over Arrivals	
(i) Vacation	54,000
general/leisure	31,000
nature tourism	20,000
scuba dive	3,000
(ii) Visiting Friends and Relations	7,000
(iii) Business and Bus Vacation	9,000
(iv) Study	5,000
(v) Other	3,600
Total Stay-over Arrivals	78,600
B Yatchies	12,000
C Excursionists	700
D Cruise	301,500

(Source: Government of Dominica, 2006:73)

Figure 5.2: Total Visitor Arrivals by Country of Usual Residence from 1994-2006

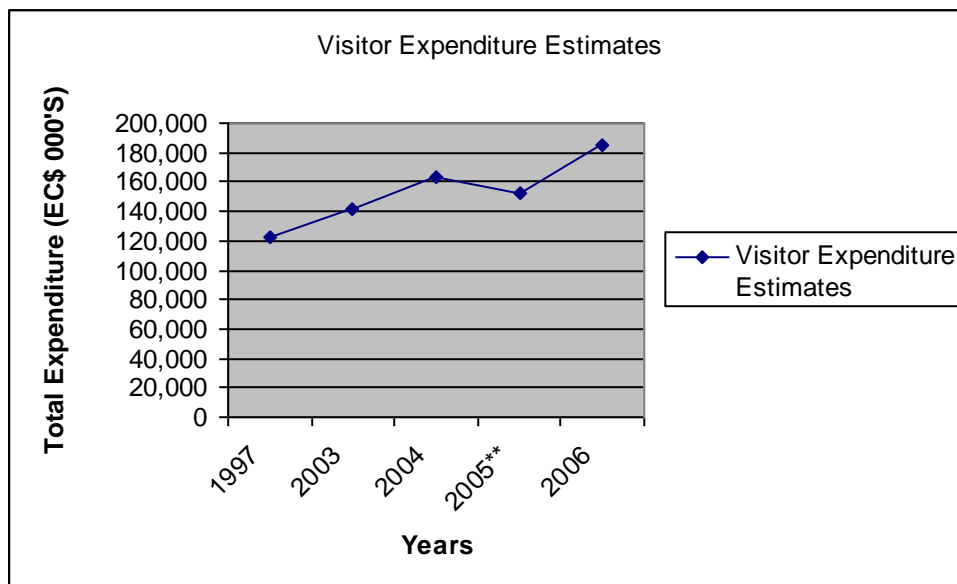


(Source: Adapted from Central Statistical Office, 2006:5)⁹

⁹ CARICOM includes OECS and OTHER CARICOM countries.

Figure 5.3 below shows a steady increase in visitor expenditure from 1997 to 2006, except for a decrease of about EC\$100,000 or US\$37,243.95 (at a conversion rate of 1:2.685) between 2004 and 2005. This corresponds with the overall increase in visitor arrivals noted in the previous diagram. It is assumed that as the number of visitors increases, the amount of spending also increases. However, the spending is not equivalent among the various categories of visitors. As seen in figure 5.4, stay-over tourists are associated with the highest expenditure estimates, followed by cruise ship visitors, then excursionists

Figure 5.3: Visitor Expenditure Estimates from 1997-2006

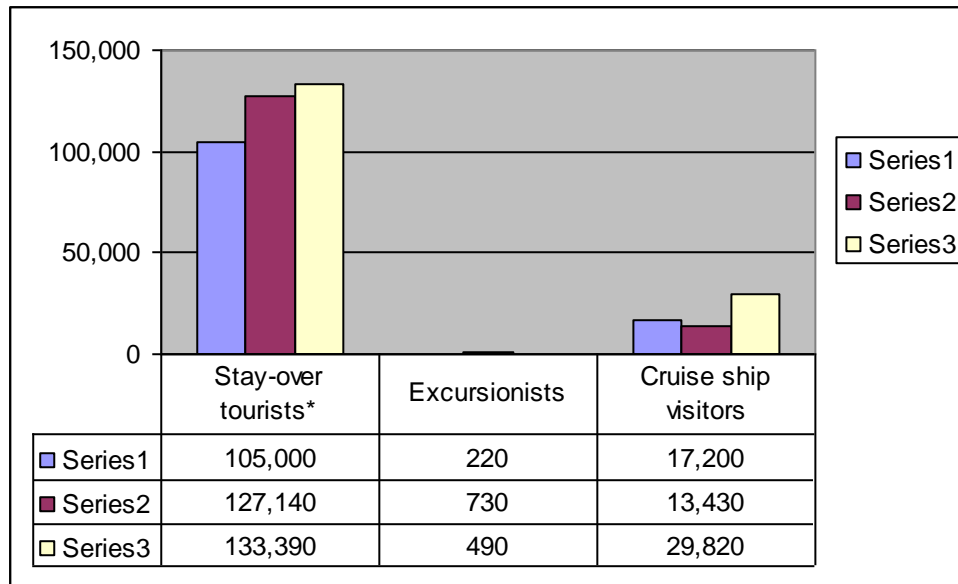


(Adapted from Government of Dominica, 2006:88)

Series 1, 2, and 3 refer to years 1997, 2003, and 2004 respectively, and amounts are in EC\$000's. Except for excursionists, expenditure estimates increased from 1997-2004.

OECS: Antigua, Dominica, Grenada, Montserrat, St.Kitts/Nevis, St.Lucia, and St.Vincent
 OTHER CARICOM: Barbados, Belize, Guyana, Jamaica and Trinidad & Tobago
 French West Indies: Martinique, Guadeloupe, The Saints, St.Martin, and St.Bartholomew
 (Source: CSO, 2006:vi).

Figure 5.4: Relative Visitor Expenditure Estimates From 1997-2004



(Adapted from Government of Dominica, 2006:88)

According to the Tourism Masterplan, the economic value of tourism is measured in terms of six main components: boosting GDP growth; employment generation; tax revenues to government; income generation at community level; foreign exchange earnings; and, linkages with other sectors of the economy. (See section 4.1.2 in chapter 4).

In terms of Dominica's competitive performance, which is measured by its market share in the Caribbean, there is room for much needed improvement. As seen in table 5.2 below, the island's share of Caribbean tourism markets has been constant but less than 1%. Its share from among the other OECS countries is also quite small. The country's niche market share within the Caribbean also suggests the need for improvement.

Table 5.2: Dominica's Share of Caribbean and OECS Tourism Markets

Markets	Share %					
	1990	2001	2001	2003	2004	2005*
Total Caribbean	0.4	0.3	0.4	0.4	0.4	0.4
OECS Countries	6	6	6	6	6	6.1

Source: CTO, as cited in Government of Dominica, 2006:80 *consultants estimates

Table 5.3: Dominica’s Share of Competitor Grouping Market

Competitor Group	Numbers (000's) and Share (%)				
	1999	2001	2003	2004	2005**
Belize	181	196	220	231	236
Dominica	74 (9.2%)	66 (8.2%)	73 (8.3%)	80 (8.5%)	78 (8.5%)
Grenada	125	123	142	134	98
Guyana	100	99	101	122	116
Saba	9	9	10	11	11
St.Lucia	260	250	277	298	318
Suriname	57	60*	60*	60*	60*
Group Total	806	803	883	936	917
Total Caribbean	19,119	19,534	20355	21,760	21,784
Group Share	(4.2%)	(4.1%)	(4.3%)	(4.3%)	(4.2%)

Source: CTO as cited in Government of Dominica, 2006:81 *inputed estimates as official statistics not available **consultants estimates

Significance for Eco-tourism Sustainability Framework

Dominica’s eco-tourism is highly dependent on its natural resources and cultural heritage. These must be protected and preserved, as they form the fundamental basis upon which tourism has developed. The future of tourism on the island will depend upon the ability to maintain the authenticity of these attractors. As discussed in section 4.1.2 of chapter 4, although tourism is still in its infant stages, its economic value for the island is relatively significant. However, as illustrated in tables 5.2 and 5.3, there is room for improvement. Improvement may not be equated with a drive towards attracting greater numbers of tourists (as has been the trend) but a change in the types of tourists targeted. As illustrated above, although cruise tourists far outnumber stay-overs, the latter spend more. There is an anticipated increase in pressure upon resources with an increase in the number of tourists; therefore, focusing more heavily on eco-conscious stay-over visitors would be a wise approach to maximizing profits, while protecting the environment.

CHAPTER 6: FACTORS AFFECTING THE POTENTIAL FOR SUSTAINABLE ECO-TOURISM IN DOMINICA

This chapter offers more detailed information to further specify key considerations for the eco-tourism sustainability framework. The significant concerns, aspirations, opportunities, constraints, capacities and gaps within the Dominican context are recognized and incorporated into the framework, which is presented at the end of the chapter. The information in this chapter was gathered from secondary sources, interviews, and participant observations.

6.1 DEFINING THE FACTORS

The key factors affecting the potential for sustainable eco-tourism in Dominica are identified as a variety of contextual factors, to include eco-tourism-enabling features such as geophysical settings, matters of political policy and regulatory requirements, and more active and variable influences such as public attitudes and behaviours, and social capital. These form the environment or framework within which the tourism industry exists. In essence, it is the environment that has enabled and, constricted eco-tourism in Dominica so far and that, with proper development, will allow and facilitate desirable advancement of eco-tourism. In the ideal situation, each factor should complement the other and subsist as part of the larger network of factors (Walker and Salt, 2006:31). Review and analysis of these considerations suggest that the development of tourism in Dominica has been a product of major historical conditions and circumstances, some of which clearly relate to Gibson's Sustainability Principles and others which have indirect implications. This thesis postulates that future development of tourism will depend on the ability to enhance strengths and minimize weaknesses from amongst these factors.

6.2 DOMINICA'S HISTORICAL DEVELOPMENT

The island's formation is considered to be a recent occurrence in geological time. (See chapter 4 for a more detailed discussion on island formation). The first set of mountains formed 15 million years ago now form part of the national parks system of Dominica (Honychurch, 2000). At that time, seed dispersal may have caused the spread of vegetation from South America onto the Caribbean Islands. It has been recorded that by

3000 BC the first Amerindian settlers came as hunters and gatherers from the Orinoco region of South America, earning a living in the lush forests of Dominica (2000). This suggests that the forests had already been developed sufficiently to support such a lifestyle. At around 100 AD, the first agricultural Amerindians settled on the island, and began to clear trees in order to establish their gardens. Trees were also cut to build dugout canoes for fishing (Honychurch, 2000)¹⁰. According to Mr. Lennox Honychurch, local historian and anthropologist, remnants of the Amerindian way of life remain in agricultural and fishing techniques still practiced today (2008).

Christopher Columbus was the first European to sight the island, after which other adventurers followed. Many of the natives (Arawaks and Caribs) died due to enslavement, cruelty, and diseases contracted from the Europeans. During that time, the forests were exploited for export of timber by the Europeans (Honychurch, 2000). Throughout the 1700s, the Kalinago/Carib people had quite a stronghold, as the French and the English fought for supreme possession of the island. The Treaty of Paris gave the British control over Dominica in 1763. Thereafter, the land was divided into lots for sale, leaving the mountain tops untouched in order to capture rain (Honychurch, 2000). One may conclude that even then, there was some consciousness of the ecosystem services offered by the forests. As well, the rugged terrain of the areas now under the national parks system, prevented development within these areas. These regions, such as the Morne Trois Pitons National Park area became a hiding place for escaped slaves (2000).

An organized effort to conserve natural resources began in 1949 with the establishment of the Dominica Forestry Service. Land tenure could be described as comprising of a few large landowners who employed labourers (mostly ex-slaves) to work on the land. Labourers were given small plots of land to live on. Squatting and illegal land tenure was also common. Illegal activities occurring within the forests in the 1950's, included slash and burn agriculture, harvesting of wood for charcoal production, harvesting of firewood for domestic cooking and bakeries, and production of lumber for building construction

¹⁰ Much of what the Amerindians did had a low impact. Their population was less than 8000 at any one time; therefore, exploitation was relatively small and limited (Honychurch, 2008).

and furniture. Also, non-wood forest products such as gum, lianas, bark, and wild fruits were harvested within the forests while parrots were illegally hunted, says Mr. David Williams, Forestry officer (2008). This led in 1958 to the enactment of the Forest Act, with “provisions for the conservation and control of forests” (James, 1999: 5) in Dominica.

6.2.1 Geo-physical Setting

Nature’s Complexity

Mountains, thick forests, valleys, and steep drop-off points have enabled the type of tourism now promoted. Tourism in Dominica is heavily dependent upon the integrity of natural landscapes, which are a direct product of the island’s geological formation.

The humid tropical marine climate described in chapter 3 is characterized by a rainy season is from June to October (when hurricanes are most likely) and a dry season. A National Parks Warden identifies the tourist season as extending from October to the end of April, with an off season from May to September (2008). The climate attracts tourists from temperate regions, many of whom seek warmth during the winter months. As in the other Caribbean islands, the weather pattern reduces the number of visitors during the rainy months, and it encourages visitors during the drier season when (coincidentally) tourists from temperate climatic zones seek warmer conditions, due to wintery conditions in their homelands.

As noted above, forested lands such as the Morne Trois Pitons National Park area, were hiding grounds for run away slaves/maroons, who resisted British rule in the late 1700s (Honychurch, 2000). Their strong presence together with remnants from Amerindian culture has resulted in the present Dominican cultural heritage.

In the period from 1909 to 1997, a number of resource exploitation projects failed partly due to the island’s topography. Some examples of timber harvesting companies that failed include Dominica Forests Ltd. (1909), The Smith & Lords Logging & Sawmilling Project (1946), Domcan Timbers Ltd. (1968), Timber harvesting by the Forestry and

Wildlife Division (1978), North-Eastern Timbers Co-operative (1985), and Island Timbers Ltd. (1997). Although the island might have lost profits to be gained from such business, these failures saved the forests (James, 1999:1-24), which are one of the island's tourist attractions today.

Natural Hazards

The Dominican environment is highly complex. As can be seen in Box 6.1 below, a number of environmental, social, and economic factors act simultaneously to increase the vulnerability of small island developing states such as Dominica.

Box 6.1: Intrinsic Vulnerability in Small Island Developing States

Small Size

Limited natural resource base, high competition between land uses, intensity of land-use, immediacy of interdependence in human-environment systems, spatial concentration of productive assets

Insularity and remoteness

High external transport costs, time delays and high costs in accessing external goods, delays and reduced quality in information flows, geopolitically weakened

Environmental factors

Small exposed interiors, large coastal zones

Disaster Mitigation Capability

Limited hazard forecasting ability, complacency, little insurance cover

Demographic factors

Limited human resource base, small population, rapid population changes, single urban centre, population concentrated on coastal zone, dis-economies of scale leading to high per capita costs for infrastructure and services

Economic factors

Small economies, dependence on external finance, small internal market, dependence on natural resources, highly specialized production

Source: Conway (1998), Lockhart et al. (1993), Slade (1999)

Natural hazards have served both destructive and constructive roles throughout the course of Dominican history by causing serious losses, while presenting promising opportunities. As illustrated in section 4.1.1, it was a natural hazard that resulted in the geological formation of the island, and of the varied natural sites that now exist. Natural hazards continue to open up new sites and attractions. For instance, a private sector interviewee from the Roseau Valley reflected upon the 1979 landslide near the Trafalgar Falls, which uncovered hot water beneath (2008). The island has nine potentially active volcanoes and volcanic activity is expected to affect the southwest (“very high hazard zone”) within the next 100 years (University of the West Indies [UWI], 2001: 41-42). The recurrence interval for hurricanes is much less than for volcanic eruptions. Based on studies conducted by UWI, a report released in 2001 stated that Dominica “...is probably one of the islands most prepared for future volcanic activity” (2001:42). Moreover, in a 2004 draft report by the United Nations International Strategy for Disaster Reduction, it was revealed that “tropical cyclones and storms are...the most frequently damaging hazard for the majority of the islands and island states”

Following the 1806 and 1834 hurricanes, Hurricane David, which battered the island in 1979, has been noted as one of Dominica’s most vicious hurricanes in recent times (Honychurch: 1995:270). The frequency and instant losses of storm events and the resultant cumulative social and economic effects impose a serious burden on national resources. This was exemplified in the collective effects of Hurricane David in 1979, followed by Hurricane Frederick, then Allen in 1980. Gross Domestic Products (GDP) fell by 17%. Hurricane David alone left 60 000 people homeless, and caused the destruction of 13% of the island’s buildings and 75% of fishing boats. Approximately five million trees were damaged, resulting in biodiversity loss (Anonymous, 2003:13). Hurricanes in Dominica, as in other places, trigger other disasters such as landslides (2003:13-14).

Although volcanic activity is also a real threat to the island, here, the focus is more on hurricanes, since they have played a significant role in the decline of the banana industry, which was the island’s main source of income. This, together with changes in trade

agreements has led to the abandonment of many agricultural lands. As a result, Mr. Williams observed an expansion of the forest in some areas (2008). These circumstances presented the opportunity for agricultural and economic diversification and serious consideration of tourism development.

Picture 6.1: Damage Caused by Hurricane David (1979)



(Source: Scherschel in National Geographic Online, 1996-2009)

Development efforts and activities directly related to tourism are also subject to current challenges presented by the rugged topography. For instance, the cross island trail now under construction demonstrates the difficulty of operating in such a landscape. The trail is being constructed in 14 discontinuous segments, considering the uneven, varied nature of the land. (See Map 6.2 in Appendix A). Ms. Baron-George, head of the Waitukubuli National Trail Project (WNTTP) mentions the management and co-ordination of transportation along the trail as a major challenge to construction (2008). The limited land space due to the topography has also contributed to delayed construction of an international airport (2008). As a result, the island is not as easily accessible as some other Caribbean destinations.

Significance for Eco-tourism Sustainability Framework

The tourism industry exists within a broader complex set of environmental and economic circumstances, which have enabled and restricted tourism. Opportunities have been created in unfavourable conditions while constraints have plagued the potential for further development. Adapting to the disabling conditions (such as hurricanes and the rugged topography), while enhancing the positives throughout the entire system would increase resilience and secure a more stable industry.

6.2.2 Political/Economic Motivations

After Hurricane David in 1979, there was a drive towards diversification of the agricultural sector and the economy. The tourist board was formed in the early 1980s, under the Dame Eugenia Charles Freedom Party Government (Pattullo, 2005:155)¹¹. “The Government started looking at tourism as the second bread basket” says Henry George, the then chairman of the Tourist Board (2008). There was a drive to improve infrastructure and marketing. The “Clean Your Backyard Programme” was introduced by the Tourist Board in the early 80s, as a response to general dissatisfaction with the tourism service. Under this programme various service sectors such as the hotel, taxi, and tour guide operations were mobilized and required to create certain basic standards (2008). It was also recognized that an insufficient portion of the tourist dollar was remaining in communities. As a response, on island tour operators were encouraged to form links with local tour guides.

Tourism was the natural option besides agriculture. In the 1980s, the government built a cruise ship berth at Portsmouth and convinced the French to invest in a cruise ship berth at Roseau, the island’s capital. The British built a sea defence in Roseau. There were few hotels and guesthouses from the 1960s. The first purpose built hotel, now called Castaways¹², was constructed in 1961, followed by the Fort Young Hotel in 1964 and the Springfield guesthouse. There were other hotels before the 1960s, but they were

¹¹ Organized tourism development was first begun by private individuals after 1945. At that time, early legislation was developed and a tourism committee was formed (Honychurch, 2008).

¹² In the 1960s, Castaways was known as the Normandie Hotel (Honychurch, 2008).

guesthouses adapted from dwelling houses. These include Sutton House (now Sutton Place Hotel), Cherry Lodge, and Paz (Honychurch, 2008).

There was a drive towards developing infrastructure for tourism in the 1990s. Many of these developments were made possible through grant and loan funding. At the time, the government made an agreement with the Central Development Bank (CDB) for the development of eco-tourism sites. (See section 6.2.8 for further information on other site development initiatives)

This drive to develop tourism is still very much alive. In more recent times, work is being done at the Cabrits National Park for the restoration of Fort Shirley¹³. In 2006, the Eco-tourism Development Programme (ETDP) funded by the EU was started (Williams, 2008). The Tourism 2010 Policy and Master Plan are meant to guide future development of tourism (Government of Dominica, 2006). Interviewees from the Discover Dominica and Invest Dominica Authorities identified those departments as being responsible for product development, marketing and investment (2008). These are para-statal organizations or public sector entities established by an act of parliament, giving them independent mandate (2008).

The Tourism Regulations and Standards Act gives Discover Dominica authority to set standards in the sector. Every service provider must meet certain minimum standards and obtain certification and licences (2008) under the Nature Island Standards of Excellence Program. The Government has been criticized by four out of a total of eleven hoteliers for not having a clear policy vision; having a questionable commitment to eco-tourism [by such actions as pursuing cruise tourism, supporting Japan against the whale sanctuary, and promoting the destination at conventional tourist fairs] (Martin, as cited in Pattullo, 2005:157); investing too little financial resources; and, lacking in meaningful engagement with other sectors (2008). Insufficient financial investment was identified by

¹³ Fort Shirley, “constructed between 1770 and 1815...was used to defend the north of the island and the naval vessels anchored in Prince Rupert’s Bay during the period of colonial conflict” (Dominica Port Authority, 2008:2).

a sizeable majority of the interviewees. However, it has clearly recognized to some degree, the importance of tourism.

Significance for Eco-tourism Sustainability Framework

As part of the overall vision, it is important to ensure that quality standards applied are suitable to the kind of tourism being promoted and that technical and financial assistance is given to individuals who may be disadvantaged. Meaningful engagement with all stakeholders involved could aid in identifying what those standards should be. Allocation of sufficient financial and technical resources to the sectors will help facilitate proper execution of the vision.

6.2.3 Trade Agreements

Hurricanes have not been the only threat to the viability of the agriculture industry. Historically, all African, Caribbean and Pacific (ACP) countries (former colonies of a European Power) enjoyed preferential treatment under the 1975 Lomé Convention Agreement¹⁴, says Mr. Edward Lambert, National Authorizing Officer for the European Development Fund (2008). It was a convention for trade between those ex-colonies and Europe by which the ex-colonies were guaranteed preferred access to European markets for their primary produce or commodities such as bananas. The agreement operated in five year cycles. Within these five-year cycles, the European Commission at the time made a certain amount of money available to the European Development Fund (EDF). Money was allocated to the countries based on their population, GDP and overall level of development. For use of these funds, ACP countries had to develop National Indicative Programs, which detailed a proposal for the pursuit of their own development objectives (2008). The Lomé I, II, and III agreements were followed by significant changes in Lomé IV, which led to a new agreement called the Cotonou Partnership Agreement, signed in Benin in 2000. This new accord, which responded to a World Trade Organization (WTO) request for more liberalized trade arrangements, changed the rules of trade, banning all barriers to trade. Unfortunately, Dominica has been unable to compete successfully with

¹⁴ There were previous preferential arrangements before Lomé (Lambert, 2008). Preferential treatment can be dated back to the 1950s (Honychurch, 2008). The Lomé Agreements are mentioned here because they are the most recent special trading arrangements between Europe and the ACP countries.

other countries that are able to produce bananas on a larger scale and at a cheaper cost (2008).

After the year 2000, a Special Framework of Assistance (SFA) was created to assist especially banana-producing countries in light of the changes in marketing arrangements (Lambert, 2008). Under the SFA 2006, EU\$1 million or EC\$4.3 million was allocated to the Dominican Ministry of Tourism to support gains made under the Eco-tourism Development Programme (ETDP). There is also the Stabilization of Export Earnings (STABEX) arrangement, which is a mechanism of annual compensation for countries that experience losses in exports.

These new arrangements aid in economic stabilization and provide financing for needed improvements in community tourism development and resource development (Lambert, 2008). The five main components of the ETDP, as identified by Mr. Sobers Esprit, former deputy director of tourism, were institutional strengthening, community tourism projects, human resource development, Roseau development, product/site development, and destination marketing (2008). Although these are positive steps, it is too soon to determine the success of this program. Furthermore, there are no set baseline data to serve as reference for comparisons (Lambert, 2008).

Significance for Eco-tourism Sustainability Framework

Development projects such as the Eco-tourism Development Programme should be continuously monitored and evaluated, in order to determine successes and failures and to identify and implement strategies to address deficiencies.

6.2.4 Culture

Dominicans can still boast of a rich indigenous culture and heritage. Perhaps this is partly due to the remarkable ability of the Caribs to resist attacks by colonial powers and continue their way of life. As well, the rugged topography provided hiding grounds for many run-away slaves. As a result, although original cultures were affected and altered by the colonial presence, the enabling topography and a resistant people allowed for the

maintenance of a certain degree of authenticity. There still is, therefore, a very strong indigenous cultural presence. The largest remaining group of Caribs in the Caribbean can be found in Dominica (Government of Dominica, 2006:23). The authentic Amerindian and African cultures became integrated with European culture to form a unique creole flavour. The music, dances, food, and cultural wear are very much appreciated and promoted, so that younger generations continue this way of life. Cultural events such as the World Creole Music Festival and other cultural experiences during the Independence Season are a few indicators of the cultural vibrancy (Government of Dominica, 2006:23).

Significance for Eco-tourism Sustainability Framework

Culture is a major component of Dominica's tourism; therefore it must be preserved. It should be kept as authentic as possible, so that its uniqueness is maintained.

6.2.5 Social Capital, Attitudes, Behaviour, Habits & Customs

As a resident of the island, I have often heard the Dominican people complimented, admired and appreciated for their hospitable nature and contentment. Many marketing and promotional documents also refer to the friendly character of Dominicans. Historical evidence has shown the helpful nature of Dominicans. The people possess an incredible power among themselves—a connection that may be referred to as bonding social capital, which has aided recovery efforts after disasters. Probably one of its best displays was during the 1975 and 1977 tragedies. In 1975, a truck carrying 35 people from the village of Morne Prosper overturned and landed in a precipice, killing 28 individuals. In 1977, heavy rains caused a massive landslide in the village of Bagatelle, killing eight villagers, and covering houses. Each case provided a strong demonstration of community and togetherness. After the vehicular accident, volunteers helped to recover bodies hidden among trees and branches. Villagers offered their assistance in both cases (Honychurch, 1995: 252).

An interviewee from the Fisheries Division argues, however, that Dominicans have developed a culture of receiving and not giving (2008). A sizeable majority of public sector interviewees agree that there is too heavy a dependence on Government to solve all

problems (2008). This has undermined efforts at empowering communities. For example, a Local Area Management Authority has been created to manage the Soufriere Scotts Head Marine Reserve in the south of the island. This has provided an opportunity for community members in the area to take control of their community resources. Unfortunately, as noted by Mr. Andrew Magloire, acting chief Fisheries officer, residents have not been willing to take full advantage (2008). However, this same culture of receiving has benefited the country, not only financially but in terms of human resource development and capacity building. (See table 6.2 a and b in Appendix I for a list of regional and global collaborators and the assistance given).

Private sector interviewees from the Roseau Valley expressed mixed views about the role of the Government and citizens. Although it was argued that villagers need to lessen dependence on the Government and to take up a role of being more active citizens, there was also the opinion that the Government and village councils (under the control of the Government) need to take up the responsibility of listening to the concerns of the people and playing a more active role in responding to the concerns of the community (2008). Criticisms were expressed by a Trafalgar vendor about the irregularity of village council meetings, which are one of the forums where villagers' concerns are addressed. This suggests a lack of effective involvement of community members in planning and decision making.

Foreign owners of businesses may find it very difficult to accept certain social habits and attitudes. A foreign eco-resort manager complained about unacceptable noise levels within the vicinity of his business and the stealing of produce on his property (2008). These complaints were not outwardly expressed by most of the other local managers of private businesses, perhaps because many locals are accustomed to these activities. Poor customer service, however, was generally identified as a constraint by a considerable majority of both public and private sector participants (2008). "We are not a service oriented industry in Dominica," said one hotelier. Even after people are trained, they forget (2008). The litter and dumping problem was also noted by most government officials as well as private sector individuals (2008). According to the Acting Chief

Fisheries Officer, “We are moving from a traditional way of life to a fast food way of life... With that lifestyle comes... more fast foods, more disposable things... so more garbage (2008).

Significance for Eco-tourism Sustainability Framework

Interviews suggest that current social habits, attitudes and customs are both beneficial and crippling to the tourist industry. This could be due to the fact that tourism is relatively new to the island, compared to other islands such as Barbados and the Bahamas, where people have grown accustomed to the tourism business. These may be addressed by enhancing the positive social attributes while taking actions to minimize the negatives.

Bonding social capital may be further enhanced by transforming it into a more organized system that could be easily mobilized before, during and after hurricanes. People should not only be encouraged to take responsibility for their resources, but should be educated on the importance of it, so that the benefits of empowerment are understood. While management by community members is desirable, they need to be provided with basic resources by central Government in order to implement ideas and programmes successfully and to be guided by strong, responsible leadership to ensure proper implementation and monitoring. Community groups must also exercise innovation and wise use of the support offered by the Government. Forceful legislation will be needed to address littering, indiscriminate dumping, and the stealing of produce.

6.2.6 Key Environmental Considerations

Forestry

According to Mr. Williams, “forestry has been in the forefront (in promoting environmental responsibility), before niche and eco-tourism became buzz words” (2008). The Forestry Division has been active in the areas of national park development, conservation programmes, and public awareness. For example, the fact that blue diothene used to package bananas are no longer dumped in the rivers was partly credited to the Forestry Division efforts (Williams, 2008). Since 1902, a number of ordinances, acts and

regulations were introduced for the protection and management of forests and wildlife. (See Appendices F.a and F.b for a list of government and non-government agencies involved in environmental management and associated legislation and agreements, and a list of ordinances acts, and regulations). Twenty per cent of Dominica's landmass is protected either as Forest Reserve Area or as National Park Area. This aids in the protection of watersheds, or at least the headwater areas. Most of the rivers and streams originate in the interior, where these protected areas are located. (See Appendix A for maps showing protected regions).

The absence of proper environmental assessment law (Government of Dominica, 2006:56) poses a serious challenge to reducing the adverse impacts of physical developments on the island.

The protection of all eco-tourism sites¹⁵ is under the jurisdiction of the National Parks Unit. A National Parks warden states that the Unit is responsible for supervising, maintenance, and upkeep and development of eco-tourism sites within and outside the national parks system. Park wardens have four main functions: (i) maintaining the integrity of the national parks' flora, fauna, and wildlife species; (ii) ensuring protection of the most vital parts of the national parks; (iii) taking note of the classification of tourists e.g. locals versus overseas tourists, children versus adults, visitors exempted from site fee e.g. scientists & guests of the government; (iv) enforcing laws and regulations, with powers of charge and arrest (2008).

¹⁵ In 1997, tourism sites were identified and classified as eco-tourism sites under the jurisdiction of the National Parks. It was then that fees for entry to these sites were introduced. Eco-tourism Sites are generally natural attractions (waterfalls, crater lakes, sulphur springs etc.) and cultural sites (Cabrits) that have traditionally/historically been visited by locals and non-resident visitors. However, according to the National Parks and Protected Areas (Eco-tourist Site) (User Fee) Regulations (SRO 27 of 1997) gazetted on 8th May, 2007 a designated ecotourism site is a site for which user fees are charged for access by non-resident visitors. According to Schedule 1 of the Regulations, the eleven designated site are Boeri Lake, Boiling Lake, Botanical Gardens, Cabrits National Park, Emerald Pool, Fresh Water Lake, Indian River Middleham Falls, Soufriere Sulphur Springs, Syndicate Nature Trail and Trafalgar Falls. Subsequently, in 2008 another SRO was passed providing for an increase in the user fees and the inclusion of two other sites namely Morne Trois Pitons Trail and Morne Diablotin Trail. The other natural attractions such as Sari Sari Falls, Victoria Falls and Ti Tou Gorge are eco-tourism sites, but are not yet considered designated ecotourism sites. The National Parks Unit is responsible for protection of eco-tourism sites both within and outside the National Parks System (Williams, 2008).

Mr. Williams identified three main challenges faced by the Forestry Division. These are budgetary constraints; carrying capacity issues, which pose a negative impact on the visitor experience; and indiscriminate littering (2008). A National Parks warden stationed at Trafalgar, also admitted that, although there has been some recent upgrading within the national parks, availability of money was a limiting factor for national parks maintenance and upkeep and that there was occasional littering at the Trafalgar Falls viewing platform (2008).

Marine/Fisheries

Marine habitat issues are largely addressed under the Fisheries Act of 1987 under which there is the Fisheries Development Plan that covers infrastructure, training, fisheries and navigation, conservation, and preservation (Magloire, 2008). The major challenges or threats to fisheries include climate change; providing for food security into the future; competition between traditional and recreational users; indiscriminate dumping (2008); destructive fishing techniques; coastal construction; household and industrial waste; and, pollution from boats and ships (Institute for Tropical Marine Environment—ITME, 2008b). More frequent hurricanes and increased rainfall in the dry season have led to erosion and siltation, which negatively affects the health of corals. According to the Institute for Tropical Marine Environment, such natural disturbances decrease sediment retention, leading to siltation and the suffocation of marine organisms (2008b). This is evident in areas such as Fond Cole where there has been loss of coral and sea grass habitats—Dominica’s largest marine habitat on the West Coast. The rise in sea surface temperatures in 2005 caused severe bleaching throughout the Caribbean, and Dominica’s corals were affected the most. Bleaching events were also experienced in the two previous years. The combined effect is a weakening of ecosystem integrity (ITME, 2008b). These are serious impacts, considering the fact that coral reefs are “marginal communities on the narrow shelf of Dominica” (<http://www.itme.org/habitatsD2007/status08.htm>, February 12, 2009). Mr. Magloire, acting fisheries officer, argues that tourism puts greater demands on local production (to supply tourist-oriented restaurants), and that demand is expected to grow into the future. Due to the fact that the island is not engaged in a high level of aquaculture and that

catcher fisheries tend to over-exploit, there is a concern for potential food insecurity (2008). As well, finding fair and acceptable ways of partitioning the resource among the various users is a great challenge.

According to the ITME, the fishing techniques used—“line and hook, fish pots, seine nets, and spear fishing”—throughout the past centuries have caused the depletion of reef fish populations. Many species are no longer seen.

(<http://www.itme.org/habitatsD2007/status08.htm>, February 12, 2009). Invasive species are of particular concern. The means of invasion is from ballast water released by boats and ships. The widespread occurrence of an invasive species known as *Halophila stipulacea*, or Halophila seagrass “along most of west coast between Fond Cole and Lamothe Bay” (<http://www.itme.org/habitatsD2007/status08.htm>, February 12, 2009) is a great threat to local seagrass species because of its aggressive nature. Presently, “measurements of marine pollution...have not been carried out” (<http://www.itme.org/habitatsD2007/status08.htm>, February 12, 2009).

The Fisheries Division has attempted to address some of these challenges. In response to climate change, additional safety and precaution measures are encouraged during the hurricane season. Also, fishermen are encouraged to fish far from the coast in order to avoid the siltation problem (Magloire, 2008). Food security concerns are met with a monitoring system and regulatory measures. For example, regulations restrict the size and classes of fish to be harvested and the types of fishing instruments that can be used. There is preservation of the habitat, by for example, monitoring the impacts of quarrying, dumping, and carrying capacity on corals.

In an effort to address conflict among users and to allow for the sustainable utilization of marine space by local people, the Soufrière Scotts Head Marine Reserve (SSMR) was developed and officially registered in 1998. (See map 6.3 in Appendix A for the location of the reserve along the west coast in the southernmost section of the island). According to Nigel Lawrence, manager of the Soufrière Scotts Head Marine Reserve its creation was enabled after intense study of that marine environment (2008). He says, “There is no

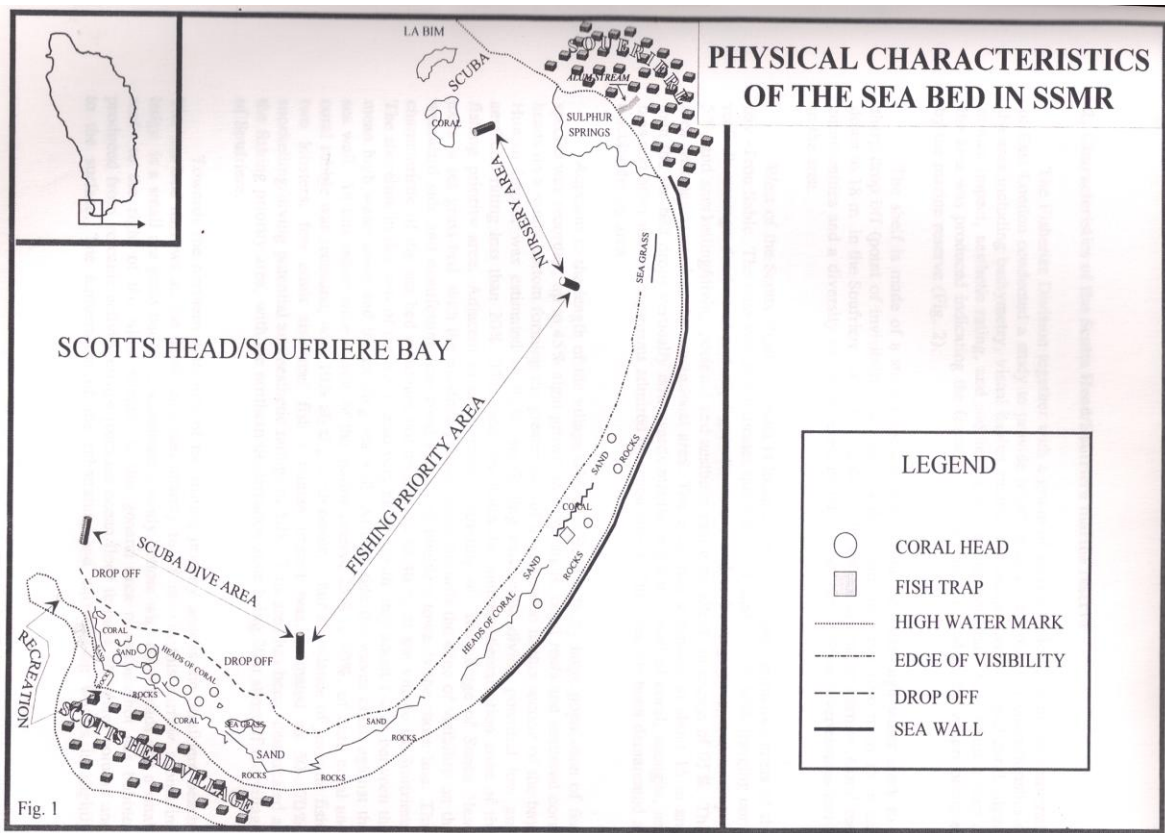
other place in Dominica's fishery waters where any arrangement for sharing of resources is law” (2009). The reserve is managed by LAMA—the Local Area Management Authority. It consists of multiple stakeholders including fishers, youth groups such as scouts and girl guides, and all other persons with interest in the area (2008).

Two key factors have kept the negative impacts of multiple uses on the resource at a manageable level. The seasonality of the Dominican tourist industry allows for a 4-6 month break in heavy use by tourists which reduces the pressure on the marine environment (Lawrence, 2008). Also, as can be seen in map 6.1 below, fishing does not occur in the same region as diving. There is a fishing priority area, which was carefully selected after studying the area’s marine ecology. The majority of fishing occurs in the nearshore pelagic region. Pot fishing, which occurs at greater depth, near the coral is diminishing (Lawrence, 2009). The need to protect the spawning region led to the creation of the nursery identified at the top of the map. (2008). The main scuba diving area is located in the south, where more coral can be seen.

More recently, those tourists engaging in scuba diving are being charged a user fee, which will go towards purchasing Fish Attracting Devices (FADs) for fishers to attract non-reef fish species. These will be set up at locations outside the marine reserve, in order to reduce pressure within the reserve (Lawrence, 2009). It is hoped that these FADs will encourage more of the younger fishermen to fish out in the open water, leaving more area within the SSMR for the small scale, subsistence, and old age fishermen to fish. Proper management in the SSMR continues to be challenged by ignorance about the SSMR within the tourism sector, which has led to illegal diving and activity in the reserve (2008).

The Fisheries Division is trying to address the indiscriminate dumping problem through education and various activities such as the annual beach cleaning campaign (Magloire, 2008).

Map 6.1: Soufrière Scotts Head Marine Reserve



(Source: Lawrence *et al.*, 1993)

Waste Management

Proper garbage management is recognized as a serious need (Magloire, 2008). The mission statement of the Dominica Solid Waste Management Act 2002, Act #2 expresses the intention to manage waste with the goal of maintaining human health and environmental integrity. It states:

The Dominica Solid Waste Management Corporation will reduce public health risks and protect the environmental integrity of Dominica through the provision and management of an integrated system for public education and awareness and for the collection, treatment, recycling and disposal of solid and hazardous waste (Government of Dominica, 2002).

Mr. Scotland, general manager of the Dominica Solid Waste Management Corporation, identifies the Corporation's major challenge as poor drainage at the landfill; no transfer

stations; budgetary constraints (example, not enough capital to buy needed equipment); late payment from the environmental levy; inadequate and untrained operational staff in some areas; garbage collection services untimely in some communities; indiscriminate dumping; difficulty of manoeuvring garbage trucks on the rugged terrain (2008).

The Corporation is financially dependent upon two main forms of taxation—the environmental levy (under the Solid Waste Management Act), which is paid by visitors on the island, and a surcharge on all goods coming into the island (under the Income Tax Validation Act). The government collected EC\$8.8 million in 2007 from these sources alone. Mr. Scotland, head of the Solid Waste Management Corporation, expressed concern about these monies being given to other departments deemed to be more of a priority. Also, money from the environmental levy is often submitted in an untimely fashion (2008). However, he admits that recently, the government has recognized the importance of a clean environment. In the last financial year, the Corporation received 100% of the environmental levy and 25% of the surcharge.

An island-wide clean up initiative funded by the Government of Venezuela was started in 2008 to “rid the entire country of all derelict vehicles and white goods” (<http://www.newsdominica.com/press/datelistqry.cfm>, March 16, 2009). The goal was for these materials to be collected and transported to the Fond Colé landfill, where they would be compressed and exported as recycleable metal. The first clean up target was three acres of land surrounding the old Jimmit landfill site, extending down 1.5 metres below the sea level near the coastline. The long-term plan is to transform the area into a recreational park (News-Dominica.Com, 2008).

The Environmental Health Services Act A of 1997 “makes provisions for the conservation and maintenance of the environment in the interest of health generally and in relation to places frequented by the public.” The Environmental Health Department works closely with the Ministry of Tourism and the Dominica Water and Sewerage Company (DOWASCO) to ensure that the tourism product is safe. One of the most recent collaborations, as stated by Mr. Bonifas Xavier, Chief Environmental Health Officer, will

involve the monitoring of recreational waters (2008). Sanitary surveys are also done in water catchment areas and distribution systems. The department also works with hotels and other food establishments on water certification programs.

Among the department's challenges are limited resources (money and equipment); difficulty in law enforcement, example, with regard to derelict vehicles and littering; loss of trained officers to other countries; the expense involved in education; the time involved with networking; and, meeting the many demands of people. The financial problem is addressed by seeking grants (2008)

Significance for Eco-tourism Sustainability Framework

Such environmental concerns have great implications for tourism, as they jeopardize the very environment that tourists are looking to enjoy. Although efforts have been made to protect fisheries and forestry, positive trends are being met with major challenges such as limited resources (financial, physical, and human); lack of proper law enforcement; poor physical planning; conflicting Government priorities; climate change; the rugged topography; changes in the world economy; the dilemma of needing to increase number of visitors and protecting the environment; the challenge of partitioning the resources between traditional and recreational users; and, the challenge of maintaining sustainable use of resources.

6.2.7 Public Awareness, Outreach, Human Resource Development and Education

There were some major writings from 1791 to 1949 (during the colonial period), which raised public awareness about the island in terms of its beautiful natural features and suitability for settlement. (See table 6.1 below). Although most of these writings were a source of promotion for the island, some of them, such as *Sugar Islands* recognized challenges to development. In the chapter entitled "Typical Dominica," Alec Waugh discusses the susceptibility of development projects in Dominica to failure, while praising its beauty and remarkable nature (Honychurch, 2008). The Discover Dominica Authority now has responsibility for promoting the island.

Table 6.1: Major Historical Writings on Dominica

Author	Book Title	Year	Main Content
Thomas Atwood	History of Dominica	1791	Dominica promoted as a place for settlement
Frederick Albion Ober	Camps in the Caribees	1880	Dominica's natural features extolled
James Anthony Fowd	Bow of Eulisees	1887	Island's natural features highlighted
Heskeith Bell	Hints to Intending Settlers	1900	Island publicized
Alec Waugh	Sugar Islands	1949	Island's natural beauty praised

(Source: Adapted from Honychurch, 2008)

Public awareness relating to the broader setting surrounding tourism may have first received attention in the forestry-related public awareness programme initiated in 1949, when communities all over the island were educated on the function of the Forest Service and its expectations of individuals living in these communities. Since then, forest related public awareness efforts have included radio programmes on conservation and related issues, for example, the 1975 radio programme called “Conservation” (James, 1999:4-8). There have been other public awareness programmes throughout the years, all aimed at increasing knowledge of natural resources and wildlife, and the importance of conservation.

Training programmes have also been developed to improve the skills of employees in the Forest Service. Dominican graduates return home from the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) in Trinidad and the University of Havana in Cuba to use their knowledge and skills for the improvement of the Forest Service. (James, 1999:9-12)

There has also been training for farmers and agro-processors for quality standards essentially for the increase in production. According to the Permanent Secretary in the Ministry of Agriculture, the Ministries of Agriculture and Tourism meet on a monthly basis for the planning of a strategic plan for agro-tourism development, which is the

development of agriculture products, farm-based agro-tourism, culinary tourism, and health and wellness tourism (2008).

More directly for education in the tourism industry, the Tourism/Hospitality Program at the State College was created in order to facilitate the certification process. The Government saw the need for trained personnel in the industry, states Katie Julien, the tourism co-ordinator and lecturer at the Dominica State College (2008). The goal is for every tourism employee to become certified. People are trained as vendors, tour guides, tour operators, and taxi operators. There are also Ministry of Tourism scholarships to pursue studies in tourism. The Discover Dominica Authority and the Dominica Hotel and Tourism Association (DHTA) are involved in tourism-related training, says Mrs. Judith Pestaina, immediate past president of the DHTA (2008). As well, discussions between the Ministry of Tourism and Ministry of Education to incorporate tourism as part of the curriculum for primary & secondary schools are identified by the Permanent Secretary in the Ministry of Tourism as ongoing (2008). (See Appendix I for a list of some regional and international collaborators and their functions as these relate to the tourism industry).

Significance for Eco-tourism Sustainability Framework

Public awareness is a very powerful tool that can be used, not only to raise consciousness about environmental issues and the island as a tourist destination, but to promote and encourage development through the enhancement of positive attributes such as the uniqueness of natural resources, while minimizing the effect of negative conditions such as the rugged topography by publicizing ways of adapting to such conditions. This marketing approach may be used to attract investors.

Returning graduates are a useful resource, not only because of their skills but particularly because they have first hand knowledge about the island and may be more likely to have a genuine interest in environmental protection and wellbeing of the people.

Education is also a significant tool that can be used to transform ways of thinking and behaving. Tourism-related education and training should include a broad understanding

of ecology and environmental issues and other training in tourism-specific areas such as hospitality and quality customer care.

6.2.8 Site Development

The first site to be established as a visitor destination was the Botanic Gardens in 1889/90 (James, 1999:1). The next serious attempt at developing the country's natural sites was of the Emerald Pool in 1975, when the National Parks and Protected Areas Act was established (1999:8-9). Sites are still being developed, with funding from the European Union (Williams, 2008; Honychurch, 2008). In the 1980s, the EU, which was the EC at the time, offered grants for the development of business centres at the Trafalgar Falls, and the Emerald Pool, which were two of the earliest sites to which access routes were constructed. The CBD provided loans for development of the Fresh Water Lake, the Soufriere Sulphur Springs, Syndicate Estate, the Carib Model Village, and Middleham Falls.

Significance for Eco-tourism Sustainability Framework

The development of additional sites is a good way of reducing stress on the most popular sites such as the Trafalgar Falls and the Emerald Pool, while generating revenue through user fees. Future efforts at site development must seek to protect and enhance valued ecosystem components.

6.2.9 External Assistance/ Collaboration for Research

One can say that research on the island started from the days of Columbus in the late 1400s, when it was introduced to Europe and eventually, to the rest of the world. Research assistance for studies on wildlife and the forests has been very common from agencies such as the World Wildlife Fund, the Caribbean Meteorology and Hydrology Institute, as well as academic institutions (James, 1999:3-22).

Critics such as Mr. Martin (local environmentalist) are wary of the environmental cost of funding arrangements (2008). One case in question is the Government's decision to support Japan at the International Whaling Commission (IWC) against the whale

sanctuary. It has been speculated that the Government sided with Japan in return for funding to develop a fisheries complex in the island's capital of Roseau, as US\$12 million was received from Japan for that purpose (Pattullo, 2005:160).

Significance for Eco-tourism Sustainability Framework

Though research and other forms of assistance are important, they should not encourage arrangements and actions that question the Government's commitment to environmental protection and sustainability.

Table 6.3 below presents an Eco-tourism Sustainability Framework for Dominica based on the tourism sustainability principles highlighted at the end of chapter 3 and key considerations for Dominica identified throughout chapters 4, 5, and 6.

6.3 SPECIFICATION OF THE TOURISM SUSTAINABILITY FRAMEWORK

Table 6.3: Dominica’s Eco-tourism Sustainability Framework

Gibson Principles	Implications for Eco-tourism In Dominica Processes for fostering, evaluating, designing and promoting tourism initiatives, including government laws, plans, policies and programmes, and other private and civil society sector initiatives should build a context (political/regulatory, economic, socio-cultural, etc.) that:
Socio-ecological System Integrity	<ul style="list-style-type: none"> • supports a clear policy vision for tourism development that values and recognizes benefits of socio-ecological integrity; • exercises a strong commitment to sustainability, unwavering by political bribes or favours, unless the alternative poses a greater threat to sustainability; • provides sufficient financial, physical, and human resources to the sectors responsible for the execution of this vision; • focuses less on increasing the number of cruise ship visitors and more on the more ecology conscious market; • supports environmental protection (to include the marine and freshwater habitats and forest resources) and ensures that the relationship between the social and biophysical is one that enhances the wellbeing of both; • establishes environmental protection and conservation firmly in legislation and other encouragements for practical application (enforcing legislation such as the Litter Act and the Marpol 73/78 Convention); • ensures consideration of the broad range of Valued Ecosystem Components (VECs)¹⁶ (to include elements of environmental, cultural and historic importance) in tourism planning, with all stakeholders deciding (through consensus building) what is valued; • creates opportunities for the return of Dominican graduates, who possess needed skills in area of natural

¹⁶ A Valued Ecosystem Component (VEC) is “the environmental element of an ecosystem that is identified as having scientific, social, cultural, economic, historical, archaeological or aesthetic importance” (http://www.ceaa.gc.ca/012/015/part2_e.htm, April 10, 2009).

Gibson Principles	<p>Implications for Eco-tourism In Dominica Processes for fostering, evaluating, designing and promoting tourism initiatives, including government laws, plans, policies and programmes, and other private and civil society sector initiatives should build a context (political/regulatory, economic, socio-cultural, etc.) that:</p>
	<p>resource management;</p> <ul style="list-style-type: none"> • encourages and facilitates frequent public awareness campaigns to raise consciousness of environmental protection, conservation, responsibility; • encourages education and training to include a broad understanding of ecology and environmental issues, and other training in tourism-specific areas such as hospitality and quality customer care; • raises and maintains quality standards within the tourist industry (in areas such as accommodation, physical infrastructure, and skills-building) while respecting sustainability principles; • improves air access; • develops effective marketing and promotion.
Livelihood Sufficiency and Opportunity	<ul style="list-style-type: none"> • ensures opportunities are created for community members to improve their living standards, with special consideration for poorer categories of the population and that such initiatives as the Nature Island Standards of Excellence do not result in the exclusion of this sector of society because of the nature of its requirements; • finds and keeps adequate and healthy means of making a living. • encourages the development of more local area management authorities, like the one managing the Soufrière Scotts Head Marine Reserve, which legislates the sharing of resources between traditional and recreational users.
Intragenerational Equity	<ul style="list-style-type: none"> • reduces the gap between rich and poor; • strengthens support systems that seek to tackle the inequities (particularly in discrimination due to social

Gibson Principles	<p>Implications for Eco-tourism In Dominica Processes for fostering, evaluating, designing and promoting tourism initiatives, including government laws, plans, policies and programmes, and other private and civil society sector initiatives should build a context (political/regulatory, economic, socio-cultural, etc.) that:</p>
	<p>class, economic rank, and political and/or religious affiliation);</p> <ul style="list-style-type: none"> • favours tourism options that provide opportunities for all regardless of social class, economic rank, political or religious affiliation.
Intergenerational Equity	<ul style="list-style-type: none"> • protects the foundations for the wellbeing of future generations in terms of socio-ecological integrity and economic viability of all tourism ventures by requiring attention to cumulative effects, denying approvals for new activities that threaten long term damage (adopting the trade off rules about not displacing significant adverse effects to future generations).
Resource Maintenance and Efficiency	<ul style="list-style-type: none"> • supports and is part of a larger effort to use renewable forms of energy such as hydro and geothermal, and • encourage investment in projects that will support development or and conversion to these forms of energy; • supports a larger effort to reduce, reuse and recycle, thereby reducing pollution and cutting down on waste; • ensures that the primary industries of agriculture and fisheries are not sacrificed in the process of tourism development; • recognizes and realizes ways by which the relationship between tourism and these primary industries can be further tightened and enhanced for the benefit of all.
Socio-ecological Civility and Governance	<ul style="list-style-type: none"> • ensures effective inclusion of relevant interest groups in planning and decision making; • makes special efforts to engage community members, who will be affected directly by tourism development projects; • gives serious consideration to and respect for diverse opinions;

Gibson Principles	Implications for Eco-tourism In Dominica Processes for fostering, evaluating, designing and promoting tourism initiatives, including government laws, plans, policies and programmes, and other private and civil society sector initiatives should build a context (political/regulatory, economic, socio-cultural, etc.) that:
	<ul style="list-style-type: none"> • fosters community groups that are truly representative of the diversity within areas, and can effectively exercise their power by generating ideas and taking decisions and actions to chart their own futures; • encourages meaningful consideration of ideas and concerns from communities and other concerned parties by central government • encourages management of resources by communities, while educating the public about the importance of local ownership; • provides support (financial, physical, educational, and skills-wise) to community groups for the proper management of resources and programmes; • encourages innovation among community groups.
Precaution and Adaptation	<ul style="list-style-type: none"> • seeks to understand the human and biophysical system as a whole, consisting of interdependent parts; • recognizes the complexity of socio-ecological systems and taking measures to increase resilience after disturbances; • seeks to enhance existing positives, while adapting to unfavourable conditions; • ensures monitoring of all obvious and potential elements of surprise, both natural (example: hurricanes and volcanic eruptions) and human (example: economic shocks); • ensures constant monitoring and evaluation of all development projects; • builds economic diversity ensures that the systems in place are flexible enough to adjust;

Gibson Principles	<p>Implications for Eco-tourism In Dominica Processes for fostering, evaluating, designing and promoting tourism initiatives, including government laws, plans, policies and programmes, and other private and civil society sector initiatives should build a context (political/regulatory, economic, socio-cultural, etc.) that:</p>
	<ul style="list-style-type: none"> • ensures that all structures built cater for natural hazard shocks; active effort to mitigate adverse impacts of climate change, example, damage by frequent and intense hurricanes, and coral damage; Investing in economic diversification; • establishes Government ministries and processes that are flexible enough to work together to address inter-disciplinary issues; • avoids taking development risks for the sake of convenience or short term gains; • considers a broad range of environmental factors in tourism planning; • develops affordable ways of assessing alternatives and cumulative impacts of tourism undertakings and environment thresholds (by monitoring significance through assessment of factors such as carrying capacity), and acknowledging physical and time boundaries in the assessment process; • allows for strategic level plans, policies and programmes to be properly implemented, monitored, and reviewed regularly; • builds and strengthens social capital to aid in building resilience and in disaster management
Immediate and Long-term Integration	<ul style="list-style-type: none"> • Within all tourism activities and developments, seeking to address all sustainability requirements, as a set of interdependent parts, each one enhancing and complementing the other.

CHAPTER 7: A TEST OF THE DOMINICA ECO-TOURISM SUSTAINABILITY FRAMEWORK

This chapter tests the application of the Dominica Eco-tourism Sustainability Framework (elaborated in the previous chapter) in an assessment of the current situation, in order to determine how well the Dominican context serves growth of the kind of tourism highlighted in the framework. Gaps in the current approach to eco-tourism are identified and opportunities for improvement discovered. Key considerations for Dominica's ecotourism are identified in this process. The information in this chapter was gathered from secondary sources, interviews, and participant observations.

Dominican authorities have made some efforts at considering sustainability more seriously. In particular, the Forestry and Fisheries divisions and other government departments with responsibilities directly related to the environment (such as environmental health and solid waste management) have made some positive contributions; however, attempts continue to be hindered by limited financial resources, insufficient collaboration between and among private and public sectors, weak law and enforcement; the intrinsic vulnerability of Small Island Developing States (SIDS) and a host of related problems previously mentioned. Although exploration of the factors affecting the potential of tourism reveals positive movements towards sustainability, the vulnerability of SIDS limits the island's ability to realize the full benefits of applying the eco-tourism sustainability framework. Many of the hindrances are linked to a lack of sufficient financial resources, for in the absence of financial support, a comprehensive framework for sustainable tourism development cannot be effectively implemented, monitored and assessed regularly.

7.1 TESTING THE APPLICATION OF THE DOMINICA ECO-TOURISM SUSTAINABILITY FRAMEWORK

7.1.1 Socio-ecological Integrity

The broad tourism trade-off involves the desire to attract more tourists (with its associated opportunities for strengthening the socio-economic aspects of the overall system) and the need to protect the ecological foundation for tourism and other socio-

economic activities on the island. There is always the question of whether or not the interest in and encouragement of cruise ship arrivals from the early 1990s is supportive of the eco-tourism being promoted and marketed. A considerable majority of interviewees within the public and private sector identified Dominica's tourism as nature-based tourism comprising of a variety of natural sites and activities, a distinct cultural heritage, and small cottage-type industries (2008). The vision for tourism as stated in the Tourism 2010 Policy reads as follows:

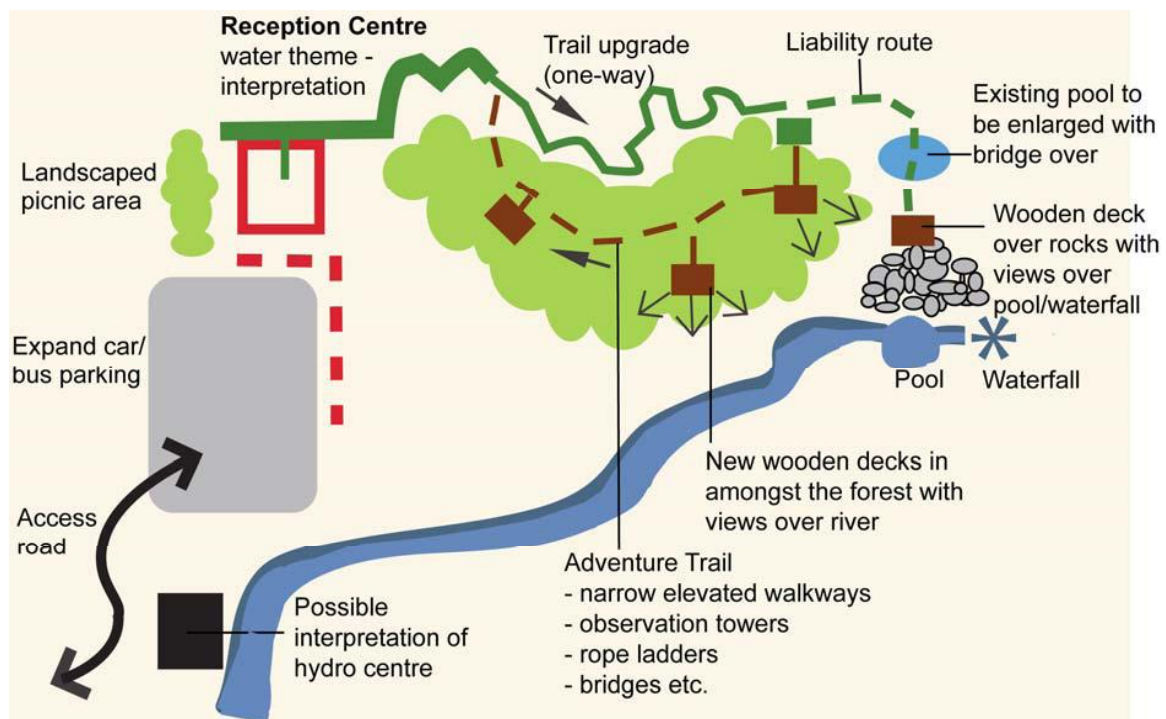
Dominica will pursue sustainable tourism that enriches the lives of all citizens by creating economic, social and cultural opportunities, protecting the natural resources and scenic, heritage and cultural features of the country, nurturing community involvement in tourism at sustainable levels, and by creating career paths for the young people of Dominica (Ministry of Tourism and National Development Corporation, 2005:14). (See Appendix G for a list of Dominica's tourism guiding principles)

However, there was a general consensus among all the interviewees that Dominica's tourism is still in its infancy, and although there has been some progress, there is room for much improvement towards sustainability (2008).

Vendors and taxi operators expressed a need for more business. The vendors especially voiced a need for a greater number of visitors to patronize their businesses (2008). The crucial question is what kinds of tourists—cruise ship or stay-over tourist – would be most appropriate and consequently what type of tourism should be promoted? As Mr. Williams stated, “while we market Dominica as an eco-tourist destination, there is also simultaneously this drive to encourage more cruise ship tourists to Dominica, but as a poor country we have limited choices” (2008). At present, tourist numbers are low enough to limit serious environmental damage. Still there is some concern for the carrying capacity at popular sites (2008). Other sites have been developed in an effort to reduce the impact on the most popular ones; however, these efforts have not caused sufficient diversion of cruise visitors.

The desire to expand the carrying capacity of the most frequently visited sites such as the Trafalgar Falls and the Emerald Pool is conveyed in the tourism masterplan. There is also some concern for the carrying capacity of the town of Roseau with the growth of cruise ship tourism (Government of Dominica, 2006:117). The reason for such concern for the city is not based on empirical impact evidence, but on assumptions given the number of cruise ship tourists who actually disembark. However, this fear may not be too urgent because even on peak days, there are no reports from shops or restaurants about overcrowding (Government of Dominica, 2006:118). Carrying capacity at the sites is a reasonable concern, as the number of tourists visiting the sites on peak days may be as much as 1,700 at the Trafalgar Falls and 1, 500 at the Emerald Pool (2006:118). One national parks warden noted a significant deterioration of the surroundings at the Emerald Pool. The number of people visiting the sites is monitored by park wardens, in order to determine how it would impact on the sustainability of the sites (2008).

Figure 7.1: Proposed Development of Trafalgar Falls



(Source: Government of Dominica, 2006: 170-171)

The Trafalgar Falls, one of the most visited sites in the Roseau Valley, is on the list of top priority areas for carrying capacity expansion. The proposed plan is illustrated in figure

7.1 above. There has also been some effort to develop new attractions such as the Biopark and Marine Interpretative/Visitor Centre, in order to reduce pressure on existing sites; however, one restaurateur claims that these efforts have been unsuccessful (2008).

As mentioned in chapter 6, the Forestry, Fisheries, Solid Waste, and Environmental Health Departments play a big role in managing social and ecological systems. There are also non-governmental organizations such as the Waitukubuli Ecological Foundation (WEF) that promote development through preservation. This organization has, for example, strongly opposed a proposal for an oil refinery in Dominica (Dominica News Online, 2007), arguing that it would not be reflective of the kind of eco-tourism image being portrayed.

Government projects such as the Waitukubuli National Trail Project (WNTP) funded by the European Union have a sustainability component, which is a crucial part of the funding agreement. One of the aims is for community projects to continue into the future (Ministry of Tourism, Legal Affairs & Civil Aviation, 2006b:1). There is support for legislation to improve the climate for investment and best practices for environmental management are encouraged. Also, according to the National Authorizing Officer, all projects have implementation, monitoring, evaluation, and auditing components (2008). However, implementation of projects is often frustrated by the unpredictability of funding from the EU. The frequency with which the financing rules change is also a major concern. At the local level, applying local procedures to EU programs presents a challenge. According to the National Authorizing Officer for the European Development Fund, Mr. Edward Lambert, within the public sector, “unfamiliarity with EU procedures” presents a great challenge (2008). For instance, sometimes members of the public sector attempt to evade the tendering process, in which there should be at least three competitive tenders for a certain type of service or development project (2008). All this negatively affects the accessibility and availability of funds, which may affect proper implementation, monitoring, and evaluation of projects. Nevertheless, EU funds have facilitated the development of a strategy for community tourism development; the building of the infrastructure for tourism; and training of personnel under the “human

resource development” component, under the Eco-tourism Development Programme of 2006. Although the benefits from these funds have penetrated multiple sectors, it is difficult to determine the direct impact, as there were no baseline data to compare with the end results (2008).

There are some attempts by the private sector to adopt sustainability approaches. All Dominican accommodations are considered small¹⁷ by industry standards. Amongst those accommodations studied in this research, the largest were the Garraway Hotel and the Jungle Bay Resort, offering 31 rooms and 35 cottages respectively. The smallest were the D’Auchamps Cottages, the Rainforest Shangri-La Resort, and Tia’s Bamboo Cottages, providing 2 cottages, 3 cabins, and 4 cottages respectively. As seen in table 7.2, owners of private accommodations and businesses (to varying degrees) make voluntary efforts to conduct their businesses in an environmentally friendly and sustainability-conscious manner. It must be noted that River Rock Café and Screw’s Sulphur Spa do not offer accommodation. The former functions as a small restaurant, offering local cuisine to visitors and locals, while Screw’s is a natural hot water development site.

¹⁷ The tourism industry defines a small hotel as 75 rooms and under; therefore, even the largest accommodations in Dominica such as the Garraway hotel (of 31 rooms) and the Fort Young hotel (of 71 rooms) are considered small by industry standards (Martin, 2008)

Table 7.2: Private Establishments, Their Environmental Consciousness and Economic Success Ratings

Accommodation/Private Business	Environmentally Conscious Efforts	Social Responsibility	Economic Success
Garraway Hotel	possess an environmental policy; use of biodegradable products and environmentally friendly products/chemicals; promotes energy saving practices	All employees local; all food bought locally	relative success, with 60% occupancy
Exotica Cottage Resort	built into the surroundings, with environmental consciousness; water and energy saving devices and practices; water collection and storage; waste differentiation (biodegradable waste goes back to farm); located on 4-acres of farmland; organic farming practiced	All employees local; all food bought locally from farmers in neighbouring communities and the Roseau Market	Rated at 6 on a scale of 1-10 by co-owner; lots of room for improvement
Jungle Bay Resort & Spa	built into the surroundings, with environmental consciousness--land was not cleared in order to build; minimal disturbance to the environment; composting; minimize energy use, example, the re-use of waste material; cottages allow for natural ventilation	All 60 employees are local; 95% of staff from surrounding villages; sell local crafts and paintings; involved in community development initiatives, example, micro-loan program for local entrepreneurs; 95% of food organic and locally grown; preferential arrangements with local farmers; involved in farmers initiative, offering financial assistance, and tour guide training	not available
Papillote Wilderness Retreat	built into the surroundings, with environmental consciousness; recycling of plastic bottles; composting; use of energy saving light bulbs; enhancement of natural features in the environment, example 2 natural on-site waterfalls	All employees local, mostly from the community of Trafalgar; most produce from Trafalgar and neighbouring communities	varies; to be considered in the broader context--late 70s political instability, Hurricane David in 1979. good years and bad years

Accommodation/Private Business	Environmentally Conscious Efforts	Social Responsibility	Economic Success
	& 4 acres of tropical garden		(1988 being one of the best years as it was the independence reunion year)
D'Auchamps Cottages	Separation of biodegradables; use of local materials for building	All employees local; Majority of food bought locally	quite successful
Tia's Bamboo Cottages	built into the surroundings, with environmental consciousness--cottages built in between trees; very little use of plastic; use of local materials for building	Majority of employees local; all food bought locally from local farmers	very successful
Chez Ophelia	Protection of surrounding trees; use of environmentally friendly soaps	All employees local; Majority of food bought locally from the Roseau Market	much room for improvement; struggling with low occupancy
Rainforest Shangri-La Resort	built into surroundings with environmental consciousness--no trees were cut; storm damaged trees were used; bio-degradable waste sent to nearby pig pen	Majority of employees local; all food bought locally from farmers in neighbouring communities and the Roseau Market	relatively good
Screw's Sulphur Spa	built into surroundings with environmental consciousness, example, trees were not cut; plants trees; use of local materials for building	Majority of foods served are bought locally from the Roseau Market	relatively good
Cocoa Cottages	recycling; composting; energy saving devices, example, low energy bulbs	Majority of food bought locally, from neighbouring villages and Roseau Market	relatively good; much room for improvement
River Rock Café	use of local material to build	All employees local; all food bought locally from Roseau Market	varies; good years and bad years

Two impressive efforts at conservation and environmentally-friendly practices are by the Papillote Wilderness Retreat, and the Exotica Cottage Resort. Exotica, which rents 6 out of 8 cottages, uses solar water heating; various energy-saving facilities such as vents and louvers instead of air conditioning; and, water saving devices and practices, like aerators, on-site water storage, and water catchment from the roofs.

Picture 7.1: Exotica Cottages



(Source: Exotica Cottages, 2009)

The cottages were built out of hardwood and stone and in such a way as to imitate the naturally sloping land, as is illustrated in Picture 7.1 above. The cottage design imitates the traditional Dominican home. This establishment is located on a 4-acre farm, so biodegradable waste is returned to the farm. There is a strong connection with the local community. All employees are local, and produce is obtained from neighbouring farmers and the Roseau market, when the on-site farm is in short supply. Also, neighbouring farmers can acquire food from Exotica, when they are in short supply.

The Papillote Wilderness Retreat, which is nestled between the mountains and hills of the Roseau Valley and just beneath the Trafalgar Falls (See picture 7.2 below) is one of the first eco-type establishments on the island. It is another example of building into and working with the natural environment. There are four hot tubs, 2 waterfalls, and 4 acres

of botanical gardens. They practice recycling of plastic bottles, composting. Energy-saving light bulbs are used as well.

Picture 7.2: Papillote Wilderness Retreat



Source: Lambert, December 2008

(Source: Papillote Wilderness Retreat, 2008)

According to Ms. Ann Jno Baptiste, co-owner, the establishment employs fifteen people from Trafalgar, has paid approximately EC\$500,000 in salaries for that community and has practiced generational employment (which refers to the employment of parents and their children). About EC\$700,000 has been put into the Roseau Valley for the purchase of produce bought from local farmers from the surrounding communities of Laudat, Trafalgar, and Morne Prosper (2008).

Table 7.3: Summary of Challenges/Concerns for Accommodations and Private Businesses

Accommodations/Private Businesses	Challenges/Problems/Concerns
Garraway Hotel	<ul style="list-style-type: none"> high cost of fuel; competition from cruise ship; tourist harassment; disorganized reception at the Roseau Cruise Ship Berth; difficulty in accessing financing; limited air access; outdated, insufficient statistics; lack of implementation by Government; tourism not a priority for Government
Exotica Cottage Resort	<ul style="list-style-type: none"> challenge of sustaining a market presence; low occupancy; high cost of doing business; absence of proper strategy for marketing; island difficult to find; lack of a clear policy and vision; lack of proper marketing; lack of effective engagement between public sector and other sectors; inadequately trained employees
Jungle Bay Resort & Spa	<ul style="list-style-type: none"> inadequately trained employees; literacy problem amongst trainable people; inconsistent availability of produce/commodities; undependable electricity service; high cost of fuel
Papillote Widerness Retreat	<ul style="list-style-type: none"> limited air access; changes in world economy; changes in world climate; unsafe road network; high cost of electricity/high cost of fuel; inept decision making
D'Auchamps Cottages	<ul style="list-style-type: none"> high operating costs; unreliability of tourism business; difficulty in getting to the island/accessibility
Tia's Bamboo Cottages	<ul style="list-style-type: none"> tourists over-charged for head tax; luggage delays; bad roads; goods and crafts sold are expensive
Chez Ophelia	<ul style="list-style-type: none"> low occupancy; seasonality of tourism; high operating costs; limited air access; insufficient use of e-marketing; lack of focus; insufficient statistics on visitors
Rainforest Shangri-La Resort	<ul style="list-style-type: none"> adapting to local customs; poor customer service awareness among employees; undependable availability of building materials
Screw's Sulphur Spa	<ul style="list-style-type: none"> difficulty in accessing financing; land disputes; poor sense of customer service; Government interests mostly in public sites
Cocoa Cottages	<ul style="list-style-type: none"> limited air access; certification program not very applicable to eco-tourism idea; challenge of having to upgrade continuously
River Rock Café	<ul style="list-style-type: none"> bus drivers/taxi operators unwilling to patronize; little help from Government

The Jungle Bay Resort and Spa and Garraway Hotel are other examples of an eco-cottage resort and small hotel (respectively) that practice sustainability ideals. The Garraway Hotel, among four other hotels on the island, has been identified by Green Globe 21 as deserving of benchmark status (Caribbean Net News, 2004). Among the key performance areas are “energy consumption, solid waste production, social commitment, resource conservation, sustainability policy” (<http://www.caribbeannetnews.com/2004/12/04/becomes.htm>, February 12, 2008). All the other accommodations and facilities display sustainability practices to a lesser degree.

Most establishments experience relative economic success, acknowledging much room for improvement. Full success is limited by those challenges outlined in table 7.3 above. Many of these concerns pertain to the tourist industry in general. Among the major challenges and concerns are limited air access; high cost of fuel; high operating costs; difficulty in accessing financing, and high interest rates at banks; shortage of trained employees in tourist industry; lack of a proper vision for tourism development; poor marketing; insufficient statistics on visitors; ineffective communication between public and private sector; and, insufficient lasting networks between communities and private and public sectors.

Many of the concerns expressed by bus drivers, (as seen in table 7.4 below) taxi operators, and vendors are reflective of an unregulated system, in which control and order are lacking (2008). For instance, the reception of tourists at the Roseau Cruise Ship Berth is said to be disorganized, leading to unfairness and discontent amongst service providers, and reduced quality of the visitor experience (2008).

Table 7.4: Concerns from Bus drivers/Taxi Operators and Vendors

Bus Driver/Taxi Operators
harassment from police and security at the Roseau Bay Front/Cruise Ship Berth disorganized and unfair system at the Roseau Cruise Ship Berth unfair roster system Disagreements/conflicts amongst bus driver/taxi operators poorly regulated system
Vendors
dysfunctional Vendors' Association at Trafalgar meetings held by Trafalgar Village Council infrequent unfair rotation schedule most cruise tourists in a rush; spend less bus drivers carrying cruise tourists in a rush over-charging of tourists by bus drivers for site visits need for more stay-over tourists some tourists complain about high price of goods and crafts Vendors selling the same items (competition) taxi drivers over-charging tourists for site trips

The protest held in January this year by some taxi drivers who felt that preferential treatment was given to other taxi drivers with organized¹⁸ tours further confirmed dissatisfaction among these service providers (Caribbean Net News, 2009).

Although all bus drivers had a general understanding of what Dominica has to offer, and the importance of protecting the environment in general, there was not a clear comprehension of the concept of ecology and environmental protection as these relate to “eco-tourism” and “sustainable tourism.” This suggests that some of the individuals who are in constant contact with visitors do not have a thorough grasp of the broader sustainability requirements of the tourism sector. It is possible that these terms were unfamiliar to the participants; however, even after the terms were explained, the link between ecology and tourism did not seem very apparent. This could be due to illiteracy amongst service providers. The head of the Tourism Program at the State College

¹⁸ Organized tours refer to those tours that are pre-paid before the tourist arrives. In Dominica, tour operators such as Kents Hinterland Adventure Tours (Khatts), Whitchurch, and Fun Sun sell tours to the cruise ships. Tourists arriving by air may also take advantage of organized tour packages. Some accommodations such as Jungle Bay and 3-River Gorge also offer tours to their guests (Williams, 2008; Esprit, 2008)

identified illiteracy amongst taxi operators as a serious challenge to effective training of service providers (2008). As well, many service providers have not grasped the importance of providing a good service. There seems to be more concern for making money (2008).

Two of the major challenges expressed by a sizeable majority of public as well as private sector participants that are directly related to tourism include poor infrastructure and inadequate superstructure. Infrastructure refers mainly to the air and sea ports, the road network and social services and facilities, while superstructure refers to accommodations. The problem with superstructure is the insufficient number and quality of rooms (2008). Mrs. James, head of marketing at the Discover Dominica Authority says that out of a total of 900 rooms, only 350 are market ready (2008). This may be one of the factors contributing to the high vacancy rates suffered by several of the facilities reviewed. Difficulty in air access, which was another major challenge identified by the majority of interviewees, (2008) may be another major contributory factor. A former deputy director of tourism stated that some improvements are being made to the major airport, while there has been a general consensus within the public sector for an international airport (after 20 years of serious consideration of possible sites) (2008).

This sub section has revealed that although the issue of carrying capacity is being actively addressed, there is need to better understand the natural and built system, while monitoring visitor numbers, in order to determine the level of threat to carrying capacity. The efforts by the Fisheries, Forestry, and Environmental Health Departments as well as constraints to these efforts are highlighted in chapter 6. Organizations such as the European Union provide needed financial resources but generally, implementation, monitoring, and evaluation of projects and programmes being funded require much improvement. There is a need to develop ways of determining the direct impact of projects and programmes such as the Eco-tourism Development Programme. The unpredictability of EU funding is a major factor negatively affecting the ability to effectively implement, monitor, and evaluate. There is also a need to improve efficiency within the public sector so that it does not hinder the release of such funds.

The tourist industry in Dominica would also benefit from an improvement in infrastructure. Before building of an international airport, there must be consideration of operating costs for such an undertaking and whether there will be sufficient visitors to help meet these costs.

The marketing and promotion strategy for Dominica needs to be more reflective of a need to attract tourists most interested in the type of tourism being offered. Although the head of marketing at the Discover Dominica Authority described the marketing strategy as “niche marketing,” two interviewees expressed the need for more attention to be paid to markets within Europe that are more representative of ecological consciousness, as opposed to the traditional US market.

Owners of private accommodation and other tourist facilities have, to varying degrees, adopted sustainability practices in their businesses; however, some may be restricted by size, financial constraints, and a lack of technical know-how. There is also evidence that some service providers have not related eco-tourism to ecology, providing an opportunity for a more ecology-centred approach to tourism education and training, as well as more public awareness campaigns to raise awareness about this very significant link.

7.1.2 Livelihood Sufficiency and Opportunity

The recent community tourism thrust initiative under the Eco-Tourism Development Programme (ETDP) encourages the management of tourism resources from within the community and the practice of green business (Skerrit, 2007:29; Esprit, 2008). Approximately EC\$1.4 million in funding was set aside for the development of community projects around the island (Ministry of Tourism, Legal Affairs, & Civil Aviation, 2006b:1). The Waitukubuli National Trail Project, not associated with the ETDP programme but mostly funded by the EU, started in 2007. This is one approach to engaging communities, so they can take advantage of business opportunities. The Head of the Waitukubuli National Trail Project states that communities are being encouraged to engage in such activities as upgrading of their properties; holding cultural activities and

events; and selling local goods (2008). One of the main objectives of the tourism Master Plan is to present communities with opportunities to take advantage of business prospects created by tourism. For example, the National Trail Project (N.T.P) is a hiking track intended to span the island from north to south (2008). (See Appendix A for a map of the N.T.P). However, there is some evidence that communities may not be prepared sufficiently to take full advantage of such opportunities; that communities are not benefiting from government initiated projects; and that community members are not demonstrating much interest in exercising more control over natural resources. The Local Area Management Authority (LAMA) which manages the Soufriere Scotts Head Marine Reserve (SSMR) in the south of the island charges community members with the task of managing their resources, but there has been the problem of people's unwillingness to take full responsibility and advantage of this empowerment opportunity (Magloire, 2008).

A considerable majority of public and private sector interviewees reported that potential small entrepreneurs lack the financial resources and that the terms of financing at banks are discouraging to the small entrepreneur (2008). "Eco-tourism perception is wrong...it is not for poor people," says Mrs. Pestaina, owner of the Garraway Hotel. The eco-tourism perception she is referring to here is the Government's understanding of Dominica's tourism and how it should be developed. She also notes that "people don't have the financial resources to refurbish...to upgrade their properties...or even to train people" (2008), leading to a lack of professionalism in the industry. Also, there is decreasing land ownership by locals. This is a vital resource being taken away from citizens for development, resulting in land scarcity. As a result, land prices are expected to increase in the future (2008).

The site pass fees or user fees charged at some sites are intended to benefit the communities where these sites are located, but the majority of private sector interviewees believe that an insufficient portion of the tourist dollar remains in or is returned to the communities (2008). Mr. Bobby Fredrick, Head of the Trafalgar Village Council argues that the communities should be given a bigger portion from the US\$5 collected at the Trafalgar Falls reception facility and that these funds were not being spread throughout

surrounding communities (2008). He believes that 10-15% of those fees should be allocated to the community. It was further expressed by a supervisor at the Trafalgar Falls facility, that communities are disadvantaged by the fact that no user fees are required at some sites such as Titou Gorge (2008).

The close link between agriculture and tourism and opportunities for enhancing both sectors through their union has been recognized by many government officials and private sector individuals (Maynard, 2008; .M. Bellot, 2008; Martin, 2008). There have been three years of monthly discussions between the Ministry of Tourism and the Ministry of Agriculture about the development of agro-tourism. The Permanent Secretary in the Ministry of Agriculture confirmed the existence a draft of a strategic plan for agro-tourism development, which would involve the development of agricultural products; farm-based agro-tourism; health and wellness tourism; and, culinary tourism (Bellot, 2008). The Ministry is now looking at developing an agricultural policy that will address environmental sustainability issues. One of the major roles of the Agriculture department is to increase production of fresh produce partly to serve the tourist market. There are livestock and fish programs in place for farmers and investments have been made in programs such as greenhouse development (2008).

A Young Farmers Programme was started by the Government in 2005, in an effort to increase the number of young people in the farming sector, which is dominated by farmers with an average age of 57 (Government Information Service, 2006). About 150 young people were attracted to this programme since its inception. They are involved in “livestock production, greenhouse, vegetable production, poultry and egg production, herbal remedies, commercial wildlife farming, goat rearing, guinea pigs and rabbit rearing, pork production, banana production and ripening, flowers and sea moss” (http://www.da-academy.org/gis_features.html, March 5, 2009).

Such initiatives offer support for primary industries; thereby, allowing for stability and resilience within the economy. A stable, properly functioning primary sector is in a better condition to support meaningful links and connections with tourism. Also, it ensures that

traditional livelihoods are continued and basic needs met, in the event of tourism losses. Again, there are positive trends towards the involvement of communities; however, Government intentions are not being fully realized in that respect because of factors that prevent people from taking full advantage of the opportunities presented and the failure to invest sufficient revenue from site user fees in the communities. There is great potential for and benefits to be derived from forming and maintaining connections between communities and the private and public sectors in order to build networks of trust and reciprocity. There are also benefits from identifying more areas around the island where local area management authorities can be developed to manage the use of resources by traditional and recreational users.

7.1.3 Intragenerational Equity

According to a 2005 World Bank Report, the percentage of people living in poverty in Dominica dropped from 39% in 2002 to 33% in 2005. Although this percentage is quite high, it is not the worst in the Eastern Caribbean. In St. Vincent and the Grenadines, 38% of the population is living in poverty (Caribbean Net News, 2006). A 2002 poverty assessment report for Dominica has judged this poverty to be “predominantly income- and employment-based, as opposed to rooted in lack of access to broad social services” (World Bank, 2005:15). Poverty is being addressed by the present administration through two main pro-poor mechanisms: The Basic Needs Trust Fund, funded by the Caribbean Development Bank, CIDA, and the Government of Dominica, and the Social Protection Programme, funded by the EU. These programmes are geared towards the provision of basic economic and social infrastructure and employment (Caribbean Net News, 2006).

Many persons have taken advantage of the EU-funded Enterprise Development Facility, from which some have started their own businesses. Support is also being given to the banana industry. The Government is offering more young persons scholarships to study at overseas universities, in an effort to realize its goal of one university graduate per household by 2015. Funding was obtained from the Venezuelan Government for housing development in low-income areas. There is also the Squatter Regularization Programme

which allows families to purchase land at \$1 per square foot (Caribbean Net News, 2006).

Within the tourism sector, there is a great disparity between the number of cruise ship visitors at the Cabrits cruise ship berth in the north and the Roseau cruise ship berth, as noted by a National Parks Warden (2008). A greater number of cruise ships dock at the Roseau berth, because Roseau is closer to some of the more popular sites such as Trafalgar Falls, Emerald Pool, Middleham Falls and the Botanical Gardens. Although Portsmouth in the north offers the Cabrits National Park, Indian River and the Syndicate Nature Trail, these sites have limited carrying capacity (Williams, 2008). This implies that the number of tourists visiting the island is not spread equally among the various sites. Therefore, varying degrees of opportunity are created for the communities where these sites are located.

The Tourism Regulations and Standards Act gives Discover Dominica authority to set standards in the sector. Every service provider must meet certain minimum standards and obtain certification and licences (Esprit, 2008) under the Nature Island Standards of Excellence Program. As previously mentioned, terms of financing are not welcoming to small entrepreneurs, who are already struggling with high operating costs. As a result, many accommodation providers cannot afford to undertake the kinds of upgrades required by the tourism standards, as noted by one hotelier (2008).

Precaution must be taken in regards to the implementation of such a system which has a great potential of widening the gap between the “haves” and “have-nots.” Efforts to address carrying capacity issues mentioned above are supposed to address the issue of disproportionate numbers of visitors to the various sites as well; however, these have not been too successful, says one hotelier (2008).

7.1.4 Intergenerational Equity

Investments and developments in education aid in ensuring the continuation of the tourist industry from one generation to the next. In 2002, a tourism/hospitality program was

started at the Dominica State College, as a response to the need for trained personnel in the industry. Graduates receive an Associate Degree in Tourism Studies. Under the Department of Continuing Education, vendors, tour guides, taxi operators, and tour operators are also trained at the State College (Julien, 2008). The Ministry of Tourism is having discussions with the Ministry of Education to incorporate tourism as part of the curriculum for primary and secondary schools. This training program for service providers, which awards them certification needs to take into more consideration the illiteracy problem amongst bus drivers (and possibly amongst other service providers), so that it is a more effective system.

As detailed in the previous chapter, climate change poses a serious threat to ecosystem integrity by placing pressure on vulnerable coral and sea grass species (Institute for Tropical and Marine Environment, 2008b). Destructive fishing techniques have resulted in the depletion of many fish species and the ballast from ships and boats has been one of the major causes of foreign sea grass species invasion. Although there have been efforts to address these issues, through regulatory mechanisms and monitoring some actions (such as encouraging fishing away from the coast to avoid the siltation problem and safety precautions during the hurricane season) have been reactionary. Climate change is a broad issue that cannot be effectively addressed at the local scale. This necessitates the importance of taking as much action as possible at the local level to build adaptability and resilience. Dominica has not fully met its requirements under the Marpol 73/78 convention for the handling of waste from ships. This may lead to a worsening of the invasive species threat. Indiscriminate dumping and litter add to the pollution problem.

In reference to the Soufrière Scotts Head Marine Reserve (SSMR), the plans to erect Fish Attracting Devices at locations outside the reserve is suggestive of two things: (i) there have been signs of pressure on the resources within the reserve and (ii) this is a precautionary measure taken in anticipation of an increase in the number of users. Nevertheless, the potential impact of these devices must be closely monitored, to avoid the relocation of negative impacts on the marine environment.

The fact that there is no other area in Dominica's fisheries habitat, besides the SSMR, where the sharing of resources between traditional and recreational users is legislated suggests a threat to traditional users for the continued use of the resource. As Mr. Nigel Lawrence, manager of the SSMR stated, "fishermen stand to be excluded or driven out of any locality in the Exclusive Economic Zone (EEZ) of Dominica for diving or any other purpose" (2009). A similar issue of concern is that of the increasing incidence of land being bought by foreigners (Esprit, 2008), giving local people less control over the kinds of developments that are undertaken.

7.1.5 Resource Maintenance and Efficiency

Although approximately 50% of the island's energy needs are met by hydropower (Lees, 2004), there is still a great dependence on fossil fuels, which is expensive (2008). The latter is noted by private as well as public sector interviewees. Hydro power and diesel fuel are used in combination to generate electricity, because hydro by itself cannot generate enough power; therefore, fuel is used to compensate. All transportation fuels are fossil based and imported. The Government has been considering the development of alternative forms of energy, such as solar and geothermal. The Environmental Coordinating Unit (ECU) has facilitated the distribution of low energy bulbs and public awareness activities; however, this has not influenced meaningful behavioural changes. A number of accommodations have energy saving practices and use energy saving devices; however, with the exception of Exotica Cottage Resort (and its small scale solar water heating) renewable energy has been underdeveloped by those private businesses consulted.

There is great potential to develop forms of energy such as hydro and geothermal; however, the Dominica Electricity Company (DOMLEC), a private company, which is interested in strengthening "its capacities of production with diesel-generated power plants" (Institut de l'énergie et de l'environnement de la Francophonie—IEPF, 2008:9), has a monopoly on electricity services on the island. There is a lack of understanding about renewable energies and a related incompetence amongst heads of departments. The very

unclear energy policy lacks a proper vision for the development of renewable energies (IEPF, 2008).

There is no recycling plant on the island, but the Solid Waste Corporation aims to reduce the amount of waste entering the Fond Colé landfill by 20% in the next 3 years (Scotland, 2008) by exporting recyclables and other substances. For example, there is the opportunity to sell used oil to a company called Marpol in Trinidad, where it will be refined and resold. Materials such as batteries, plastics, cardboard, and scrap metal can be exported as well (2008). This presents a good opportunity to make financial gains while cleaning the environment, only if the costs of shipping are lower than the revenues for sale of recyclables. However, if the ultimate goal is to reduce waste, there should also be continuous island wide awareness campaigns to inform people about the need and importance of waste reduction and to prepare them for this eventual occurrence. As well, plans to export recyclables and other waste must be supported by an enabling framework to ensure proper and efficient collection and management of such waste.

Prior to 2007, the amount of waste entering the landfill was not measured. The year 2007 was the first that a record was ever taken. This was confirmed as 8.1 million kg of waste. There are plans to develop a biomedical waste system, whereby all biomedical waste from all medical institutions on the island, such as hospitals, pharmacies and private labs will be treated in a gasifier located at the Princess Margaret Hospital. Presently, the gasifier is being used, but does not receive waste from the entire island. Mr. Scotland says that this gasifier has the capacity to treat all biomedical waste produced on the island (2008).

Efforts at recycling and/or composting are done privately by business owners and citizens. Table 7.2 lists some accommodations where separation of waste and recycling is practiced. The Jungle Resort and Spa and Cocoa Cottages do composting, while the Exotica Cottage Resort, D'Auchamps Cottages and Rainforest Shangri-La Resort make use of biodegradable waste. The Papillote Wilderness Retreat and Cocoa Cottages

practice recycling. One hotelier argues that there is no motivation to invest in recycling, as there is no recycling plant on the island.

7.1.6 Socio-ecological Civility and Governance

Although most Government perspectives imply constant involvement of communities and private sector in tourism projects and the Tourism Masterplan highlights a community development policy, most opinions from the community and individuals from the private sector reveal that communities are not sufficiently involved and consulted in decision making and that the relationship between the public and private sector is a very superficial one in which there is a lack of trust (2008). Mr. Arthurton Martin, hotelier and agronomist, stated, "People in public sector... have no investment in tourism...there must be deep partnership between public and private sector" (2008). The owner of the Garraway Hotel mentioned the need for more networks to be formed and sustained between communities and private and public sector (2008). She said, "These people are isolated...they have no linkages" (2008). She was referring to the people in charge of community tourism projects. The tourism workshop held during Caribbean tourism month last year was an attempt to form partnerships between communities and private sector. However, many of the people who manage the community tourism project (funded under the EU eco-tourism programme), have no technical, managing, marketing, and product enhancement skills (2008). Mr. Martin suggested a that community development officers need to be converted into extension officers, who could assist people on how to take full advantage of opportunities being presented by tourism.

Interestingly, none of the bus drivers or vendors spoken to had any substantial knowledge about the recent 2010 Tourism Policy and Masterplan. This was further corroborated by a government official who noted that there was no systematic link between the central government and the 41 local authorities during development of the eco-tourism policy and masterplan. The links made were based more on personal relations than on a systematic communications effort. This implies that active and effective inclusion of communities may not have been a priority in development of the Master Plan

7.1.7 Precaution and Adaptation

In theory, vulnerability to natural hazards could be reduced by relocating coastal communities, but this may not be a realistic option. Firstly, the marine environment provides a way of life for many of the inhabitants of fishing communities along the coast. Secondly, the interior's topography is too steep to accommodate settlement. However, there have been efforts to reduce social and economic vulnerability.

Dominica and other members of the Organization of Eastern Caribbean States (OECS) have selected a National Disaster Coordinator (NDC) and combined prevention and mitigation with recovery and relief, in order to increase resilience in the face of natural disasters (WB, 2001b). The Office of Disaster Management (DMO or ODM) is the department responsible for co-ordinating all disaster management efforts in Dominica, on behalf of the government—including before, during, and after management. It is responsible for all aspects of preparation, alert, mitigation/prevention, response, recovery, and rehabilitation. A National Emergency Planning Organization (NEPO) has been created under the authority of the ODM. As a response to provisions under the Emergency Powers Act of 1987, NEPO has prepared quite an impressive National Disaster Plan (NDP), which is centred around a management framework characterized by a system of prevention, mitigation, preparedness, response, recovery, and rehabilitation. (See Appendix H for further information on disaster management in Dominica).

On a more day- to- day basis, the government communicates with the division of local government departments and the Dominica Red Cross. The Red Cross plays a crucial role before, during, and after a disaster. It serves as one of the links between the government and communities, and has aided in projects with 32 communities. It is involved in risk management projects which include training in community risk mapping, vulnerability and capacity assessment, relief distribution, shelter management, damage and needs analysis, preparation of community disaster plans and household plans, training of home retrofitting and implementing mitigation micro-projects. The aim is to empower communities to identify their risks so that they can take measures to reduce risks as well as to respond and recover from disasters when they occur (Pinard-Byrne, 2009) In order

to achieve that goal, the Red Cross works with various departments including Communications and Works, the ODM, Telecommunications, Health and Social Security, and Education.

Generally, the social organization needed to co-ordinate preparedness, mitigation, recovery, and rehabilitation activities is not functioning at its fullest potential. Communication systems before, during, and after an event, rely heavily on ham radio operators. The first of this type of radio system was used by one man during the 1979 Hurricane David (Fontaine, 2003). A weather radio system has also been developed around the island. The data collected are submitted to the disaster office, the meteorological office, and then to the wider Caribbean (Shillingford, 2009). In that way, the island is able to communicate with the outside world. Provisions are made at the community level, to tend to the most vulnerable—the elderly, disabled, and very young. Sub-committees have been put in place in order to allow for the distribution of aid in an organized and responsible manner. The welfare subcommittee is one such example. However, there is no way of communicating with people in isolated areas before, during, and after a disaster. People are encouraged to evacuate the area if there is a threat (2009).

Many hurricane shelters are not equipped with amenities such as toilets and cooking facilities. There is no reliable food security. For instance, the shelters do not provide food for people. They are expected to carry along their own food supplies, but there is no storage for local foods (NEPO, 1987:2-3). However, an EC\$1 million warehouse is available for supplies such as first aid items and blankets. A utilities building is being constructed to store and maintain small equipment (Shillingford, 2009). Also, although the Princess Margaret Hospital has a disaster plan, it may not be sufficiently ready to respond to a real disaster situation.

Evacuation by sea or air does not seem to be sufficient. The Melville Hall airport is still being improved. It has to be ready to receive C130 planes and other large ones. Aid can be received through the harbour, as long as it is not damaged. The question is: are these ports adequately prepared to allow easy transfer of aid? Mr. Pascal also recognized that

there is no system in place to restore facilities such as water infrastructure. For instance, there are no solar and wind energy initiatives to serve as temporary sources of energy before permanent sources can be restored (Pascal, 2009).

As previously mentioned, the Red Cross plays a vital role in enabling communities to manage their disaster risk. However, there is a shortage of full-time personnel. The organization operates mainly through volunteers. Pascal notes that the civil defence network (combining organizations such as the Boy Scouts and the Red Cross) is not well developed and that it needs to be better organized at the community level (Pascal, 2009). The head of the Dominica Red Cross Society was clear in pointing out that the organization presently receives a small subvention from government but this is altogether inadequate to meet its operating budget. The national Red Cross does not receive financial support from its international counterpart which generally provides technical support and relief assistance in the event of disasters. Support for training programmes and projects is occasionally received from donor sources (Pinard-Byrne, 2009). Therefore, it is forced to raise its own funds to cover operation costs. Increasingly, these funds are becoming scarcer. There is a need for more government assistance. Without the proper functioning of the Red Cross, that link between government and the communities will be seriously severed. Presently, the organization needs more financial support in order to carry out regular simulation exercises, training activities, and other needed activities such as damage and needs assessments. Pascal has noted that simulation exercises are not done regularly in the communities.

The island has come a long way since Hurricane David in terms of building capacity, but there is much room for improvement in the areas of institutional capacity building, governance, social organization, and economic stabilization.

There are some fixed, intrinsic characteristics of the island that naturally increase its vulnerability to disasters. These include its geographical location, population distribution, small size, and topography. Therefore, the most logical and practical approach to reducing vulnerability is not to try and focus and deliberate on those properties, but to

channel all attention towards boosting social and economic viability and resilience. Social and economic weaknesses manifest themselves in various forms. In the case of Dominica, this weakness can be detected in weak governance attributes, a small economy, and fragile social organizations.

Many of the issues highlighted in the systematic approach above are already being addressed by the government, with the help of organizations such as the Caribbean Disaster Emergency Response Agency (CDERA), and the World Bank (WB). The National Emergency Action Plan (NEAP), which the WB has assisted in establishing, speaks to issues of institutional capacity building, strengthening of physical infrastructure, gathering the support of private insurance, and organizing, training, and empowering communities to assume the responsibility of reducing their vulnerability.

These are the reasons why much attention should be given to resilience as an objective of economic revitalization. Diversification in particular is important for building up the country's resilience to shocks. The island must adapt to the changes within the global economy. Bridging economic gaps is an enormous task. It was Ponting who stated that "it was only after European expansion and colonization...that different parts of the world integrated, resulting in a world economic system that held Europe at the dominating position, and other areas...in a subordinate position" (1993, p.194). Countries need to be freed from the historical ties that keep them so heavily dependent on ex-colonial powers, by doing such things as the import bill; thereby, encouraging local businesses and improving the economic and social situation of the island and especially its currently least advantaged residents.

Thus, while all these new initiatives are on the way, the bigger picture must not be forgotten. The country needs to invest in better equipped shelters; development of civil defense and hospital facilities; greater support for organizations such as the Red Cross, more efficient evacuation and transportation systems; and a reliable system to restore basic utilities in times of disaster. The government has used funds from the United States Southern Command in the amount of EC\$ 1.6 million or US\$ 600 000, for the

construction of an Emergency Operation Centre, from which all aspects of a disaster are to be managed (Shillingford, 2009). It is expected to be completed by the end of August this year. Afterwards, this building will have to be equipped with the necessary supplies. However, funding for the latter is uncertain (2009). The country will need more financial assistance. According to Caribbean Net News, the Inter-American Development Bank (IDB) has approved a US\$800 000 grant, which will fund a disaster risk management project for the tourist sector in the Caribbean. The Caribbean Disaster Emergency Response Agency (CDERA), the Caribbean Tourism Organization (CTO), CARICOM Regional Organization for Standards and Quality, and UWI are all expected to combine their expertise and regional constituencies for the implementation of this project (French, 2007). It is equally important to remember that vulnerability reduction is not the responsibility of government alone, but can also be developed through strong social ties.

As previously mentioned, the Fisheries Division encourages safety precautions for adaptation to climate change (Magloire, 2008). However there is acknowledgement of the need for improvement. For instance, how should homes, other physical structures and infrastructure such as bridges be built? There is also the recognition of the need for more protection for crops during and after hurricanes.

The private establishments consulted have taken into consideration the element of surprise and uncertainty into their business operations. Table 7.5 below lists particular undertakings by private business owners. As with other sustainability practices, there are varying degrees of effort into planning in an environment of uncertainty and complexity.

Table 7.5: Private Establishments and Their Attempts at Addressing Surprise and Uncertainty

Accommodations/Private Business	Addressing Surprise and Uncertainty
Garraway Hotel	disaster plan; work with fire department for the training of staff
Exotica Cottage Resort	disaster/evacuation plan; on-site hydrant and firefighting system; all cottages at ground level; employees live nearby; provide transportation for staff during emergencies
Jungle Bay Resort & Spa	hurricane management plan; earthquake plan
Papillote Wilderness Retreat	generator for electricity; establishment closed from September-October to renovate (during hurricane months)
D'Auchamps Cottages	beyond manager's control
Tia's Bamboo Cottages	hurricane shelter
Chez Ophelia	hurricane shelter; clearing of trees that may be dangerous during hurricanes; clearing of drains before hurricane approaches
Rainforest Shangri-La Resort	disaster/evacuation plan; structures built are hurricane proof; generator for electricity
Screw's Sulphur Spa	working on retaining wall to protect sulphur pools from effects from hurricanes; plant trees to hold up soil
Cocoa Cottages	6-seat aircraft to fly out guests before disaster strikes, if necessary
River Rock Café	N/A

7.1.8 Immediate and Long-term Integration

Immediate and long-term integration depends on the extent to which positive gains for each of the mentioned sustainability principles have been pursued and achieved, the extent to which the various sectors have been able to collaborate and seek and mutually reinforcing benefits, and the extent to which the participants have been able to identify and avoid or defend trade-offs that maximize gains and avoid significant lasting damage to the integrity of socio-ecological systems and prospects for meeting the other requirements for progress towards sustainability. As previously explained, each sector

has its problems and challenges. A local environmentalist noted a “lack of engagement of the other sectors (such as transportation and health) of the economy with tourism” (2008). The need for more collaboration amongst various sectors in general was also expressed by both public and private sector informants (2008). One hotelier also pointed to evidence of short-term planning by the Ministry of Tourism, pointing especially to the reduced quality in the visitor experience because of the disorganized system at the Roseau Cruise Ship Berth.

Pattullo rightly mentions the need for Dominica to “not be deflected by short-term gain or superficially attractive schemes which deliver little” (2005:160). The country’s economic situation as a Small Island Developing State makes it difficult to avoid schemes that promise short-term economic gains; however, if Dominica has to improve its economic competitiveness in the future, it must not compromise its authenticity as a true eco-tourist destination.

As discussed, all of the elements within the eco-tourism sustainability framework outlined in chapter 6 have only be partially realized, with varying degrees of improvement needed. Table 7.6 below summarizes the analysis from this chapter. The roman numerals I, II, and III are interpreted as follows: I=Much Improvement Needed II= Some Improvement Needed III= Little Improvement Needed

Table 7.6: Dominica’s Eco-tourism Sustainability Framework Tested

Major categories of sustainability issues and associated considerations, as identified in the Dominica Eco-tourism Sustainability Framework	Partially Realized Ratings		
	I	II	III
1. Socio-ecological system integrity			
supports a clear policy vision for tourism development that values and recognizes benefits of socio-ecological integrity		x	
exercises a strong commitment to sustainability, unwavering by political bribes or favours, unless the alternative poses a greater threat to sustainability	x		
provides sufficient financial, physical, and human resources to the sectors responsible for the execution of this vision	x		
ensures quality standards and requirements do not undermine social and environmental priorities		x	
focuses less on increasing the number of cruise ship visitors and more on more ecology conscious market		x	
supports environmental protection (to include the marine and freshwater habitats and forest resources) and ensures that the relationship between the social and biophysical is one that enhances the wellbeing of both		x	
establishes environmental protection and conservation firmly in legislation and other encouragements for practical application (enforcing legislation such as the Litter Act and the Marpol 73/78 Convention)	x		
ensures consideration of the broad range of Valued Ecosystem Components (VECs) in tourism planning, with all stakeholders deciding (through consensus building) what is valued	x		
creates opportunities for the return of Dominican graduates, who possess needed skills in area of natural resource management		x	
encourages and facilitates frequent public awareness campaigns to raise consciousness of environmental protection, conservation, responsibility		x	

Major categories of sustainability issues and associated considerations, as identified in the Dominica Eco-tourism Sustainability Framework	Partially Realized Ratings		
	I	II	III
encourages education and training to include a broad understanding of ecology and environmental issues, and other training in tourism-specific areas such as hospitality and quality customer care		x	
raises and maintains quality standards within the tourist industry (in areas such as accommodation, physical infrastructure, and skills building) while respecting sustainability principles improves air access develops effective marketing and promotion	x	x x	
2. Livelihood Sufficiency and Opportunity			
ensures opportunities are created for community members to improve their living standards, with special consideration for poorer categories of the population and that such initiatives as the Nature Island Standards of Excellence do not exclude this sector of society because of the nature of its requirements		x	
finds and keeps adequate and healthy means of making a living		x	
encourages the development of more local area management authorities like the one managing the Soufrière Scotts Head Marine Reserve		x	
3. Intragenerational Equity			
reduces the gap between rich and poor		x	
strengthens support systems that seek to tackle the inequities (particularly in discrimination due to social class, economic rank, and political and/or religious affiliation)		x	
favours tourism options that provide opportunities for all regardless of social class, economic rank, political or religious affiliation		x	
4. Intergenerational Equity			

Major categories of sustainability issues and associated considerations, as identified in the Dominica Eco-tourism Sustainability Framework	Partially Realized Ratings		
	I	II	III
protects the foundations for the wellbeing of future generations in terms of socio-ecological integrity and economic viability of all tourism ventures by requiring attention to cumulative effects, denying approvals for new activities that threaten long term damage (adopting the trade off rules about not displacing significant adverse effects to future generations)	x		
5. Resource Maintenance and Efficiency			
supports and is part of a larger effort to use renewable forms of energy such as hydro and geothermal, and encourage investment in projects that will support development or and conversion to these forms of energy	x		
supports a larger effort to reduce, reuse and recycle, thereby reducing pollution and cutting down on waste	x		
ensures that the primary industries of agriculture and fisheries are not sacrificed in the process of tourism development		x	
recognizes and realizes ways by which the relationship between tourism and these primary industries can be further tightened and enhanced for the benefit of all	x		
6. Socio-ecological Civility and Governance			
ensures effective inclusion of relevant interest groups in planning and decision making	x		
makes special efforts to engage community members, who will be affected directly by tourism development projects		x	
gives serious consideration to and respect for diverse opinions		x	
fosters community groups that are truly representative of the diversity within areas, and can effectively exercise their power by generating ideas and taking decisions and actions to chart their own futures		x	

Major categories of sustainability issues and associated considerations, as identified in the Dominica Eco-tourism Sustainability Framework	Partially Realized Ratings		
	I	II	III
encourages meaningful consideration of ideas and concerns from communities and other concerned parties by central government	X		
encourages management of resources by communities, while educating the public about the importance of local ownership		X	
provides support (financial, physical, educational, and skills-wise) to community groups for the proper management of resources and programmes	X		
encourages innovation among community groups		X	
7. Precaution and Adaptation			
seeks to understand the human and biophysical system as a whole, consisting of interdependent parts	X		
recognizes the complexity of socio-ecological systems and taking measures to increase resilience to disturbances		X	
seeks to enhance existing positives, while adapting to unfavourable conditions		X	
ensures monitoring of all obvious and potential elements of surprise, both natural (example: hurricanes and volcanic eruptions) and human (example: economic shocks)	X		
ensures constant monitoring and evaluation of all eco-tourism development projects	X		
builds economic diversity, ensuring that the systems in place are flexible enough to adjust		X	
ensures that all structures built cater for natural hazard shocks, such as hurricanes	X		
makes active efforts to mitigate adverse impacts of climate change, example, damage by frequent and intense hurricanes, and coral damage	X		
establishes Government ministries and processes that are flexible enough to work together to address inter-disciplinary issues	X		

Major categories of sustainability issues and associated considerations, as identified in the Dominica Eco-tourism Sustainability Framework	Partially Realized Ratings		
	I	II	III
avoids taking development risks for the sake of convenience or short term gains		X	
considers a broad range of environmental factors in tourism planning		X	
develops affordable ways of assessing alternatives and cumulative impacts of tourism undertakings and environment thresholds (by monitoring significance through assessment of factors such as carrying capacity), and acknowledging physical and time boundaries in the assessment process	X		
allows for strategic level plans, policies and programmes to be properly implemented, monitored, and reviewed regularly	X		
builds and strengthens social capital to aid in disaster management		X	
8. Immediate and Longterm Integration			
Within all tourism activities and developments, seeking to address all sustainability requirements, as a set of interdependent parts, each one enhancing and complementing the other	X		

As illustrated above, there is still much needed improvement in the areas of waste management, resource maintenance, and disaster management, which affect tourism. The vision for tourism development must incorporate consideration of longterm impacts of projects, plans and programmes on socio-ecological integrity. They should not serve as a barrier to sustainability objectives. As part of that vision, marketing and promotion should be motivated and directed by sustainability-centred aspirations. Greater involvement of communities in tourism planning will aid in determining valued ecosystem components to be protected, conserved, and/or enhanced. The financial viability of all projects (from air access to physical infrastructure, to superstructure improvements) must also be properly examined against environmental impacts in consideration of various alternatives for development, through the trade-off process outlined in chapter 3.

CHAPTER 8: CONCLUSIONS & RECOMMENDATIONS

This chapter reports on the results from applying the specified eco-tourism sustainability framework created to guide evaluation and development of sustainable eco-tourism initiatives in Dominica. The framework was developed through consideration of key sustainability principles from the literature and particular concerns within the Dominican context. In light of the findings, this chapter revisits the research questions and considers the implications for the future development of tourism in Dominica and for further investigations into this area of research. Conclusions are also made about the theoretical and applied contributions of developing and applying the eco-tourism sustainability framework principles.

8.1 RESEARCH QUESTIONS REVISITED

What is eco-tourism and how should it be considered within the Dominican context?

Eco-tourism is defined in this thesis as tourism which demands a high level of human responsibility involving “active contribution towards conservation and/or the improvement of host community welfare” (Stone, 2002:16). As discussed in chapters 6 and 7 and summarized in table 7.6, the general trend in Dominica points to a gradual movement towards this type of tourism; however, there are major constraints to full realization of the proper integration of economic gains with environmental protection, social wellbeing, and cultural sustainability. Therefore, eco-tourism within the Dominican context should be considered as a desirable ideal to work towards.

What are the current and potential key factors affecting tourism in Dominica that need to be examined?

The factors affecting the current and potential development of tourism in Dominica were identified and specified gradually (during the study period) through review of secondary sources, discussions with key informants, and participant observations. The factors include contextual features such as geophysical settings, matters of political policy and regulatory requirements, and more dynamic influences such as public attitudes and behaviours, and social capital. Through examination of these factors, it was discovered that each has both negative and positive influences on eco-tourism development. Future

development of eco-tourism would require action geared towards minimizing all negative influences and further enhancing the positives.

Can an eco-tourism sustainability framework be created for Dominica using the GSPs as a generic guide?

The GSPs were useful in identifying the major components of the eco-tourism sustainability framework. Their generic nature made them suited to specific application—in this case, eco-tourism sustainability. The Gibson Principles' broad criteria allowed for the incorporation of other considerations from the conceptual framework and the Dominican context. Two main issues are not sufficiently explored explicitly by the Gibson Principles, but contribute to sustainability within the Dominican setting. The first is the potential role of social capital in building resilience, especially to natural hazards, which not only affects tourism, but the broader socio-economic context within which it exists. The relationships between people can be further developed to improve the adaptability of communities to natural hazards. The second relates to culture and social habits, customs, habits, and attitudes, which influence the visitor experience to a large degree. However, the fact that the framework was not based solely on the Gibson sustainability requirements provided an opportunity to incorporate these factors into the framework, from theories outlined in the conceptual framework and from island realities. Overall, the GSPs serve as a useful generic guide for eco-tourism sustainability development.

How applicable is the Dominican eco-tourism sustainability framework?

The eco-tourism sustainability framework developed here offers guidance not only for the future development of tourism in Dominica, but also for the creation and maintenance of a broader environment that supports sustainability. The aim is to ensure that benefits are maximized within the tourism industry and the broader socio-ecological context. It also provides the opportunity for mutually enhancing networks to be created between the two. The framework presents a challenge to aspiring eco-tourist destinations like Dominica. It highlights key requirements of an ideal-type eco-tourism development strategy by acknowledging the inter-connections between and within socio-ecological

systems; thereby, distinguishing between sustainable and unsustainable approaches. However, the Dominican case has revealed that all efforts are limited by the extent of knowledge about complex socio-ecological systems and the ability to implement this approach. Uncertainty is an inherent characteristic of complex systems, which is highlighted within the framework and for which a number of precaution and adaptation management approaches are suggested. Limited financial and other resources hinder the island's ability to better understand this complexity and to take required action.

The extent to which the framework could be applied to other destinations would depend upon similar issues affecting its application to Dominica. These may include the level of capacity to implement suggested requirements, which may be influenced by the socio-ecological context, economic situation, and political structure. Although many of the issues affecting Dominica's potential to develop eco-tourism are common to other Small Island Developing States (SIDS), each locality has its uniqueness and presents a different set of opportunities and capacities. It would be valuable to carry out a similar exercise in other destinations, so that the frameworks created are more reflective of the context.

The uniqueness of this case study of Dominica is an important factor affecting the applicability of the framework elsewhere. It is unlike other Caribbean destinations in its authenticity and extent of natural resources and factors such as difficult air access, which maintain its small scale tourism. These are major factors in the potential effectiveness of these principles on the island. Although the framework is workable elsewhere, the specific conclusions are specific to Dominica.

This thesis acknowledges that the above limitations negatively affect the applicability of the eco-tourism framework beyond Dominica. Despite these limitations, it presents a long-term vision for eco-tourism sustainability and a desired path towards more positive contributions to sustainability for Dominica, the wider Caribbean and the world.

8.2 RECOMMENDATIONS RELATED TO THE ECO-TOURISM SUSTAINABILITY FRAMEWORK SPECIFIED FOR DOMINICA

Analysis of the findings reveals that an eco-tourism development implementation plan for Dominica needs to be part of a broader national stewardship plan, which would offer guidance for action in the areas of tourism, agriculture, building of social capital, and environmental education. Special attention must be given to proper solid waste management planning, disaster management planning, environmental protection, conservation and responsibility, and a literacy training programme for tourism service providers who may be illiterate. These main issues are highlighted within the following discussion.

Planning for each major component of the national stewardship plan should occur through a process that allows for collaboration among the other components. In reference to the tourism component, the tourism 2010 policy needs to be revised, in order to consider and include the key sustainability principles highlighted in the framework. This review process must involve meaningful engagement of communities through community meetings and focus groups. Representatives from the Government, private sector, and non-government community should be present at all forums, in order to ensure consideration of varying perspectives and formation of networks. Within such gatherings, there should be particular exploration of how cruise tourism may be made more sustainable and how the certification program for service providers can be made more appropriate to sustainable eco-tourism on the island.

Investments in agriculture and agro-tourism should be continued, maintained, and encouraged by organizing events such as exhibitions or agriculture expos that display produce and other value-added goods made from primary produce. Various prizes can be awarded based on categories such as best product, most creative, and most authentic. This would encourage innovation and heighten awareness and importance of the agricultural sector, while initiating new local business development. One of the goals would be to attract investors and to facilitate the creation of networks that allow small business men to conceptualize their business plans.

Building of social capital ought to be part of a larger effort in becoming more pre-emptive, as opposed to reactive in the approach to disaster management. The relationships between people may be further enhanced by holding more frequent social events that bring people together in a positive environment. This may include events such as sports and cultural activities. A group of individuals should be identified within each community, who would be trained in disaster preparedness and response techniques. Each group will have at least two leaders who will communicate with leaders of other community groups and will mobilize other members to take action before, during, and after disasters. This will enhance resilience to disasters.

Environmental education should be started at the primary school level, in order to facilitate a change in mentality about environmental issues. The community day of service, which is now held once a year during the independence season should be held at least three times a year, in order to foster environmental responsibility. The following section provides further details for implementation of the framework.

Socio-Ecological System Integrity

The absence of a comprehensive environmental sustainability law makes progress towards such advanced sustainability approaches seem like wishful thinking. This law must offer guidance to major environmental sectors such as the Solid Waste Management, Forestry, Fisheries, and Environmental Health. Indiscriminate littering and dumping may be effectively addressed by enforcing and implementing the Litter Act and agreements such as the Marpol 73/78 Convention. The Government must be wary of funding arrangements that conflict with and threaten to undermine their commitment to sustainability.

Livelihood Sufficiency and Opportunity

In order to take full advantage of opportunities presented by tourism, financing must become more readily available and accessible to those interested. Perhaps a system of micro credit can be developed by non-government organizations to assist small business

entrepreneurs. This is one way in which individuals can become less dependent on the Government. People may find it more profitable to invest in bed and breakfast businesses which would attract tourists looking for a more authentic community experience.

Intragenerational Equity

In light of the disparity in revenue derived from the various natural sites, there is a need not only for more sites with entrance fees, but for a more equal distribution of profits made among communities. This can be applied to the Roseau Valley, where the profits from the Trafalgar Falls should be distributed throughout the neighbouring communities of Morne Prosper, Wotten Waven, and Laudat. Interest in the less popular sites may be increased by introducing more cultural entertainment at those sites. This would contribute to intragenerational equity by ensuring that profits derived are distributed more evenly. More generally, it seems likely that careful expansion of small scale eco-tourism is more likely to deliver broadly distributed benefits than expansion of reliance on cruise ship visitors.

Intergenerational Equity

The Government is considering the inclusion of tourism into primary and secondary school curricula. This needs to be seriously implemented. Tourism education in schools should include knowledge of ecology and the importance of environmental protection, so that the younger generations develop a well-informed environmental consciousness. The media can also play a role in raising awareness about not only tourism-related but environmental issues in general, as they ought not to be considered separate entities. Education needs to translate into improvement of social habits and attitudes towards the environment. Addressing the adult literacy problem, especially amongst service providers is a necessity.

Trade-off rules must be applied for every proposed tourism undertaking (favouring low risk) in order to avoid long term damage to valued ecological and social qualities.

Resource Maintenance and Efficiency

The Government's plans to export recyclable waste ought to be preceded by a massive waste reduction campaign, in order to sensitize the public to the importance and need for such actions. These efforts should be guided by the thorough and comprehensive waste management plan, grounded in sustainability principle. More frequent clean up campaigns could be taken on by schools and community groups/organizations such as youth groups, scouts, and girl guides.

More effective public awareness campaigns geared towards more energy efficient practices are desirable, while the Government develops a strategy to develop renewable energy development.

Socio-ecological Civility and Governance

There needs to be more meaningful involvement of communities in tourism planning and decision making. Perhaps community development officers can be extension officers, who oversee tourism programmes and report back to central government. The village councils and improvement committees must assert more political clout and leaders of such organizations must commit themselves to involving community members in the planning and organizing of projects and programmes. This can be applied to The Roseau Valley; the engagement of community members by the Village Council is inconsistent. Village councils must offer guidance to smaller community organizations such as vendors associations, which are often dysfunctional. Also, the tourism policy review process should involve active and effective involvement of multiple stakeholders, especially representatives from the various communities.

Precaution and Adaptation

The vulnerability of the island to natural disasters necessitates a need for resilience and response capacity development. There is a serious need to review more regularly the tourism policy and other policies that impact tourism. Constant revision and modification based on community realities is of vital importance, when operating within a complex system. It is necessary to devise a way of assessing tourism developments, (such as those

funded by the EU and other funding organizations) in order to determine progress towards sustainability, by identifying baseline data with which comparisons can be made. The diversity within the agriculture sector offers a degree of resilience and must be maintained by continued investment and constant monitoring with the sector.

The Tourism Policy highlights the intention to address disaster management:

Recognizing the annual potential for weather-related tourism sector disasters, Dominica will develop a disaster preparedness program for its tourism sector that it can apply when necessary to reduce the scope and the extent of negative impacts from such disasters. This will be developed in collaboration with emergency preparedness authorities. (Ministry of Tourism and National Development Corporation, 2005:30).

This effort should involve combining hazards, emergency planning with tourism disaster planning, adopting a preventive adaptive approach by considering reduction and readiness strategies as opposed to a solely reactionary ones (Ritchie, 2008:315). There should be a focus on building capacity. Organizations such as the Dominica Hotel and Tourism Association in collaboration with the Disaster Management Office should assist small private business owners in capacity building.

Immediate and Long-term Integration

There is a need for more collaboration amongst other sectors of the economy with tourism, through which conflicts can be resolved and solutions agreed upon and multiple, mutually supporting and lasting gains pursued. Also, more planning modules should consider long-term effects of development projects. The consistent application of modern precautionary tools and advanced risk assessment methods (which are tailored to complex systems dynamics) in assessing the impacts of tourism developments is something the Government must consider within the tourism 2010 policy.

8.3 OTHER TOURISM-RELATED RECOMMENDATIONS

The need for a clear vision for sustainable tourism, and the political will to implement it effectively is apparent. However, it would be more economically lucrative to focus on

increasing stay-over tourists to the island, since research has confirmed their greater spending habits. (See figure 5.4 in chapter 5). Furthermore, a greater number of tourists come from within the Caribbean than the United States; therefore, product development and marketing approaches need to cater to this clientele. In regard to the island's progression towards sustainable tourism, marketing needs to be aimed more towards countries and potential tourists that practice and support this sort of tourism (Peltier, 2008).

The expressed need for a greater number and quality of rooms has to be revisited and assessed through the lens of a certification program that mirrors more closely the image of Dominica as an eco-tourist destination and is suited to the island's realities. The certification program should not demand the type of upgrading that defies overall progress towards sustainability, by trying to apply resort-type models to the Dominican tourist industry which (by nature) is more small-scale. Also, the certification program at the State College ought to be adapted to meet the needs of service providers. In the case of some taxi operators, the issue of illiteracy (2008) must be taken into consideration.

There is a need for a centralized tourism management system, that will link the various sectors and stakeholders, bringing more order to what is now a very disorganized and disjointed system of activities and services.

8.4 FURTHER RESEARCH

This research could have been further enhanced and informed by more comprehensive ecological studies. There was difficulty in obtaining sufficient conclusive reports on the status of forestry and marine ecosystems, and reports done have not been combined to develop a more holistic understanding of the situation. Also, it would be helpful to gain more insights from a greater number of vendors, bus drivers, and tour guides. There was a general understanding of basic concerns from key informants from these sectors; however, more perspectives may have revealed more detail. There is much knowledge to be gained from further research and consideration of the following: (i) changes in tourism trends; (ii) changes in visitor perceptions; (iii) particular kinds of eco-tourism that

Dominica should be focusing on. Statistics on the types of tourists and their interests would be beneficial in formulating marketing strategies. The potential for other natural hazards such as volcanic eruptions and health threats to impact tourism needs to be further examined and incorporated into tourism planning. The recent outbreak of the h1n1 virus (World Health Organization, 2009) has shown how quickly people moving through airports or other modes of transport can be vectors of transmission. This raises the question of how prepared Dominica is to handle such outbreaks in the healthcare and tourism industry.

As well, it would be useful to utilize more integrative-type research methods in future tourism research in order to get a better understanding of varying perspectives. All these insights would help identify areas of concern so that the framework can be adjusted accordingly. The actual implementation and incorporation of the eco-tourism sustainability framework principles would require strong political will and tough decision-making, especially when there are competing interests involved. The framework needs to be tested in other localities in order to improve relevance to multiple destinations,

8.5 CONCLUDING REMARKS

Examination of Dominica's eco-tourism industry using the eco-tourism sustainability framework has revealed both an enabling and disabling set of factors affecting the industry and its ability to make positive contributions to sustainability. Currently, Dominica supports a sustained small scale type of tourism. As Pattullo states, "constraints acted as a protective mechanism, ensuring that tourist development remained low-key and small-scale" (2005:154). There is some concern that this tourism is being threatened by interest and investments in cruise tourism, which is associated with mass tourism and lack of sustainability (Klein, 2002:101).

This research has recognized that small scale tourism may not always be conducted in a fully sustainable manner, as in the case of Dominica. One of the biggest challenges would be to improve the industry's long-term sustainability at its present scale, amidst pressures

to pursue mass tourism, which promises higher profits but may increase pressures on local resources and undermine the foundations for tourism, without adding substantially to the revenues that stay on the island.

Mr Williams, forestry officer noted, “Compared to 20 years ago, there has been much improvement” (2008). There has been a gradual move towards sustainability, for example in the areas of conservation and preservation by the creation of forest reserves and national parks. Although there is evidence of partial consideration of the framework’s principles both within the public and private sectors, as table 7.6 indicates, none of the requirements within the eco-tourism sustainability framework is fully satisfied. Immediate and long-term integration seems to be an ideal to work towards.

Despite its complex nature, the framework serves as a guide for reversing unsustainable trends and further enhancing sustainable ones, as these relate to the eco-tourism industry. This work makes a significant theoretical contribution to the literature, as it is one of the early attempts to use the GSPs as a generic guide for developing a broader framework for eco-tourism sustainability in a particular case; thereby, identifying more context-specific principles. It enhances the debate on strengths and weaknesses of applying broad sustainability principles that are grounded in integrated systems understanding. The insights on social capital and adaptive capacity add to the resilience literature. In a practical sense, it presents the opportunity to test the application of the eco-tourism sustainability framework in specific cases such as Dominica, in order to investigate how they live up to an idealized approach to tourism, and to inspire action towards this ideal.

This research presents the Government of Dominica and practitioners in the field of eco-tourism with a comprehensive eco-tourism sustainability framework, which can be used to assess processes, plans, programmes, laws, and policies and their contribution towards sustainability. However, further research must be conducted both on the island of Dominica and in other localities in order to improve the framework’s usefulness and applicability.

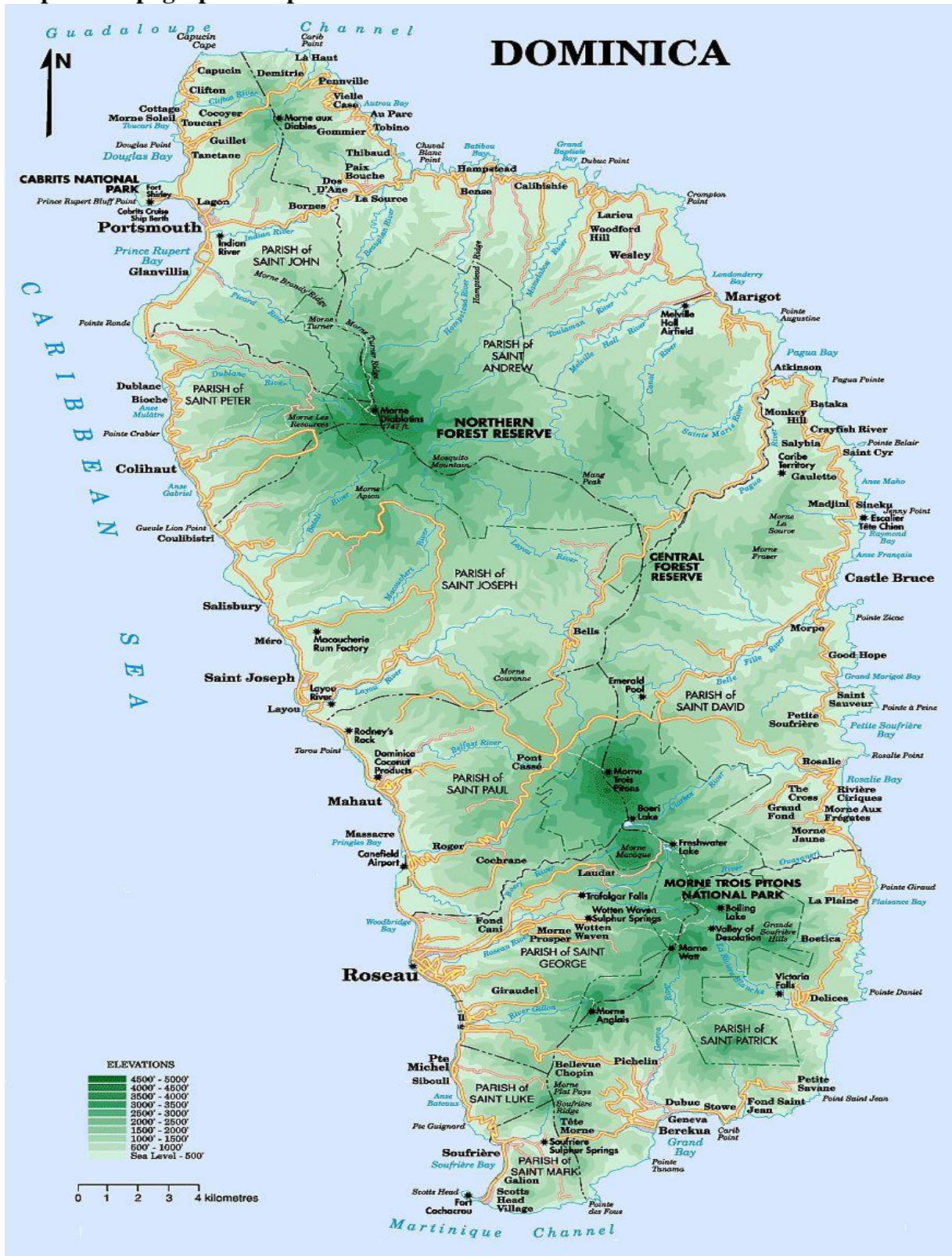
APPENDICES
APPENDIX A

Map 4.1: Relative Location of Dominica in the Caribbean



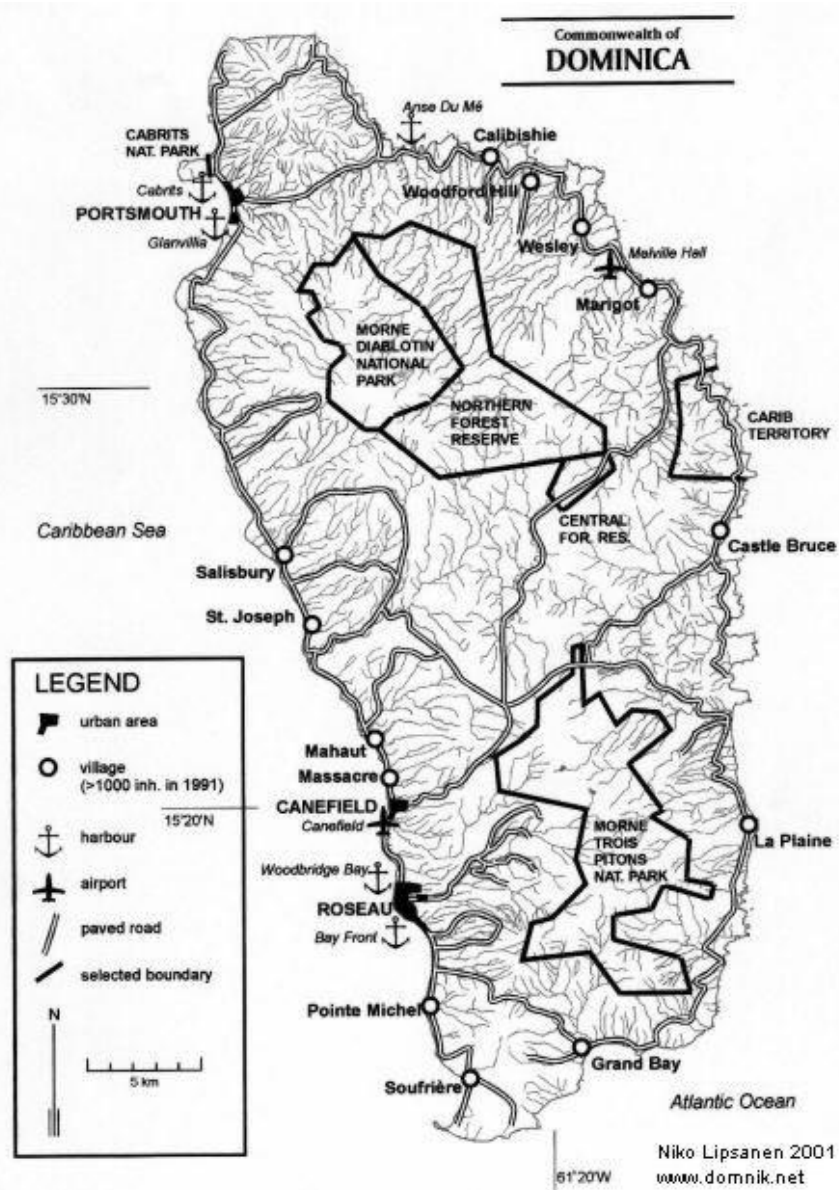
(Source: University of Texas at Austin, Perry-Castañeda Library (2008))

Map 4.2: Topographic Map of Dominica



(Source: <http://hoopermuseum.earthsci.carleton.ca/cruise/dominica/dominicamap.html>)

Map 4.3: Dominica Road Map



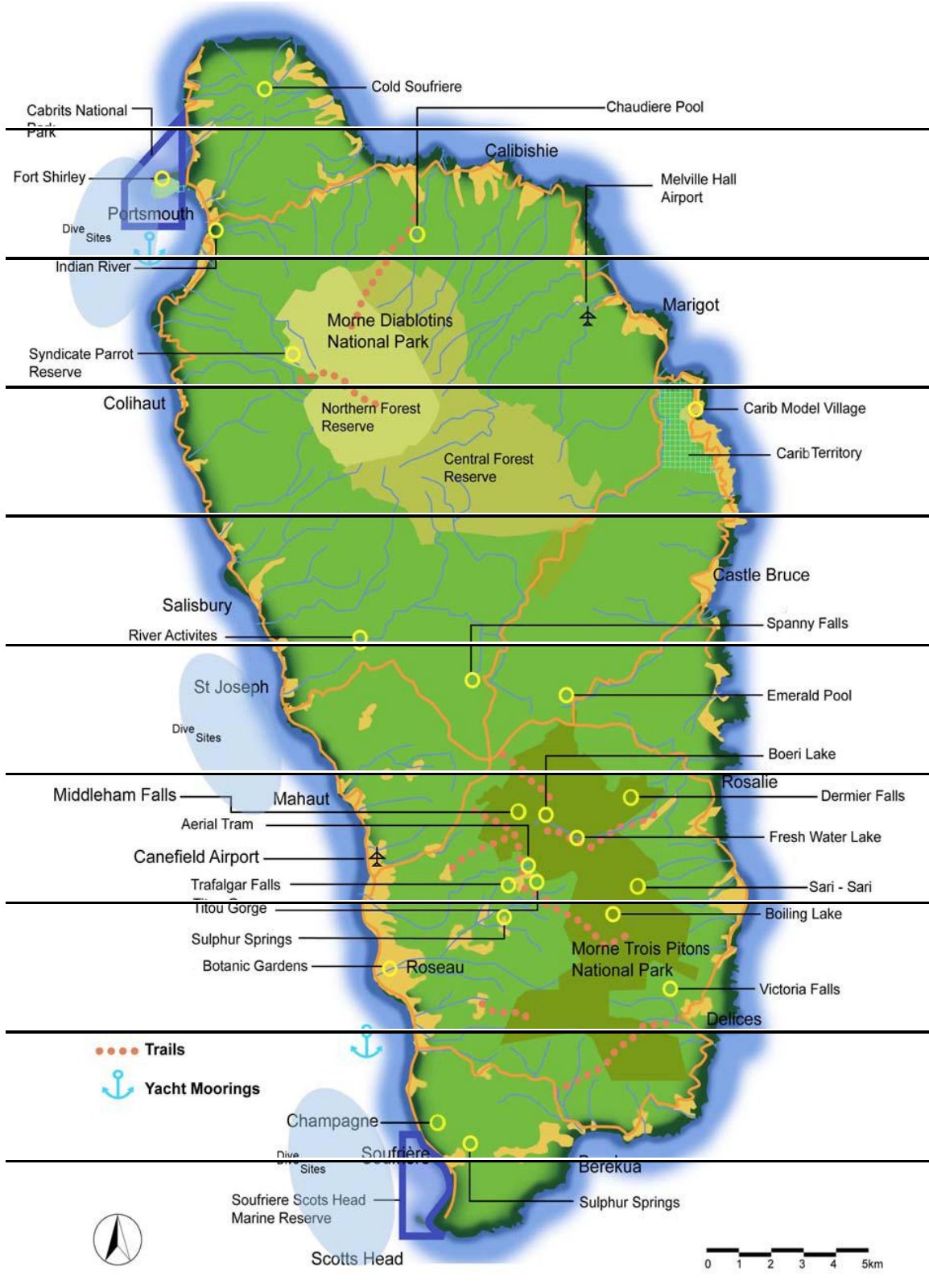
(Source: Lipsanen in Domnik.net, 2001)

Map 5.1b: Topographic Map of The Roseau Valley



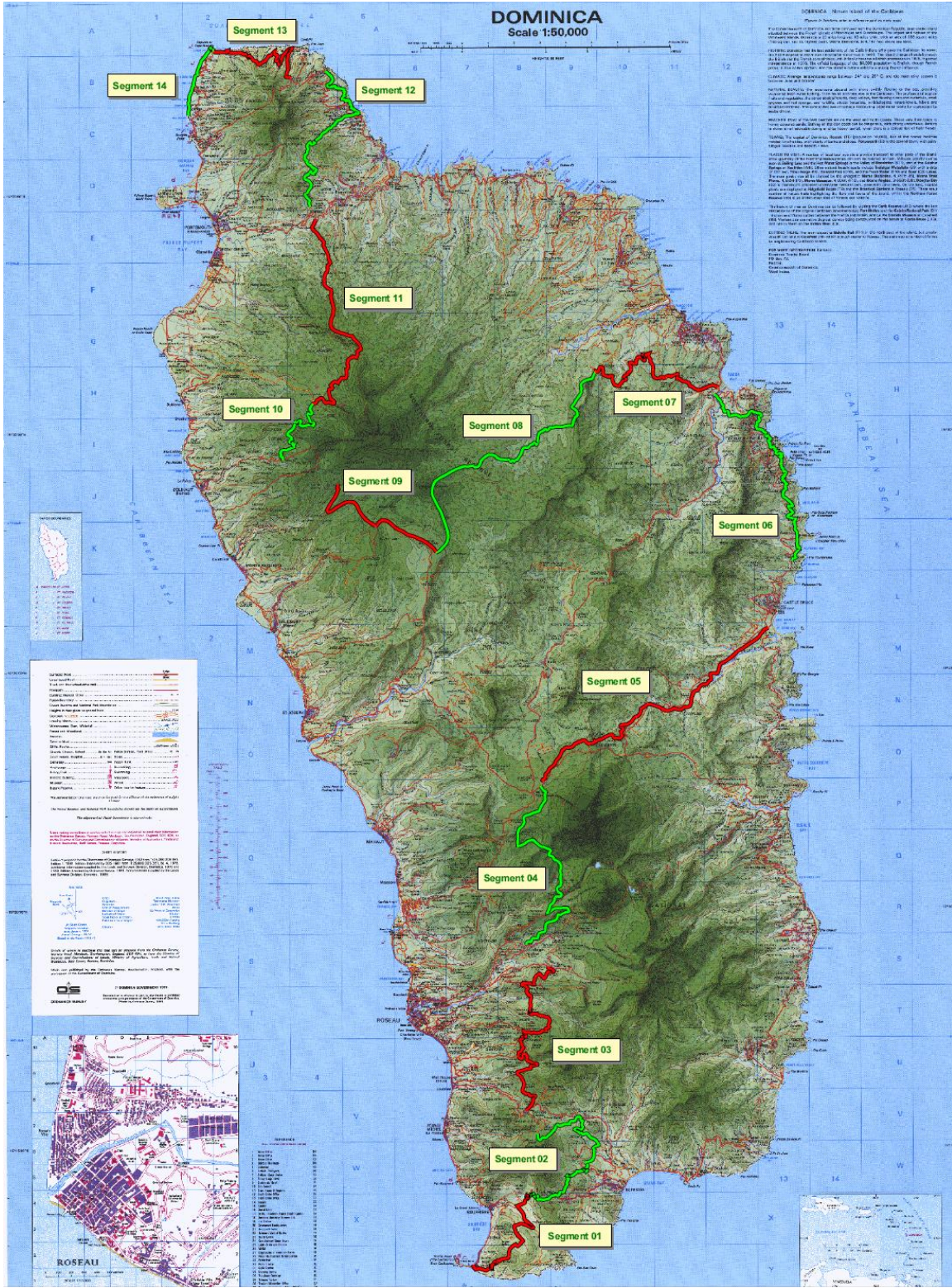
(The Government of Dominica, 1987)
Scale: One inch represents approx. 0.8 miles

Map 5.2: Natural Resources and Cultural Heritage of Dominica

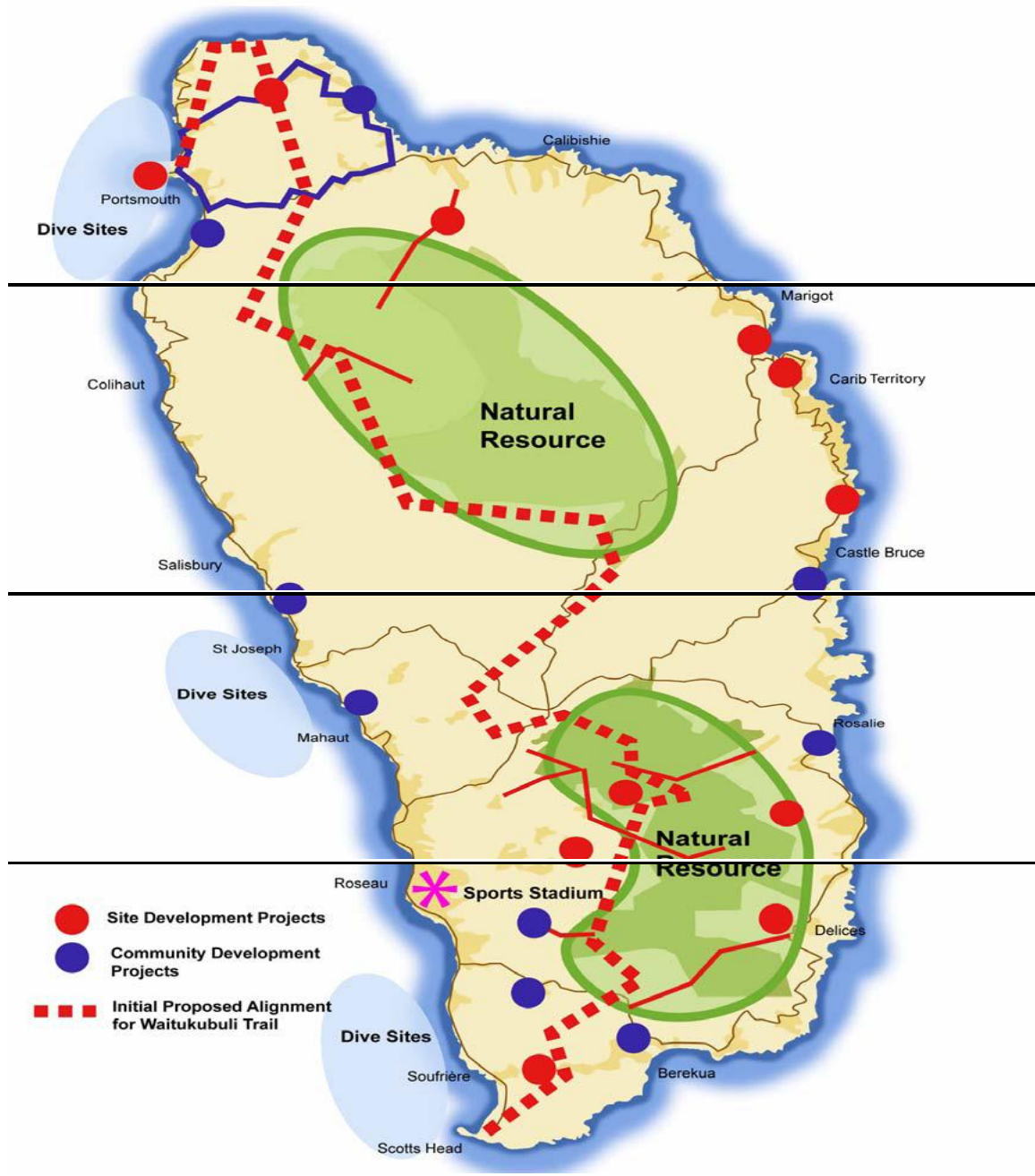


(Source: Government of Dominica, 2006:20)

Map 6.2: Waitukubuli National Trail Project



Map 6.3: Development Projects, Dive Sites and Initial Proposed Alignment for the WNTP



(Source: Government of Dominica, 2006:177).

CHECKLIST OF QUESTIONS

APPENDIX B 1: PUBLIC SECTOR

1. How do you perceive Dominica tourism today?
2. What is the current tourism policy and what kinds of policies (if any) will the Government/Ministry pursue within the next year?
3. How often is tourism policy reviewed?
4. To what extent has foreign investment been encouraged?
5. What are the major problems related to foreign investments?
6. What kinds of incentives will be provided for foreign investment in the future?
7. What are the major tourism projects conducted by the Ministry and what are their implications for tourism development in Dominica?
8. What are the various local and regional tourism organizations, private and non-governmental organizations that have been involved in tourism development in collaboration with the government?
9. What do you see as the major problems/constraints facing tourism development?
10. What are the main target markets?
11. What plans are there to incorporate tourism studies within the school curriculum?
12. In terms of the Budget, are enough funds allocated to the Ministry of Tourism to carry out an effective marketing and administrative program?
13. What type of accommodation is being aimed at e.g. small hotels below 25 rooms, large hotels, etc?
14. What training do you see as central to tourism development in Dominica?
15. What action will be taken to provide such training?
16. What effect do you see that the lack of a national airline or an international airport having on tourism development in Dominica?
- 17 a. Have there been any guidelines for ensuring the sustainability of the tourist industry? b. What are the main elements of these guidelines and how successful have they been? c. Have any provisions been made for the protection of the environment? d. How are citizens involved in tourism planning and management and in decisions being made about tourism development in their communities?
17. What communication takes place between the physical planning department and the Division of Tourism on sustainable issues?
18. Are there any plans to appoint tourism promotion officers overseas?
19. Is there any regional collaboration at CARICOM or OECS level for tourism development?
20. What type of legislation is in place for tourism development?
21. What role does the private sector play in the development of the tourism sector?
22. Do you believe there is co-operation and co-ordination between the public and private sector for tourism development? If so, what, and if not, how should this be achieved?
23. What are some of the main challenges facing tourism development in the future?

APPENDIX B 2: HOTELIERS, RESTAURANTEURS, & SMALL BUSINESS OWNERS

1. What are the objectives of this establishment/service with respect to the Dominican tourist product?
2. When and how was this organization formed?
3. Why was it formed?
4. How much accommodation do you provide?
5. What are your views on the management of tourism in Dominica?
6. What do you think should be the role of government in tourism?
7. Does government policy meet your needs?
8. a. Do you try to conduct/run your business in an environmentally friendly/conscious manner? b. If yes, what are some of these practices? c. What percentage of your staff is local, and what positions do they hold? d. What is this organization doing in respect of training for its employees? e. Are there any measures taken to address the elements of surprise and uncertainty e.g. hurricanes, volcanic tremors etc...? f. Where does the food you serve come from?
8. How successful would you say your business has been?
9. How heavily do you depend on tourism for the survival of your business?
10. What kinds of problems do you encounter in trying to successfully run your business?
11. Has the government ever offered any assistance for business improvement or has your business benefited from any government initiatives?

APPENDIX B 3: ANCILLARY SERVICES

1. Do you have an Association?
2. When was it formed and why? What is its membership?
3. What are your views on how the tourist industry is managed?
4. a. What sectors and organizations do you work with? b. Describe your relationship with the other sectors providing a service to tourists?
5. a. Do you receive any assistance from the Ministry of Tourism and/or Discover Dominica Authority? b. If yes, what kind of assistance?
6. Does present tourism policy meet your needs?
7. How do you see your role in the development of the Dominican tourist product?
8. What issues do you think are important for the future development of tourism?

APPENDIX B 4: NON-GOVERNMENT ORGANIZATIONS AND STATUTORY ORGANIZATION

Dominica Hotel and Tourism Association (DHTA)

Dominica Air & Sea Port Authority

Waitukubuli Ecological Foundation (WEF)

1. When was your Organization formed?
2. Why was it formed?
3. What is the composition of its members?
4. What are the objectives?
5. a. How do you perceive tourism today? b. How would you define eco-tourism? c. What essentials do you think sustainable tourism would involve?
6. How do you see your role in the development of the Dominican tourist product?
7. What is your working relationship with government?
8. What are your views on tourism management in Dominica?
9. What do you believe are the key future issues for Dominican tourism?
10. What are the constraints facing foreign investment?
11. What are the major problems/constraints facing tourism development in Dominica?

CHECKLIST OF QUESTIONS FOR KEY INFORMANTS IN VILLAGE OF TRAFALGAR

APPENDIX B 5: Trafalgar Village Council

1. What has been the council's role in tourism planning and management in this village?
2. Who are the major players responsible for tourism development and management in Trafalgar?
3. Has tourism been an important income generator for this community?
4. Do you know of any tourism programmes or plans being developed by the government in this community or in other communities?
5. a. What kinds of tourism projects or programmes have there been in the past, or are there any present tourism projects you know about in Trafalgar. b. What about programmes and plans for the future?
6. Do any of these plans, projects, or programmes set out guidelines for the protection of the environment?
7. Are voices and concerns of community members considered in the process of tourism planning and management?
8. Are there any major grievances concerning tourism development in this community? If yes, what are those?

APPENDIX B 6: TOURIST VENDORS

1. How long have you been in this business?
2. a. Is this your only source of income? b. If no, what are the other ways in which you may be earning a living?
3. How successful has your business been?
4. What are some of your major grievances, concerning this tourism business?
5. Have you gotten any assistance from the government to help improve your business?
6. Do you know of any tourism programmes or plans being developed by the government in your community or in other communities?
7. Have you heard of the tourism 2010 policy?
8. a. What do you understand by the term eco-tourism? b. What does sustainable tourism mean to you?
9. a. Do you like the way tourism is being managed in your community? b. If no, how do you think it can be improved?
10. Do you get a chance to voice your opinions and concerns, in terms of tourism development in your community?
11. Are you part of an association? If yes, do you think your interests are sufficiently represented? If no, why not?
12. a. What kinds of goods do you sell? b. Do you make/produce them, or do you buy them elsewhere?
13. a. What kinds of products are tourists mostly interested in buying? b. Do they usually spend a long time patronizing your business?
14. How do you see your role in the development of tourism?

APPENDIX B 7: BUS/TAXI DRIVERS

1. How long have you been in business?
2. How successful has your business been?
3. Is this your only source of income?
4. a. Has tourism been a great boost for your business? b. If yes, to what extent? c. If no, why do you think so?
5. a. What do you understand by the term eco-tourism? b. What does sustainable tourism mean to you?
6. a. What kinds of problems do you encounter in trying to successfully run your business? b. Do you have a good relationship with all the other sectors you work with and those providing a service to the tourists?
7. a. Do you think there could be improvements in the way tourism is managed? b. What kinds of changes do you think would need to take place to see an improvement?
8. a. Has the government ever offered any assistance for business improvement, or has your business benefited from any government initiatives?
9. Have you heard of the recent 2010 tourism policy?
10. How do you see your role in the development of tourism?

APPENDIX C 1: LIST OF PARTICIPANTS

GROUP A: GOVERNMENT INTERVIEWEES

1. Minister of Tourism, Mr. Ian Douglas
2. Permanent Secretary, Ministry of Tourism, Mrs. Esther Thomas
3. Permanent Secretary, Ministry of Agriculture, Fisheries & Forestry, Mrs. Claudia Bellot
4. Permanent Secretary, Community Development and Gender Affairs, Mr. Eisenhower Douglas
5. Dominica's Ambassador to CARICOM & OECS (former Minister of Tourism & Chairman of the Caribbean Tourism Organization—(CTO), Mr. Charles Maynard
6. Head of Waitukubuli National Trail Project (WNTP), Ministry of Agriculture, Fisheries & Forestry, Ms. Yvanette Baron-George
7. Forestry Officer, Forestry, Wildlife & Parks Division, Ministry of Agriculture, Fisheries & Forestry, Mr. David Williams
8. National Parks Warden, National Parks Unit, Forestry, Wildlife & Parks Division, Ministry of Agriculture, Fisheries & Forestry
9. Acting Chief Fisheries Officer, Fisheries Division, Ministry of Agriculture, Fisheries and Forestry, Mr. Andrew Magloire
10. Fisheries Officer, Fisheries Division Ministry of Agriculture, Fisheries and Forestry, Mr. Norman Norris
11. Head of the Environmental Co-ordinating Unit (ECU), Mr. Lloyd Pascal
12. Tourism Co-ordinator & Lecturer, Dominica State College, Ms. Katie Julien
13. Chief Environmental Health Officer, Environmental Health Department, Ministry of Health, Mr. Bonifas Xavier
14. Immediate Past Head of The Office of Disaster Management, Mr. Cecil Shillingford
15. National Authorizing Officer (NAO), European Development Fund (EDF), Mr. Edward Lambert

GROUP B: QUASI-GOVERNMENT INTERVIEWEES

1. Chief Executive Officer & Director of Tourism, Discover Dominica Authority (DDA), Mr. Steve Bornn
2. Head of Marketing, DDA, Mrs. Marvlyn Alexander James
3. Head of Product Development, DDA, Ms. Kathleen Cuffy
4. Employee, DDA
5. General Manager, Dominica Solid Waste Management Corporation, Ministry of Health & (Immediate Past Chief Environmental Health Officer), Mr. Anthony Scotland
6. General Manager, Dominica Air & Sea Port Authority, Mr. Benoit Bardouille

GROUP C: PRIVATE SECTOR INTERVIEWEES (INDIVIDUALS)

1. Immediate Past President, Dominica Hotel and Tourism Association (DHTA), Mrs. Judith Pestaina
2. Former Protection Officer, Forestry Division, Mr. Billy Christian
3. Consultant (Former Deputy Director of Tourism), Mr. Sobers Esprit
4. Consultant, Private business owner (Former Deputy Director of Tourism), Mrs. Ophelia Olivaccé Marie
5. Environmentalist (Agronomist & Agriculturist), Mr. Arthurton Martin
6. Independent Tourism Consultant/ Development Consultant, Mrs. Maria Bellot
7. Local Historian & Anthropologist, Mr. Lennox Honychurch

Hoteliers/Restaurateurs/Owners of Private Business

8. Hotelier Restaurateur, “Garraway Hotel,” Mrs. Judith Pestaina
9. Co-Manager, “Exotica Cottage Resort,” Mr. Arthurton Martin
10. Co-Manager, Jungle Bay Resort & Spa, Mr. Samuel Raphael

GROUP D: NON GOVERNMENT ORGANIZATION INTERVIEWEES

1. President, Dominica Taxi Association, Mr. Oris Campbell
2. President, Waitukubuli Ecological Foundation, Dr. Joseph C. Williams
3. Manager, The Scotts Head Soufriere Marine Reserve (S.S.M.R) & Marine Environmentalist, Mr. Nigel Lawrence
4. Head of the Dominica Red Cross, Mrs. Kathleen J. Pinard-Byrne

APPENDIX C 2: LIST OF PARTICIPANTS IN THE ROSEAU VALLEY AREA

GROUP E: GOVERNMENT-RELATED INTERVIEWEE

1. Head, Trafalgar Village Council, Mr. Bobby Fredrick

GROUP F: PRIVATE SECTOR INTERVIEWEES

1. Owner, Community Shop, Trafalgar (Former Chairman, Dominica Tourist Board), Mr. Henry George
2. Supervisor & Snackette Manager, Trafalgar Tourist Facility, Ms. Urtis
3. Taxi Driver A
4. Taxi Driver B
5. Taxi Driver C
6. Taxi Driver D
7. Vendor A
8. Vendor B
9. Vendor C

Hoteliers/Restaurateurs/Owners of Private business

10. Hotelier, Restaurateur, "Papillote Wilderness Retreat," Ms. Ann Jno Baptiste
11. Manager, "D'Auchamps Cottages," Mrs. Patricia Honychurch
12. Manager, "Tia's Bamboo Cottages,"
13. Owners, "River Rock Café," Laura and Mayfield Denis
14. Manager, "Rainforest Shangri-la Resort," Mr. Fred Phillips
15. Owner, "Screw's Sulphur Spa," Mr. Edison Joseph
16. Co-Manager, "Chez Ophelia," (Guest House) Mrs. Ophelia Olivaccé Marie
17. Co-Owner, Cocoa Cottages & Extreme Dominica Adventure Tours, Mr. Richard Metawi

APPENDIX D: Invitation Letter



Faculty of Environmental Studies
University of Waterloo

[Insert date]

Dear [insert potential study participant name]:

This letter is an invitation to consider participating in a study I am conducting as part of my Master's degree in the Department of Environment and Resource Studies at the University of Waterloo under the supervision of Professor Wismer. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

As countries around the world seek to develop their communities, tourism has been playing an increasingly important role in aiding this process. Experiential tourism (including nature, culture, and soft adventure) in particular has been on the rise in areas such as the Caribbean, endowed with natural beauty and diverse cultures. According to a World Tourism Organization (WTO) report, some sectors of experiential tourism were expected to increase by approximately 20% in the next several years. With this trend, community tourism is becoming more widespread, since these resources are located within the communities. Dominica and other similar destinations must ensure that their natural environments and cultural heritage are protected, while tourism is being developed.

This study will attempt to investigate the factors that enabled tourism development; the progress made towards development of the industry; and, to look at ways and means through which community-based tourism can be further developed in a sustainable manner. Thus the purpose of this interview is to rely upon your expertise in my area of interest as it applies to the research intentions outlined above.

Participation in this study is voluntary. It will involve an interview of approximately 30 to 60 minutes in length to take place in a mutually agreed upon location. You may decline to answer any of the interview questions if you so wish. Further, you may decide to withdraw from this study at any time without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will contact you in order to review the transcript; thereby, giving you an opportunity to confirm the accuracy of our conversation and to add or clarify any points you may find fit. All information you provide is considered completely confidential. Your name will not appear in any thesis or report resulting from this study, unless agreed upon by you. Data collected during this study will be retained for 7 years in a secured location to which only the student investigator has access. All electronic data will be encrypted. Only researchers associated with this project will have access. There are no known or anticipated risks to you as a participant in this study.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participating, please contact me at 1-767-276-4192 or 1-767-448-2955 or 1-519-496-0199 or by email at lambert.esther@gmail.com. You can also contact my supervisor, Professor Susan Wismer at 1-519-888-4567 ext. 35795 or email at skwismer@fes.uwaterloo.ca

I would like to assure you that this study has been reviewed and received ethics clearance through the Office of Research Ethics at the University of Waterloo. However, the final decision about participating is yours. If you have any comments or concerns resulting from your participation in this study, please contact Dr. Susan Sykes of this office at 1-519-888-4567 ext. 36005 or at ssykes@uwaterloo.ca

I hope that the results of my study will be of benefit to those organizations directly involved in the study, other voluntary tourism organizations not directly involved in the study, as well as to the broader research community.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,



Esther Lambert

Candidate for MES at University of Waterloo (Environment and Resource Studies)
Tel #: 1-767-448-2955, 1-767-276-4192, or 1-519-496-0199
E-mail: lambert.esther@gmail.com

APPENDIX E: Consent Form

I have read the information presented in the information letter about a study being conducted by Esther Lambert of the Department of Environment and Resource Studies at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous, unless I give permission to be identified.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This project has been reviewed by, and received ethics clearance through, the Office of Research Ethics at the University of Waterloo. I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Director, Office of Research Ethics at 519-888-4567 ext. 36005.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

YES NO

I agree to have my interview audio recorded.

YES NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

YES NO

I agree to identifying my quotations by name in the thesis or publication that comes of this research.

YES NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

APPENDIX F.a: List of Government and Non-Government Agencies Involved in Environmental Management, Environmental Legislation And Agreements

Government Agencies

Lands and Surveys Division – as stewards of state lands.

- Physical Planning Division – administers orderly development throughout the country.

Environmental Health Department – monitors the environment in the interest of public health.

- Dominica Solid Waste Management Corporation – provides for the management of solid waste, including litter, in conformity with best environmental practice.
- Dominica Water and Sewerage Company – delivers potable water supply and sewerage treatment.
- The Environmental Coordinating Unit – coordinates environmental management programmes.
- Maritime Administration Unit – responsible for ship waste management and protection of national waterways.
- Dominica Port Authority – works in tandem with other enforcement agencies.
- Marine Unit of the Dominica Police Force – responsible for enforcement of marine pollution regulations.

Non-Governmental Organisations

- Dominica Youth Environmental Organisation – involved in skills training, public education with special emphasis on climate change, cooperates with tourism sector, organises youth camps and coordinates annual beach clean up campaign.
- Waitikubuli Ecological Foundation – involved in the development of nature trails and places strong emphasis on ecological preservation.

- Dominica Conservation Association – champions conservation issues and environmental protection.

As noted in the *Solid Waste Management Strategy Study*, ‘in the absence of a comprehensive environmental law with clearly defined functions for Government Agencies, conflicting roles and duplication of operations exist’ in the implementation of environmental and pollution policies.

(Source: Government of Dominica, 2006:55-56)

Legislation

- ***Solid Waste Management Act (2002)*** – This act established the National Solid Waste Management Corporation as the national agency charged with the responsibility to provide for the management of solid and other designated wastes. The act confers upon the Corporation the authority to oversee all solid waste management activities in the state.
- ***Beach Control Act (1966, 1990)*** – Makes provision for the protection of beaches, controls the mining of beach material and requires that a permit be obtained for removal of beach material.
- ***Environmental Health Services Act (1997)*** – This act provides for the maintenance and protection of the environment in the interest of public health.
- ***Pesticides Control Act (1974, 1987)*** – Makes provision for controlling the importation and use of pesticides. No regulations exist for restricting practices to ensure environmental protection.
- ***Litter Act (1990)*** – Provides general authority for the control and abatement of nuisances caused by litter on public and private lands.
- ***The Forest Act (1959)*** – This legislation empowers the Minister of Agriculture to establish Forest Reserves on Crown Lands as well as Protected Forests on private lands. It stipulates the conditions for timber harvesting, makes provision for the control of squatting, and defines various other offences.
- ***The National Parks and Protected Areas Act (1975)*** – Provides for the establishment of National Parks and a protected area system.
- ***The Water and Sewerage Act (2002)*** – States the Government’s water policy. It addresses the need for orderly and coordinated development, use and conservation of Dominica’s water resources. It also makes DOWASCO responsible for the supply of water to all residents of the country.

- ***Marine Pollution Management Act (2002)*** – The purposes and objectives of this legislation provide the following:
 - the protection of ecologically-sensitive marine resources
 - enhance the quality of territorial and adjacent international waters
 - implementation of Basel and MARPOL 73/78 Conventions
 - to implement port state control in ship generated waste, commercial, cruise and leisure shipping in ports, marinas and harbours.

(Source: Government of Dominica, 2006:236-238)

Agreements

- The Solid Waste Management Act provides a comprehensive review of the National Waste Management Strategy within five years of its approval. The Minister responsible for planning is to consult with the Minister responsible for Health in carrying out this review. As part of the review, the ministers are to ensure that the strategy complies with Dominica's obligations under regional and international agreements.

The following comprise some of the pertinent agreements:

- ***Marpol 73/78 Convention*** – Dominica is signatory to this convention. It's comprehensive international agreement to prevent pollution of the marine environment by ships. In 1993 the Wider Caribbean Region was designated a "special area" under Annex V of the Marpol Convention.

This designation however requires Governments in the region to provide port reception facilities for the handling of ship generated waste. Dominica has not fully met this requirement though garbage is accepted from visiting ships at port.

- ***Basel Convention*** – An international convention established for the transboundary movement and disposal of hazardous waste. Countries intending to ship hazardous material to another state must receive prior consent before proceeding to export the waste. The Basel Convention has established a list of hazardous waste categories which could be adopted by consenting states. Dominica has adopted Annex 1 and Annex II as categories of hazardous materials in the Solid Waste Management Act.

As Dominica seeks to pursue waste diversion as an important waste management strategy, shipment of recyclable items may be subjected to import restrictions by countries which have classified such materials as hazardous waste under the convention.

- ***St. Georges Declaration*** – A sub regional document which deals with the promotion of mutually beneficial principles for environmental sustainability in the OECs countries. The broad range of principles covered by the document includes economic, social, institutional, technological and environmental issues.

- ***Stockholm Convention*** – A global treaty designed to protect human health and the environment from persistent organic pollutants (POPS). POPS are chemicals that do not easily degrade and persist for long periods in the environment. They are widely distributed globally and accumulate in the fatty tissue of living organisms and are toxic to both human beings and animals. Governments, in seeking to implement the Convention must take measures to eliminate or reduce their release in the environment. Some sources of POPS applicable to Dominica include agro-chemicals and agricultural pesticides some of these existing in stockpiles.

(Source: Government of Dominica, 2006: 237-238)

APPENDIX F.b: List of Ordinances, Acts, and Regulations under Forestry

1902 - 1952

- *Mongoose Ordinance*, prohibiting the introduction of mongoose
- *Wild Birds Protection Ordinance*, for the protection of certain species of wild birds, including the Jaco and the Sisserou. Open and closed hunting seasons were introduced, and later adjusted by the *Wild Birds (Close Season Proclamation)*,
- *Turtle Ordinance*, for protection of sea turtles. Open and closed seasons were also identified, as well as limitations such as “non-interference with turtle nests and nesting turtles” (James, 1999:2)
- *Botanic Gardens Rules*
- *Fisheries Ordinance*, for the regulation of fishing. For example, the use of poison and explosives was prohibited.
- *The Crapaud Ordinance*, for the preservation of the crapaud/edible frog.
- *Forest, Soil and Water Conservation Ordinance*
- *The Compounding Forest Offences Order*
- *Exotic Fish (Prohibition) Ordinance*, prohibiting the introduction of exotic fish.

- 1949: The Dominica Forest Service was established to prevent squatting on Crown Lands and private forests; the removal of forest produce, “pitsawing, charcoal burning, and shingle making” (James, 1999: 3); and, the use of poisoning and dynamiting in rivers for crayfish and mullet.

1958-present

- *The Forest Act*, “to make provisions for the conservation and control of forests (James, 1999: 5).

- *National Parks and Protected Areas Act No 16 of, 1975*, for the establishment of the Morne Trois Pitons National Park and the Dominica National Park System.

- *Forestry and Wildlife Act No. 12 of 1976*, for the management of wildlife, revoking all other previous laws concerning wildlife

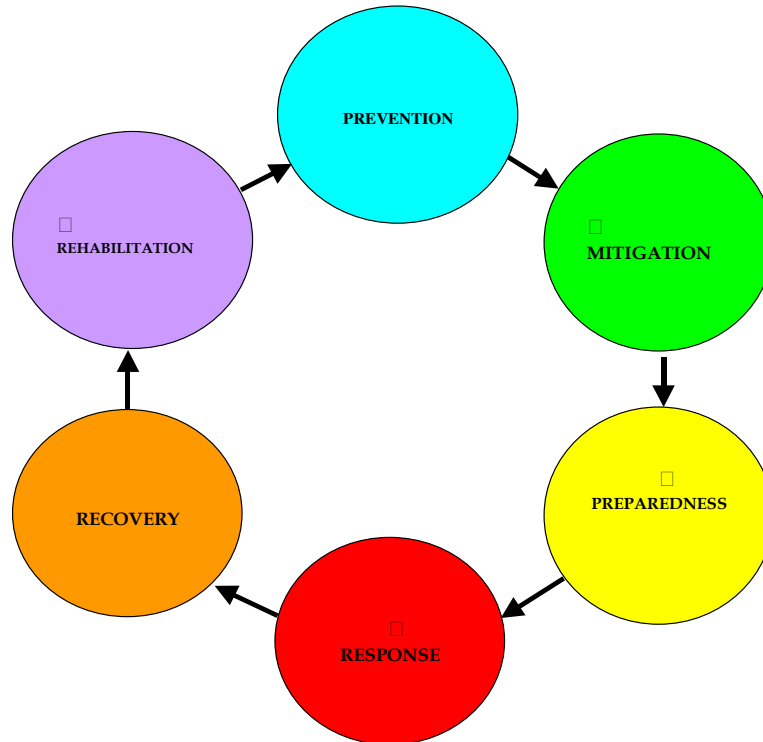
APPENDIX G: Guiding Principles for Dominica's Tourism Vision

- Tourism policy and development programs will be integrated with national economic, social and cultural policy.
- Government will foster a positive environment for the tourism sector and for meaningful local participation in the sector.
- Tourism sector planning and management will be based on partnerships and collaboration.
- Local communities will play a meaningful role in the tourism sector, one that ensures economic, social and cultural benefits to each participating community.
- All tourism activity will be designed to improve the quality of life enjoyed by Dominica's citizens.
- Development of the tourism sector will be market-driven.
- Government will adopt a business model to fulfill their role in tourism sector management – that of destination management.
- Tourism activity will be private sector-driven.
- Tourism policies, program and standards will be integrated with the principles and directions required of the tourism sector arising from Green Globe certification

(Source: Ministry of Tourism and National Development Corporation, 2005:14).

APPENDIX H: Disaster Management in Dominica

Figure 7.2: Disaster Management Cycle for Dominica



Disaster Management Cycle

Source: The Dominica National Emergency Planning Organization (NEPO), 2001

This particular comprehensive approach was adopted after Hurricanes Luis and Marilyn in 1995 (WB, 2001b). The National Disaster Plan makes special mention of Hurricane David and how its impacts could have been mitigated and how recovery could have been speedier if the country was more prepared (National Emergency Planning Organization, 2001). However, two crucial questions remain: How prepared is the country? How much has been done and still needs to be done to reduce vulnerability?

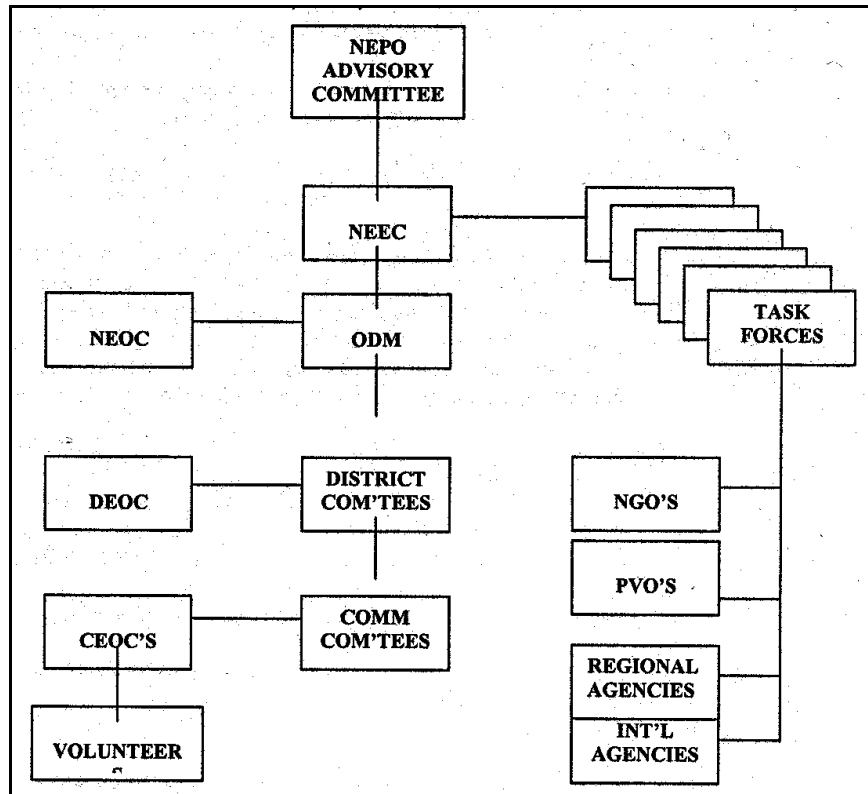
The NEPO consists of a group of individuals from governmental and non-governmental, as well as private voluntary organizations (GOs, NGOs, and PVOs respectively) from various local, regional, and international agencies. This web of connection is detailed in Figure 7.3 below (NEPO, 2001:12). All these interact in order to

facilitate national disaster management efforts. During pre-disaster times, the National Emergency Executive Committee (NEEC) and the ODM will work together to ensure that prevention, mitigation, and preparedness measures are being taken. The ODM has the responsibility to provide education, training, and cooperation with other local, regional, and international agencies. In times of emergency, if the NEEC is unable to meet physically, correspondence may be done by telephone, radio or other practical means, and the action would be implemented by the National Disaster Coordinator (NEPO, 2001:16). On a local level, a District Emergency Chairman will be appointed to each district by the ODM coordinator, and district emergency committees will be set up. The seven districts identified are: Portsmouth (North), St. Joseph (West), Roseau (South West), Grand Bay (South), La Plaine (South East), Castle Bruce (East), Marigot (North East); and, community emergency committees will be established within each of these districts (2001:22-21). This community approach to disaster management is highly commendable, since it is efficient and is intended to equip individual communities with the tools needed to protect themselves during emergency disaster situations (NEPO, 2001:22-3)

NGOs to be involved include the Red Cross and the Adventist Disaster Relief Agency (ADRA). A few voluntary organizations include the Boy Scouts, the Kiwanis Club, Women's Bureau, National Youth Council, and the Rotary Club, among others. Private organizations would include groups such as Cable & Wireless, Dominica Electricity Company (DOMLEC), and Marpin. Regional and international organizations such as the Caribbean Disaster Emergency Response Agency (CDERA), the Caribbean Development Bank (CDB), the Caribbean Community (CARICOM), the Organization of American States (OAS), United Nations Development Programme (UNDP), United States Agency for International Development (USAID), Canadian International Development Agency (CIDA), Pan American Health Organization (PAHO), and the European Union (EU) will also be involved in disaster management initiatives (NEPO, 2001:25-6). These structures and networks serve as a basic guideline for disaster management in Dominica. However, in spite of all the national, regional, and international efforts, Dominica will need more

assistance to strengthen infrastructure, governance factors (e.g., institutional capacity), and lessen social and economic vulnerability.

Figure 7.3: National Emergency Planning Organization (NEPO)



Source: Dominica National Emergency Planning Organization (NEPO), 2001

Presently, Dominica has no legislation for disaster management. The document is now before the Ministry of Legal Affairs. The closest piece of legal document to disaster management regulation is the Emergency Powers Disaster Act (Shillingford, 2009) Lack of appropriate legislation has direct implications for disaster vulnerability reduction efforts, in that, implementation and enforcement are uncertain. Proper policy formulation should form one of the fundamental elements of a disaster risk reduction plan, as it sets the basic guidelines and rules, and assigns accountability. In the absence of such a crucial component, efficient functioning of the entire system is not entirely certain, as in the case of Dominica.

Nevertheless, the CDERA, which co-ordinates on behalf of CARICOM countries, liaises with NGOs (such as OXFAM and USAID), in order to aid in capacity building and subsequent risk reduction (Shillingford, 2009). The OECS has identified two goals under its Country Assistance Strategy (CAS): “strengthening infrastructure and safeguarding the environment” (WB, 2001b). These states are interested in accelerating the process of money lending from the WB, in order to implement disaster management programs. Dominica has received assistance from the WB in preparing a National Environmental Action Plan (NEAP). The overall program to be funded by the WB will seek to accomplish the goals of the CAS (WB, 2001b). Its main objectives include protecting and strengthening social and economic infrastructure; increasing the capacity of the Dominica Emergency Management Agency; increasing “the ability and interest of the private insurance industry to share disaster-related risks;” improving the enforcement of building codes and proper land use planning; and training community-level committees in the area of disaster preparedness and recovery (2001b). The island is in dire need of these kinds of aid.

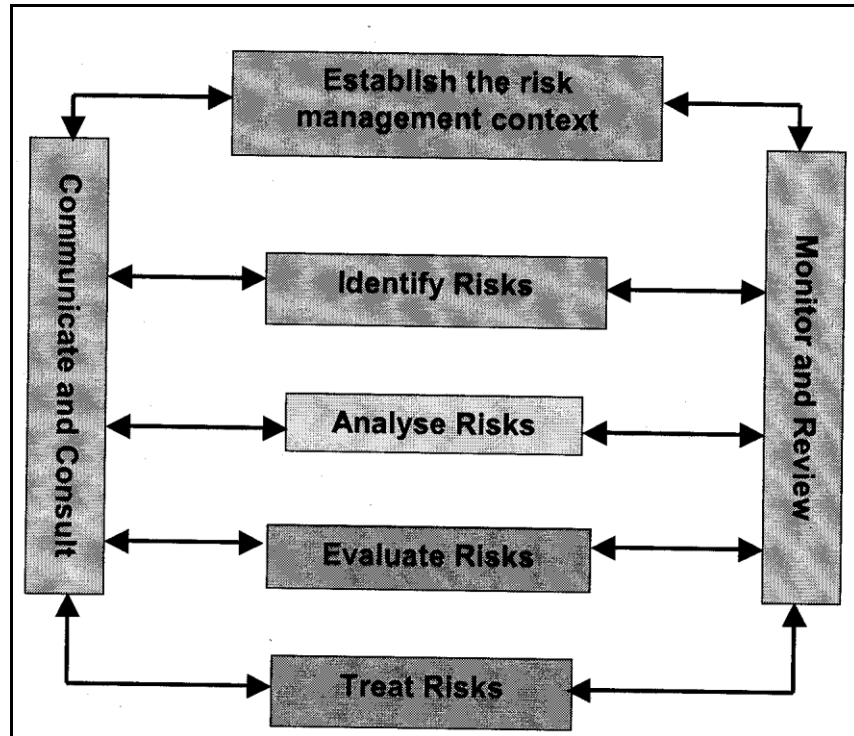
In addition to the efforts of CDERA, a Centre for Disaster Management and Risk Reduction was launched in July 8, 2005, by the University of the West Indies (UWI). Its main goals are as follows: to assemble resources required for disaster risk reduction; to coordinate an academic programme on disaster risk reduction for the Caribbean region; to facilitate training and certification for professionals working in the area of disaster risk reduction; to provide consultancy service and policy advice to “regional governments and institutions;” and, to market and mobilize skills in risk reduction within UWI for dissemination throughout the region and beyond (UWI, 2005).

The dilapidated state of many buildings (Consulting Engineers Partnership Ltd. CEP, 1998) reinforces the need to strengthen physical infrastructure. Structures that have a weak foundation can be easily toppled by the strong winds. Hopefully, such projects which assess the ability of physical infrastructure to withstand hurricane conditions will be undertaken more regularly.

In terms of addressing the marginalization of SIDS within the global economy, UNCTAD has been quite active in supporting and implementing the Program of Action for Sustainable Development of SIDS—a product of the Global Conference on the Sustainable Development of SIDS held in Barbados from April-May of 1994. It has committed itself to particular activities, in order to prevent the further marginalization of SIDS. These include actions such as aid to deal with the factors that hinder diversification and specialization; bolstering the capacity of SIDS to take advantage of trading opportunities within the trade liberalization and globalization framework; communicating, to the international community, the special vulnerability of SIDS and the need to offer them special consideration (UNCTAD, 2000). Moreover, the Commonwealth Secretariat has developed a vulnerability index for developing countries, and supports regional organizations that interact with small states (Commonwealth Secretariat, 2007).

The government has recognized the expected impacts of climate change on weather patterns. The anticipated increase in frequency and intensity of hurricanes and tropical storms has been more of a reality in recent years. Dominica has assumed responsibility for its commitments under the United Nations Framework Convention on Climate Change (UNFCCC); is considering the use of more efficient technology; and, has been involved in raising awareness about climate change issues (Anonymous, 2003:11).

Figure 7.4: Steps in the ‘CHARM’ Risk Management Process



Source: Comprehensive Hazard and Risk Management (CHARM), 2002

A good systematic approach that can be taken to reduce vulnerability would be: (i) to address governance to work towards political commitment and strong institutions; (ii) to enable risk identification; (iii) to ensure knowledge management; (iv) to take concrete actions to reduce impacts; and (v) to ensure preparedness and emergency management. These aspects can be visualized within the components highlighted in Figure 7.4 above, in which risk is identified and reduced through a process of monitoring and consultation. Although this diagram was formulated for Pacific Island Countries, it can be applied to Dominica, which is also a SIDS.

APPENDIX I: REGIONAL AND INTERNATIONAL COLLABORATORS

Table 6.2a: Regional Collaborators

Organization	Function/Involvement
Caribbean Tourism Organization (CTO)	Statistics
Caribbean Alliance for Sustainable Tourism (CAST)	education and training
Caribbean Natural Resources Institute (CANARI)	capacity building; tourism planning and visioning
Organization of Eastern Caribbean States (OECS)	information sharing and capacity building (ministers of tourism meeting)
Caribbean Community (CARICOM)	information sharing and capacity building (ministers of tourism forum)
Caribbean Media for the Promotion of Tourism (CMEC)	Education and Public Awareness
Regional Council of Martinique to include Chamber of Commerce and Regional National Parks and National Forests Office of Martinique	Training and Technical Assistance
Caribbean Environment Health Institute (CEHI)	financial support for management of environmental health
Caribbean Epidemiological Centre (CAREC)	guidance for environmental health legislation

Table 6.2b: International Collaborators

Organization	Function/Involvement
United Nations Educational Scientific and Cultural Organization (UNESCO)	information and knowledge sharing; human and institutional capacity building; promotion of international co-operation in the fields of education, science, culture, and education
Organization of American States (OAS)	Funding
European Union (EU)	Funding
National Oceanic and Atmospheric Administration NOAA	budgetary support; technical support
Pan American Health Organization (PAHO)	budgetary support
Canadian International Development Agency (CIDA)	financial support; training
World Heritage Alliance	site management capacity building
Smithsonian Society	Marketing

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