

**OPERATIONALIZING SUSTAINABLE TOURISM: APPLYING THE TOURISM
OPTIMIZATION MANAGEMENT MODEL (TOMM) TO RESORT
DEVELOPMENT ON ABACO ISLAND**

A Thesis

Presented To

The Faculty of Graduate Studies

of

The University of Guelph

by

CARINA THULIN LOOD

In partial fulfillment of requirements

for the degree of

Master of Landscape Architecture

May, 2007

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ISBN: 978-0-494-33915-2
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ISBN: 978-0-494-33915-2

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ABSTRACT

OPERATIONALIZING SUSTAINABLE TOURISM: APPLYING THE TOURISM OPTIMIZATION MANAGEMENT MODEL TO RESORT DEVELOPMENT ON ABACO ISLAND

Carina Thulin Lood
University of Guelph, 2007

Advisor:
Professor Cecelia Paine

As a result of global sustainable tourism policies and strategies, the focus of the tourism industry has changed from conceptualization to operationalization of sustainable tourism. Although a planning model exists for implementation of such policies, the Tourism Optimization Management Model (TOMM), it has not been applied outside its original context as a destination planning methodology for Kangaroo Island, Australia. To evaluate its potential, the purpose of the study was to apply TOMM to a resort development on Abaco Island in the Bahamas. A literature review of environmental planning and management methodologies, such as the Limits of Acceptable Change (LAC), Visitor Impact Management (VIM), and Visitor Experience Resource Protection (VERP), provided a theoretical foundation. Application of TOMM resulted in procedural modifications due to conceptual and methodological deficiencies. Based on the conditions found on Abaco Island, it was demonstrated that the modified model, the Sustainable Tourism Optimization Model (SUSTOM), is a suitable tourism planning methodology for less developed countries.

ACKNOWLEDGEMENTS

Throughout many years, Jens Nielsen and I have engaged in a political and social discourse on community planning and its contextual basis within broader societal trends. When Jens, as a real estate developer, became involved with a proposed resort community on Great Abaco Island, Bahamas, I saw a wonderful opportunity to learn about tourism planning and its relationship to landscape architecture. On this journey, my thesis advisor, Cecelia Paine, FCSLA, FASLA, has provided me with continuous guidance, support and a wealth of knowledge that comes from teaching and practicing landscape architecture during a flourishing career. For her mentorship and friendship, I am eternally grateful. I would also like to extend my gratitude to my Committee Members, Dr. Chris Choi, Department of Tourism and Hospitality Management, and Dr. Robin Davidson-Arnott, Department of Geography. Dr. Chris Choi has been instrumental in this project, by providing his expertise in sustainable tourism planning and an infectious enthusiasm. As a consultant on tourism projects in the Caribbean, Dr. Robin Davidson-Arnott has provided invaluable insights into local biophysical conditions. I would also like to express my gratitude to the research participants that allowed me to gain an understanding of the environmental qualities they cherish. Thanks also to Joe and Conny Caccamo for making my stay on Long Beach a very pleasant one. Last, but not least, to the Honourable Mr. Neil Campbell, Commissioner of South Abaco, for giving me permission to conduct this study and sharing his aspirations for a prosperous future for the people of Abaco Island.

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GLOSSARY OF TERMS

Alternative tourism	A broad concept used to refer to more sustainable and responsible forms of tourism in contrast to mass tourism. As such, alternative tourism covers a broad range of niche markets that are specialized, flexible, individualized and provide a real or authentic tourism experience (Mowfort & Munt, 2003).
Carrying capacity	The carrying capacity of a recreational setting is the limit of recreational use beyond which the quality of the environment declines beyond some consensual environmental standards including physical, biological, social and experiential indicators.
Development	Contained within the definitions of 'development' and 'develop' are references to growth, making suitable for commercial or residential purposes, and the process of change or improvement. The current debate distinguishes between 'growth' and 'development' with 'growth' referring to an increase in size through material accretion, and 'development' referring to qualitative improvements in societal welfare (Butcher, 1997; Gowdy, 1999; Sachs, 1999; Stabler, 1997).
Ecotourism	"Responsible travel to natural areas that conserves the environment and improves the well-being of local people" (TIES, 2005).
Environment	"All the conditions, circumstances and influences surrounding, and affecting the development of an organism or group of organisms". In this definition both biophysical and socio-economic factors are included' (Ceballos-Lascurain, 1996: 19).
Market segmentation	"The subdividing of a market into homogeneous subsets of customers, where any subset may conceivably be selected as a market target" (Kotler, 1988: x)
Mass tourism	The conventional form of tourism that emphasizes large-scale, high volume, high-density tourist operations that are mostly owned and operated by MNC's, providing a 'sun, sand and sea' tourism experience (Weaver, 2005).
Sustainability	A multidimensional concept encompassing a broad social-biophysical-economic-political context within which individual and societal welfare is to be maintained and developed in such a manner that the intrinsic carrying capacities of the Earth's ecosystems are not exceeded (Eichler, 1999).

Cont'd.

GLOSSARY OF TERMS CONT'D.

Sustainable tourism	Sustainable tourism is a form of tourism development that improves “the quality of life of the host community, provides a high quality experience for the visitors and maintains the quality of the environment on which both the host community and the visitor depend” (McIntyre, 1993, p. 11).
Tourists	Persons who are “traveling to and staying in places outside their usual environment for not more than one year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited” (UNWTO, 2006).
Tourism carrying capacity	“(Tourism) carrying capacity is the maximum number of people who can use a site without an unacceptable alteration in the physical environment and without an unacceptable decline in the quality of the experience gained by visitors” (Mathieson & Wall, 1982: 21).
Tourism	“Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business, and other purposes” (UNWTO, 2006).

ABBREVIATIONS

BMOT	Bahamas Ministry of Tourism
CMHC	Canada Mortgage and Housing Corporation
CTO	Caribbean Tourism Organization
GDP	Gross Domestic Product
LAC	Limits of Acceptable Change
MNC	Multi-National Corporation
SATC	South Australian Tourism Commission
TIES	The International Ecotourism Society
TOMM	Tourism Optimization Management Model
UNCED	United Nation Conference on Environment and Development
UNWTO	United Nations World Tourism Organization
VERP	Visitor Experience Resource Protection
VIM	Visitor Impact Management
WTO	World Tourism Organization
WTTC	World Travel and Tourism Commission

To my beloved father, Lennart,
whose belief in my capabilities always
inspired me to pursue my dreams.
And to my cherished husband, Peter,
for his continuous love, support and enthusiasm
that turned pursuit of this dream into a sheer pleasure.

1. PURPOSE AND ORGANIZATION

1.1. INTRODUCTION

Due to advances in transportation and communication technology, an increase in disposable incomes and leisure times in Western Europe, North America (Choi & Sirakaya, 2006; Hall & Muller, 2005; Momsen, 2005; Mowfort & Munt, 2003; Smith, 2005; Urry, 2000), North-East and South-East Asia (WTO, 2006b), and the globalization of capitalism (Mowfort & Munt, 2003), the tourism industry has grown to become the fourth largest economic sector globally, with 806 million tourist arrivals and international tourism receipts estimated at US\$ 680 billion in 2005 – representing an annual growth rate of 5.5% (WTO, 2006b). In the Caribbean, tourism has been viewed as a universal panacea for economic growth and development because of the particular challenges facing small island states (Butler, Harrison, & Leal Filho, 1996) including high transportation costs, limited market size, lack of a natural resource base (Ciaccio, 1982) and no economies of scale (Wilkinson, 1997). Hence, in the Caribbean region tourism constitutes the most important sector of the economy in terms of employment (25%) and Gross Domestic Product (29.6%) (CTO, 2001). As a popular destination for North Americans since the 1950's (Hills & Lundgren, 1977), the Bahamian economy is one of the most dependent on the tourism sector in the Caribbean region with tourism receipts reaching US\$ 1,985.7 million in 2006, accounting for 50.1% of GDP and 75.1% of employment (WTTC, 2007).

Despite alleged economic benefits from tourism, the tourism industry has had significant impacts on host communities in terms of economic, social, and

cultural effects (Mathieson & Wall, 1982), although tourism impact research is both contradictory and paradoxical (Simpson & Wall, 1999). In terms of economic impacts, the tourism industry has contributed to foreign exchange earnings, employment, income (Archer, 1995; Archer & Fletcher, 1996; Choi & Sirakaya, 2006; Mathieson & Wall, 1982), public revenue (Archer, 1995; Archer & Fletcher, 1996) and regional development (Shackley, 1996), but the extent of this contribution depends on the ownership structure of the tourism industry. When owned and controlled by foreign interests, a significant portion of tourism revenue may leave the destination country due to repatriation of profits, imports of foreign goods, and salaries to expatriates who occupy managerial positions (Hills & Lundgren, 1977; Mathieson & Wall, 1982). To assess the economic impact of tourism, the tourism income multiplier is a commonly used measurement of the ratio of tourism expenditure to the income generated by the tourism industry (Archer, 1995; Archer & Fletcher, 1996). In comparative studies, the income multiplier has been shown to differ between countries (Archer, 1995; Archer & Fletcher, 1996) and has in many cases been a lot smaller than anticipated (Mathieson & Wall, 1982).

With respect to employment, research has been equally contradictory. In some cases local residents have been restricted to menial, low-paying jobs (Dyer, Aberdeen, & Schuler, 2003; Mbaiwa, 2005; Simpson & Wall, 1999), while in other cases they occupy both white- and blue-collar positions (Simpson & Wall, 1999). Likewise, there are differences in income opportunities and regional development between countries, regions, and communities (Mbaiwa, 2005;

Shackley, 1996; Simpson & Wall, 1999; Sindiga, 1996). In general, the tourism industry may only serve to perpetuate unequal power relationships and attendant unequal development on a global basis (Mowfort & Munt, 2003).

In terms of socio-cultural impacts, tourism has been beneficial in contributing to community pride, revival of cultural heritage, and promotion of cross-cultural understandings (Dyer et al., 2003). Conversely, it has led to negative socio-cultural impacts such as prostitution, alcohol consumption, crime, changes in values and moral standards (Sindiga, 1996), and community disintegration (Hills & Lundgren, 1977; Mathieson & Wall, 1982; Simpson & Wall, 1999). To satisfy tourist interests in experiencing local culture and traditions, indigenous cultures are treated as commodities available for tourist consumption leading to changes in cultural representations (Dyer et al., 2003; Mowfort & Munt, 2003). Communities have also been excluded from participation in tourism planning, resulting in a loss of traditional resources (Cater, 1993; Mbaiwa, 2005; Simpson & Wall, 1999), and exclusion from beaches and protected areas (Mbaiwa, 2005; Sindiga, 1996).

As numerous studies indicate, tourism activities have also had significant environmental impacts leading to destruction of sensitive ecosystems (Baldwin, 2000; Buchan, 2000; Cater, 1993; Conway & Lorah, 1995; Mathieson & Wall, 1982; Simpson & Wall, 1999), wetland degradation (Baldwin, 2000; Buchan, 2000), depletion of freshwater resources (Buchan, 2000; Conway, 2004), beach erosion (Baldwin, 2000; Buchan, 2000), and coral reef damage (Buchan, 2000; Hills & Lundgren, 1977; Hunter & Green, 1995; Mathieson & Wall, 1982; Wilson,

1996). At the same time, tourism is dependent on preserving and maintaining natural and cultural resources, since these constitute the main reason for traveling to exotic destinations (Dasman, Milton, & Freeman, 1973; Gunn, 1997, 2002; Inskeep, 1991). According to a survey conducted by the Bahamas Ministry of Tourism (2001), beautiful beaches constitute the primary reason for tourists to visit the Bahamas.

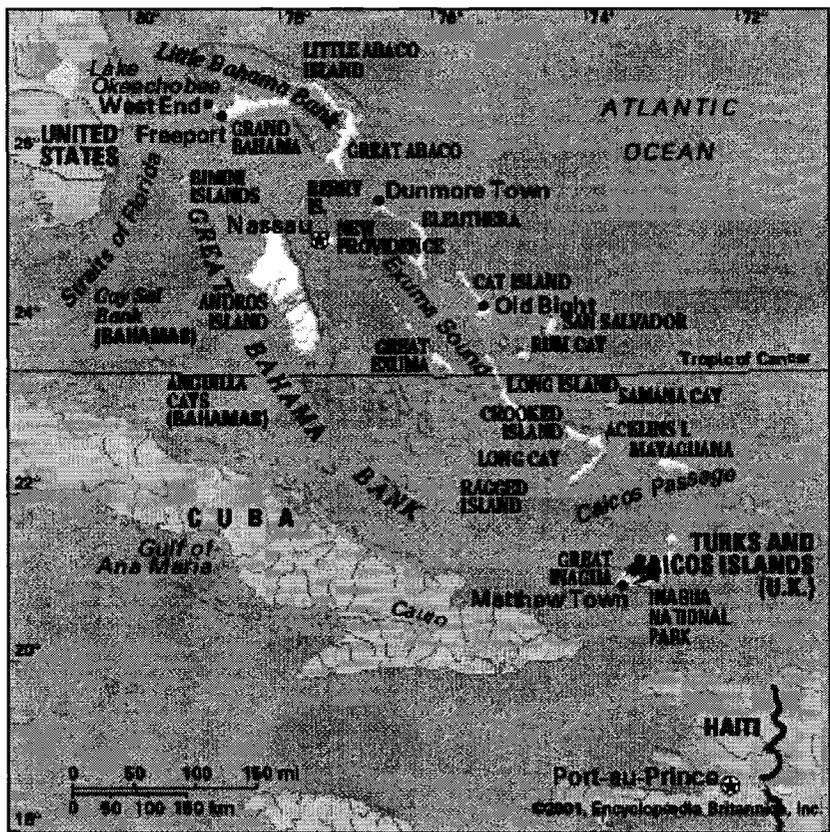


Fig. 1.1. The Islands of the Bahamas. Source: (Canada, 2006)

As a reflection of a global paradigm shift to sustainable development (Choi & Sirakaya, 2005; Mowfort & Munt, 2003) and concerns with the environmental impacts from tourism, the tourism industry has turned its attention to sustainable

tourism development. Despite disagreements regarding the interpretation of the concept (Butler, 1996; Ceballos-Lascurain, 1996; Fennell & Weaver, 2005; Sharpley, 2000; Weaver, 2005), the focus has shifted from conceptualization to operationalization (Choi & Sirakaya, 2005) as identified in both global and regional strategic initiatives. According to *Agenda 21 for the Travel & Tourism Industry: Towards Environmentally Friendly Sustainable Development* (WTTC, 2006), successful implementation of sustainable tourism requires attention to certain priority areas by governments, including development of national sustainable tourism plans, establishment of sustainability indicators and standards for measuring implementation of sustainable development, and development of new tourism products that incorporate sustainable development principles. These recommendations have been adopted by the Caribbean Tourism Organization as specified in the *Sustainable Tourism Development Strategy and Plan of Action for the Caribbean* (CTO, 2001) and the *Regional Sustainable Tourism Policy Framework* (CTO, 2000). Since 1992, the Bahamas has developed an Ecotourism Program aimed at developing an alternative to conventional tourism in the Family Islands with the objectives to promote environmental conservation, local ownership of tourism establishments, and environmental education. Currently, implementation of such sustainable tourism policies relies on environmental planning methodologies, such as the Limits of Acceptable Change (LAC) framework and Visitor Impact Management (VIM) that were originally developed for parks, recreation and wilderness areas. While a model exists to address the shortcomings of these planning methodologies, the

Tourism Optimization Management Model (TOMM), it has not been applied outside of its original context as a destination planning methodology for Kangaroo Island in Australia. Based on the LAC planning methodology, TOMM is a comprehensive framework that relies on community participation in tourism planning and management, but emphasizes achievement of optimal conditions in contrast to identification of 'limits of acceptable change'. It is a strategic and tactical planning model that specifically addresses the complexities related to tourism development and its widespread environmental impacts.

The goal of this study is to apply and evaluate the Tourism Optimization Management Model (TOMM) by applying it to site planning for a 400 acre proposed resort community on Abaco Island in the Bahamas. This modified tourism planning framework is evaluated in terms of its strength, weaknesses and applicability to other tourism planning scales. Furthermore, implications for national policy directives vis-à-vis sustainable tourism planning are considered, as well as site planning recommendations. In order to achieve the stated goal, the study needs to meet the following objectives:

1. To understand the tourism system.
2. To review the literature on sustainable development, sustainable tourism and ecotourism in order to provide direction for application, modification and evaluation of TOMM.
3. To review environmental planning and management frameworks and situate TOMM in relation to these models.

4. To apply TOMM to a proposed multi-purpose resort on Abaco Island.
5. To evaluate the strengths, weaknesses and applicability of TOMM, in particular as a tourism planning methodology for use in less developed countries.
6. To recommend tourism planning policies and site planning strategies for Abaco Island.

1.2. SCOPE OF STUDY

Corresponding to the study objectives, the main stages of the study are described in Figure 1.2. The Tourism Optimization Management Model (TOMM) is comprised of three sections: (1) context analysis, (2) monitoring program, and (3) management response program. Because application of TOMM was limited to the planning phase, a context analysis was conducted that laid the foundation for specification of optimal conditions, indicators and standards for resort development on Abaco Island. During the initial application of TOMM to site planning for a resort, it became evident that the process model has a number of conceptual and methodological weaknesses. Consequently, TOMM was modified based on a literature review of environmental planning and management frameworks, as well as an understanding of the components of the tourism system and site planning issues.

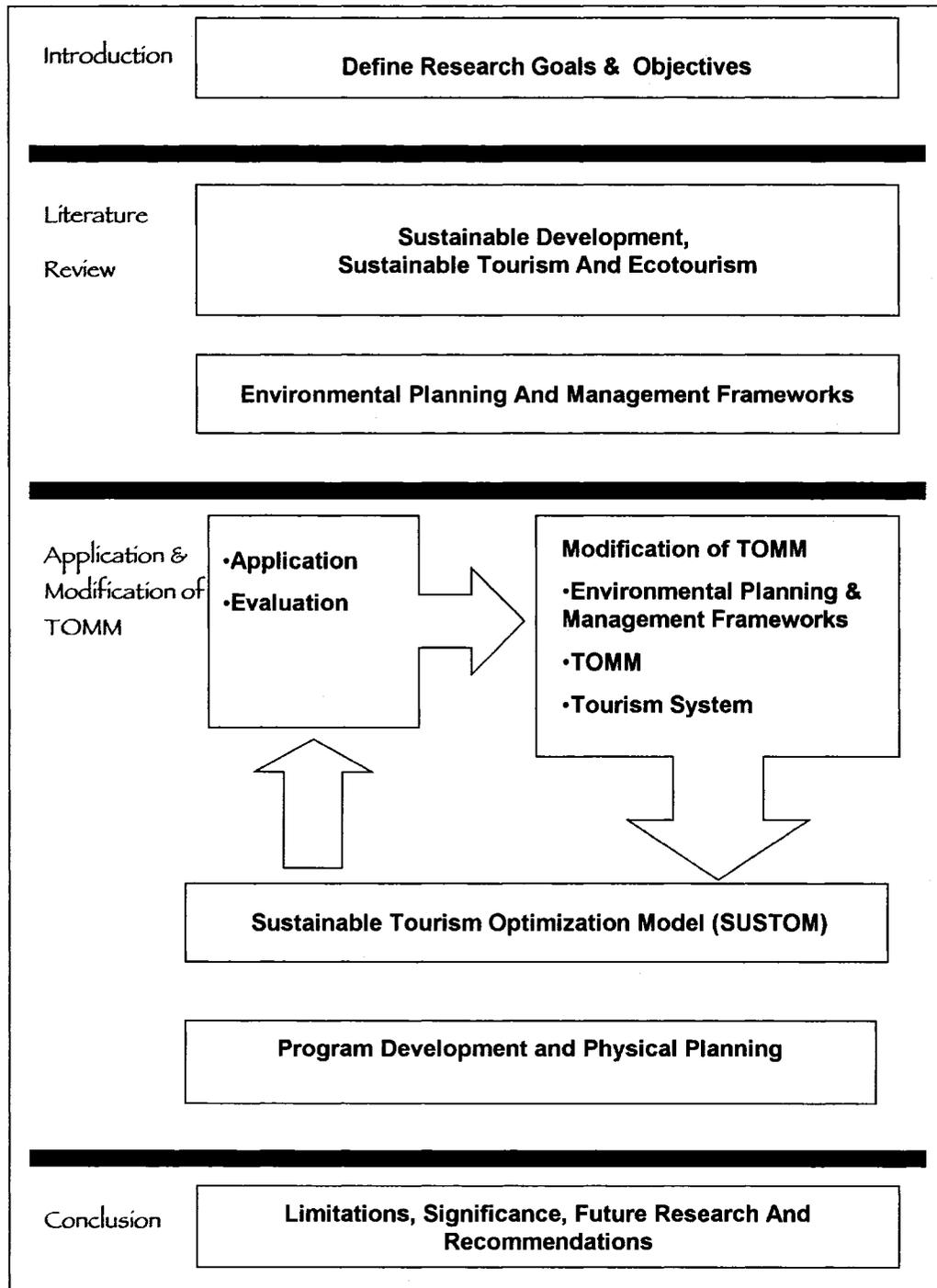


Fig. 1.2. Research Design.

1.3. THE TOURISM SYSTEM

With the growth of the tourism industry, definitions of the tourist and the tourist industry have evolved from economic and technical definitions to a more holistic perspective. During the middle of the twentieth century tourism was promoted as a growth policy, especially for the economic advancement of developing countries (Smith, 2005). Therefore, tourism definitions focused on economic and technical aspects in order to measure the contribution of tourism to national economies (Gunn, 2002; Leiper, 1979). With the goal to capture important statistical information, technical definitions aimed at clarifying the definition of the tourist by focusing on the purpose of travel, length of stay, and distance traveled (Leiper, 1979). These basic components are still operational in contemporary usage as illustrated in Table 1.1.

Table 1.1. Tourism Definitions

	CTO, 1999	CTC, 2004	UNWTO, 2006
Purpose of Visit	Pleasure Business Other activity, not remunerated from within the place visited	Pleasure Business Other purposes	Pleasure Business Other activity, not remunerated from within the place visited
Type of Activity	Recreation, holiday, health, study, religion, sport, visit family/friends, mission, meeting		
Duration of Stay	24 hours >< 1 year	24 hours >< 1 year	24 hours <> 1 year
Distance Traveled	No significance	> 80 kilometers from home, or crossing an international border	No significance

Sources: (CTC, 2004; CTO, 1999).

Using the definition of the tourist as the basis for the definition of the tourism industry, earlier definitions focused on the services required to accommodate the tourist including transportation, accommodation and retail. Since then, definitions have increased in scope and complexity (Gunn, 2002; Leiper, 1979). Jafari (1977), Leiper (1979) and Gunn (Gunn, 1997; 2002) have advocated a systems approach to the tourism industry that promotes a more holistic view. According to formal systems theory (Bertalanffy, 1972) 'a system may be defined as a set of elements standing in interrelation among themselves and with the environment' (quoted in Leiper, 1979). Although these researchers use different descriptors for the elements of the tourism system, there is considerable agreement between them.

An explanatory model of the tourism system has been adapted from Gunn (2002), Inskip (1991) and Kotler (1988) to illustrate the various components of the tourism system and their relationships (Fig.1.3). This model emphasizes the tourist - the demand component - as the focal element, with supply factors existing to fulfill the needs and wants of the tourist. Tourism planning at all planning scales requires a match of demand and supply as well as consideration of external factors. Demand is dependent on the ability to pay, the physical ability to travel, and motivations to travel (Gunn, 2002). Supply factors include attractions, services, transportation, information and promotion. External factors include natural resources, cultural resources, community, finance,

entrepreneurship, labour, government policies, competition, organization and leadership (Gunn, 1997, 2002).

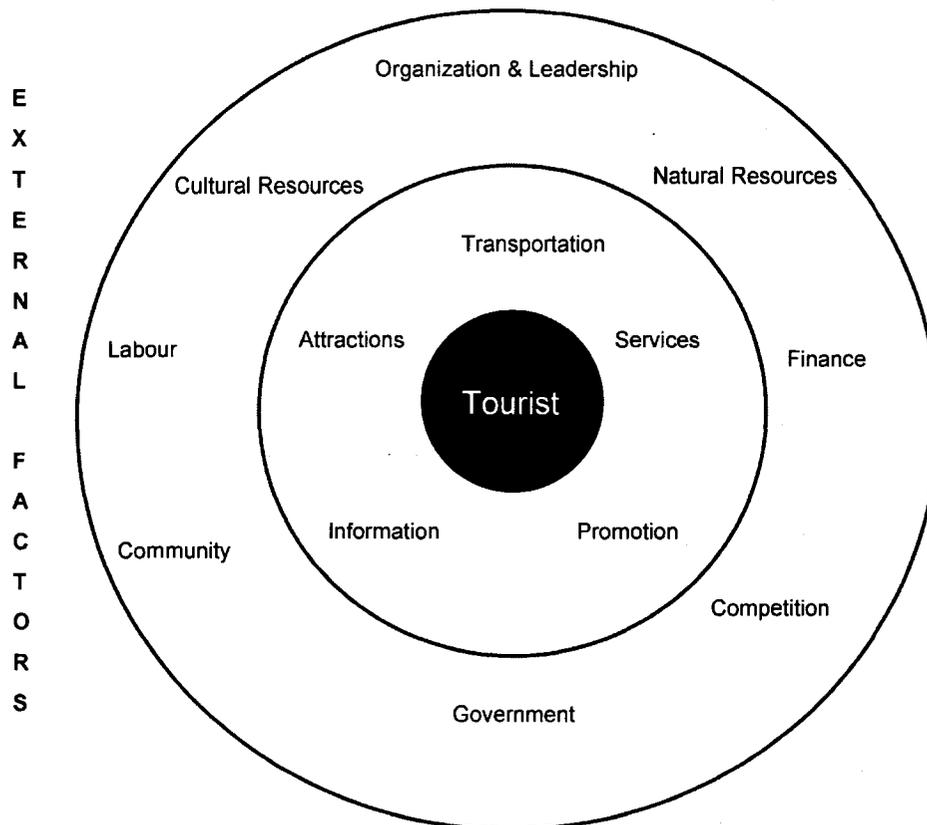


Fig. 1.3. The Tourism System. Adapted from Gunn (2002), Inskeep (1991) and Kotler (1988).

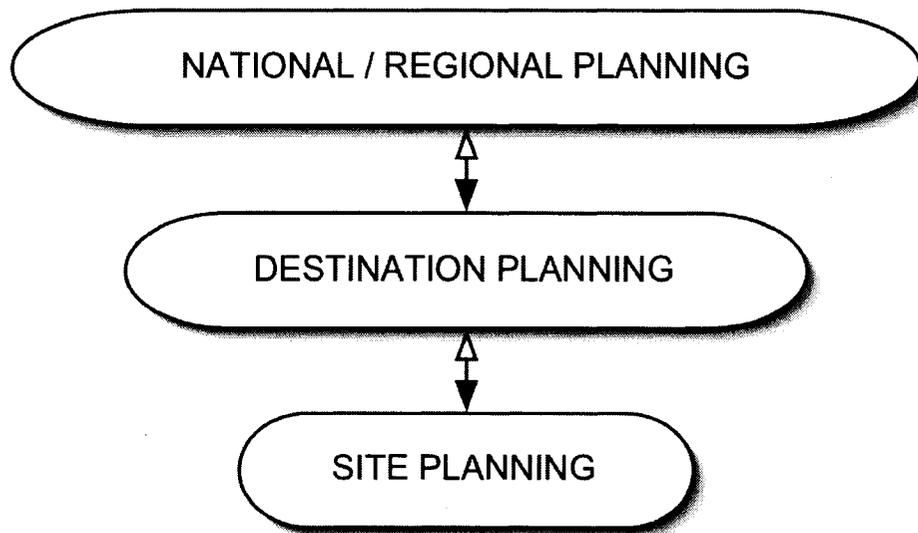
Tourists are seduced by the attractions of the destination zone that can be categorized in terms of natural and cultural resources. In general, the term 'natural resources' refers to five basic elements including water, topography, vegetation, climate, and wildlife. The term 'cultural resources' refers to categories including prehistory, archeology; history; ethnicity, lore, and education; industry,

trade, and professionalism; and sites of entertainment, health, religion and sports (Gunn, 2002). Attractions contribute to tourist satisfaction and experiences, and constitute the primary reason for travel (Gunn, 1997, 2002).

1.4. TOURISM PLANNING SCALES

This tourism model can be applied to all scales of tourism planning including the national/regional, community and site planning scales (Fig. 1.4). Planning at the national/regional scale may be particularly appropriate for directing tourism development to areas where tourism growth may have the least impact on social and environmental conditions. National and regional governments also have a large role to play in ensuring sustainable tourism practices through various policy initiatives and regulations. Destination planning refers to the community attraction complex according to the terminology used by Gunn (1997, 2002). At this scale, tourism planning is focused on basic elements such as transportation, infrastructure, services, and attraction complexes. While some resort developments offer all-inclusive packages, including activities, many tourists are attracted to a destination zone because of its natural and cultural resources. Therefore, planning for these attractions so that it is convenient for tourists to experience them is important for the success of individual property developments as well. At any planning scale, demand, supply and external factors need to be considered in order to identify potential market segments and match these with existing or potential natural and cultural resources (Gunn, 1997, 2002).

Figure 1.4. Tourism Planning Scales.



Source: Gunn (2002).

1.5. ORGANIZATION OF STUDY

To provide a theoretical background for application of the Tourism Optimization Management Model, a literature review is presented in Chapter Two including an examination of the sustainable tourism concept and its relationship to its parental paradigm – sustainable development - based on a dependency paradigm for elucidating the particular conditions facing the countries in the Caribbean in general, and specifically in the Bahamas. From a broader understanding of the issues facing small island states with respect to tourism, a personal position vis-à-vis sustainable tourism development is articulated that will be used to guide the present study. In Chapter Three a number of environmental planning and management frameworks are reviewed, including carrying capacity, the Limits of Acceptable Change (LAC) system, Visitor Experience Resource

Protection (VERP), and Visitor Impact Management (VIM), since these models and their theoretical and conceptual foundations formed the background for development of the Tourism Optimization Management Model (TOMM). A description of this process model concludes this chapter. In Chapter 4, TOMM is applied to resort development on Great Abaco Island, and evaluated in terms of its strengths and weaknesses – a process that resulted in a modified tourism planning methodology – the Sustainable Tourism Optimization Model (SUSTOM). After the application and adaptation of TOMM to site conditions, the chapter proceeds with a section on program development and physical planning where the relationships between environmental and physical planning are explored. The chapter concludes with general recommendations for resort development in addition to sustainable design strategies. In Chapter 5: Conclusion, the author discusses the limitations and significance of the study as well as directions for future research. Thereafter, the chapter concludes with recommendations for tourism policies and site planning strategies.

2. CONCEPTUALIZATING SUSTAINABLE TOURISM

2.1. INTRODUCTION

Since the World Conference on Environment and Development (WCED) in 1987, there has been considerable debate on the concept of sustainable development and its application within a tourism context. In this chapter, tourism development and its impact on economic, social, cultural and environmental factors are investigated within the context of tourism in the Caribbean. Viewed from a dependency paradigm, whereby development of Caribbean microstates is conditioned by development in metropolitan centers, the geopolitical situation was examined with implications for tourism policy and planning and implementation of national sustainability strategies. Against this background, the related concepts of sustainable development, sustainable tourism and ecotourism were discussed with the intention of arriving at principles to guide the present study. This was followed by a literature review in this chapter with the following objectives: (1) to understand the nature of Caribbean tourism development, (2) to define sustainable development, sustainable tourism and ecotourism, and (3) to define an approach to sustainable tourism development that will provide direction in planning for a resort development.

2.2. TOURISM DEVELOPMENT IN THE CARIBBEAN

2.2.1. CONDITIONS IN THE CARIBBEAN: DEPENDENCY AND POLICYMAKING

In analyses of historic and contemporary development patterns in the Caribbean, various authors have adopted a Neo-Marxist framework that view development and dependence as a function of global relations (Dos Santos, 1972; Frank, 1972; Harrigan, 1974; Mowfort & Munt, 2003). Dos Santos (1972) and Frank (1972) proposed a theoretical framework whereby development in satellite regions, such as the Caribbean and Latin America, is conditioned by the development and expansion of metropolitan centers in Europe and the United States. "Dependence is a situation in which a certain group of countries have their economies conditioned by the development and expansion of another economy, to which the former is subject. The relation of interdependence between two or more economies, and between these and world trade, assumes the form of dependence when some countries (the dominant) can expand and give impulse to their own development, while other countries can only develop as a reflection of this expansion" (Dos Santos, 1972: 71).

Using a similar framework, Harrigan (1974) examined the relationship between the legacy of colonialism and tourism development in the Caribbean, with the conclusion that historic dependency patterns are maintained in terms of economic, cultural, social and political relationships. Global expansion of the capitalist system and the associated structure of the tourism system maintain these dependency relationships between metropolitan centers and satellite

regions by controlling supply and demand chains (Mowfort & Munt, 2003). With respect to tourism operations, multinational corporations own and control airlines, hotel accommodations, travel agencies and tour operators along the entire supply chain (Mowfort & Munt, 2003). In addition, these entities have the advantage of being closest to the consumers in Western European and North American tourist generating zones (Duval & Wilkinson, 2004; Mowfort & Munt, 2003)(Table 2.1). Hence, the travel and tourism industry in most Caribbean countries is dependent on metropolitan centers.

Table 2.1. Outbound Tourism by Region 2000-2005.

Region	International Tourist Arrivals (millions)			
	2000	Share %	2005	Share %
World	686.8	100	806.3	100
From:				
Europe	396.7	55.7	449.0	55.7
Asia and the Pacific	115.5	17.0	154.3	19.1
Americas	131.5	19.0	137.1	17.0
Middle East	13.7	2.0	21.9	2.7
Africa	16.5	2.4	20.3	2.5

Source: WTO (2006b).

Dependency problems are further compounded by particular conditions facing island microstates, including most Caribbean countries. In a comparison between island microstates and developing countries, Ciaccio (1982, cited in Wilkinson, 2004) suggested that they share similar characteristics : small size and population, underdevelopment, a limited natural resource base, lack of local markets, high transportation costs, peripheral location and importance, lack of

infrastructure and service industries, and a dominant economic sector. For many countries in the Caribbean, travel and tourism is the largest economic sector in terms of GDP and employment (Table 2.2). In addition, Wilkinson (1997) emphasized the dependence on global markets, no economies of scale, cultural domination, and a limited ability to influence terms of trade, or to control their own national economic policies.

Table 2.2. Caribbean Dependence on the Travel and Tourism Industry.

Country	Total GDP US\$ Mn	Tourism (% of Total)	Tourism Employment (Thousands of Jobs)	% of total employment
Antigua and Barbuda	756.6	85.4	9	95.0
Aruba	1,894.5	78.0	20	95.0
Bahamas	3,159.1	50.1	38	71.5
Barbados	1,406.5	41.4	22	56.5
British Virgin Islands	584.3	54.7	4	83.6
Cayman Islands	737.2	34.4	4	47.4
Costa Rica	3,227.1	16.7	120	18.7
Cuba	4,139.4	14.6	231	16.0
Curacao	190.7	4.1	1	7.2
Dominica	87.7	29.5	10.4	38.7
Dominican Republic	6,705.4	21.3	208	19.4
Grenada	146.6	29.9	3	26.6
Guadeloupe	1,235.3	44.1	48	47.0
Haiti	356.2	7.4	73	7.5
Honduras	849.5	9.6	80	7.7
Jamaica	3,471.8	33.1	113	35.4
Martinique	897.9	9.4	7	10.3
Puerto Rico	5,615.3	6.2	26	6.4
Saint Kitts and Nevis	127.5	28.4	2	34.1
Saint Lucia	438.1	51.0	14	57.6
St Vincent and the Grenadines	159.2	33.8	5	35.5
Trinidad and Tobago	2,064.8	16.6	36	19.3
Virgin Islands	2,194.3	42.9	9	64.2

Source: WTTC (2007).

This dependency relationship between metropolitan centers and peripheral Caribbean microstates compromises their ability to realize national goals and interests; they are subject to 'exogenous decision-making' (Harrigan, 1974: 22). "When a Third World country uses tourism as a development strategy, it becomes enmeshed in a global system over which it has little control. The international tourism industry is a product of metropolitan capitalist enterprise. The superior entrepreneur skills, resources and commercial power of metropolitan companies enables them to dominate many Third World tourist destinations" (Britton, 1982: 331). However, despite this dependency, Wilkinson (1997; 2004) discovered positive signs of effective tourism policies and plans that have enabled Dominica and the Cayman Islands to exert control over the direction of the tourism industry. In Dominica, the government has effectively implemented policies to promote alternative tourism focused on small-scale and locally owned operations, targeted to a growing ecotourism market (see also Weaver, 1991). In the Cayman Islands, tourism policy has focused on attracting a high-end market segment resulting in higher per capita visitor expenditure (Wilkinson, 2004). To promote alternative forms of tourism, the Caribbean Tourism Organization has called for the implementation of a Sustainable Tourism Zone in the region, and formulation of national tourism policies focused on sustainable tourism and ecotourism (CTO, 2001). In the Bahamas, the national government launched the Ecotourism Program in 1997 with the objectives to protect and conserve the environment, provide environmental education, and promotion of ecotourism initiatives on the Out Islands.

To conclude, the countries in the Caribbean may face challenges with exercising control over tourism development in light of global political and economic structures, but there are positive signs that alternative tourism policies may be successful because of a global paradigm shift to sustainable tourism (Choi & Sirakaya, 2005; Mowfort & Munt, 2003). Tourism is also heavily dependent on pristine environments, since this constitutes one of the primary reasons for travel (Gunn, 1997, 2002). Hence, tourism stakeholders have a common interest in minimizing environmental impacts (Gunn, 2002). As described by Dasman et al. (1973: 5) , “despite the demand for various sophisticated facilities which often accompanies it, tourism is basically dependent on unspoilt environment. In most other forms of development, some environmental values have to be sacrificed in return for expected benefits, but for tourism the maintenance of these values at a high level is essential. Well-planned tourism can in fact help both to justify and safeguard the quality of the environment “.

2.2.2. TOURISM AND THE ENVIRONMENT

Recognizing the inherent reliance on environmental conservation and protection, mass tourism has been demonstrated to have economic, ecological, and socio-cultural impacts (Baldwin, 2000; Buchan, 2000; Conway, 2004; Conway & Lorah, 1995; Mathieson & Wall, 1982; Pattullo, 2005; Watts, 1995; Wilson, 1996).

While tourism development has been promoted as an economic growth strategy for developing countries, with economic benefits such as foreign exchange earnings, income, employment (Archer, 1995; Archer & Fletcher, 1996; Choi & Sirakaya, 2005; Mathieson & Wall, 1982; Sharpley, 2000), public revenue (Archer, 1995; Archer & Fletcher, 1996), and regional development (Shackley, 1996), its economic benefits as stimulus are questionable. Tourism research suggests wide differences in income opportunities, employment and regional development as an outcome of tourism development (see for instance Dyer et al., 2003; Mbaiwa, 2005; Simpson & Wall, 1999). Various authors have also found that the proposed economic growth has been much smaller than anticipated due to (a) the proportion of tourist revenues that disappear due to the import of foods and beverages and foreign ownership of tourist operations (Pattullo, 2005), and (b) weak linkages to other economic sectors (Hills & Lundgren, 1977; Mathieson & Wall, 1982; Wilkinson, 1989).

In terms of ecological impacts, tourism development has resulted in destruction of marine and terrestrial environments. In the Caribbean, coral reef destruction is widespread (Pattullo, 2005), and can be attributed to pollution, destructive behaviour by divers and snorkelers, siltation from dredging operations and construction work, disposal of raw sewage and garbage (Buchan, 2000; Conway & Lorah, 1995; Pattullo, 2005). Furthermore, to make way for tourism facilities the indiscriminate destruction of wetlands and mangrove forests is a common occurrence (Baldwin, 2000; Buchan, 2000; Pattullo, 2005). Depletion of renewable resources, especially water, is a common concern (Pattullo, 2005).

Negative socio-cultural effects, including community disintegration (Simpson & Wall, 1999), changes in values and moral standards (Pattullo, 2005; Sindiga, 1996), commodification of culture (Dyer et al., 2003; Mowfort & Munt, 2003), loss of traditional resources (Mbaiwa, 2005; Simpson & Wall, 1999) and exclusion from beaches and protected areas (Mbaiwa, 2005; Sindiga, 1996), were also found to accompany tourism development.

To address the issues related to mass tourism, the focus has shifted to alternative forms of tourism development, including sustainable tourism and ecotourism. As an outcome of a global paradigm shift to sustainable development, these concepts are best understood by reference to their parental paradigm.

2.3. SUSTAINABLE DEVELOPMENT: A GLOBAL PARADIGM SHIFT

The origin of the sustainable development concept can be traced back to the industrialized era and the modernization paradigm that emphasized economic growth, consumerism, and a faith in science and technology to solve environmental problems (Choi & Sirakaya, 2005). In the 1960's, a burgeoning environmental movement drew attention to the intrinsic carrying capacity of the Earth to sustain resource extraction and assimilation of waste products as part of contemporary production and consumption processes (Choi & Sirakaya, 2005). The recognition that the Earth can be viewed as a closed system, imposing 'limits to growth' in terms of its finite capacity to supply non-renewable and renewable resources, brought a global focus to the debate on environmental issues (Choi &

Sirakaya, 2005; Lafferty, 1998). In 1987, this global interest culminated in the Brundtland Commission's publication of *Our Common Future*, according to which "sustainable development is development that meets the needs of the present generation, without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs" (WCED, 1987: 43). According to this definition, sustainable development is based on the principles of resource sustainability and intra- and inter-generational social equity. Despite the continuing debate over interpretations of sustainability and development, the publication of *Our Common Future* resulted in an holistic and integrated approach to economy, society and the environment (Paehlke, 1999).

In accordance with *Our Common Future*, many contemporary scholars and researchers view social equity as the primary issue of sustainable development (Eichler, 1999; Guha, 1999; Lafferty, 1998; Plumwood, 1995; Plumwood & Routley, 1994; Reboratti, 1999; Redclift, 1999; Sachs, 1999). For instance, based on empirical observations of conditions in Latin America (Plumwood, 1995; Plumwood & Routley, 1994; Reboratti, 1999) and in India (Guha, 1999) environmental problems were found to be related to issues of political, economic, and social equity that dictate the use of environmental resources and their distribution. According to Guha and Gadgil (1995) these

relationships can be understood as an interrelated complex of social, economic, political, legal, and ideological factors, viewed from a framework of conflicting social classes with social structures, institutions and organizations that facilitate or hinder sustainable resource use. Consequently, an integrated framework for addressing the problems of unsustainable production and consumption patterns is required.

As an outcome of empirical and theoretical studies, many authors have proposed a holistic model of sustainable development that incorporates an integrated approach to economy, society and the environment (Eichler, 1999; Gowdy, 1999; Guha, 1999; Redclift, 1999; Robinson & Tinker, 1995; Sachs, 1999; Stabler, 1997). To illustrate this holistic approach, Margrit Eichler's (1999) conceptualization of sustainable development, will be used as an example because of its logical and intuitive appeal.

As a starting point, Eichler used a simplified model of sustainability conceived by Robinson and Tinker (1995). According to this model, sustainable development can be thought of as a complex of three primary systems that are overlapping, self-organized, interrelated and co-equal: (1) the biospheric or ecological system, (2) the economic system, the market or the economy, (3) society, the sociosphere, or the human social system (Fig. 2.1).

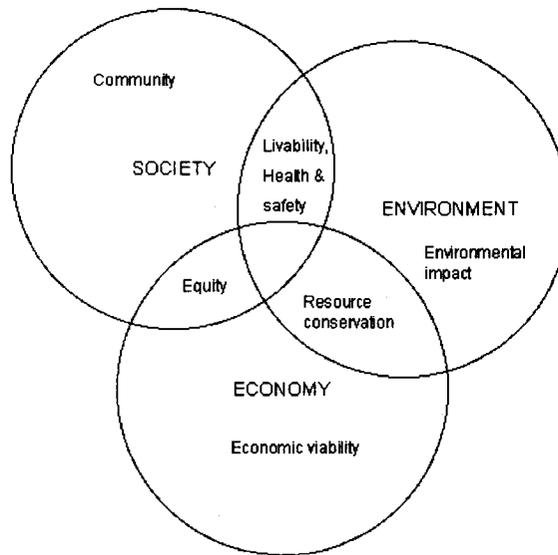


Fig. 2.1. The Dominant View of Sustainable Development. Source: (CMHC, 1995).

However, Eichler (1999) points out that all human activity is dependent on the biosphere and should be conceptualized as a sub-system within the biospheric system. This 'socosphere' is comprised of four independent, interrelated, overlapping, and co-equal sub-systems: governance, cultural, social, and economic (Fig. 2.2).

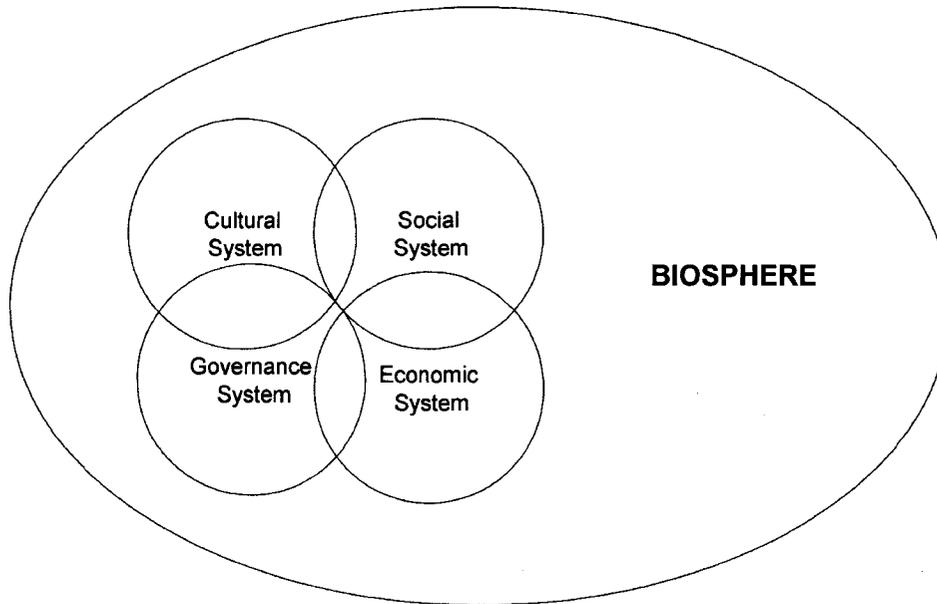


Fig. 2.2 An Alternative Model of Sustainability. Source: (Eichler, 1999).

Eichler's alternative view of sustainable development leads to a different conceptualization, whereby all the sub-systems are subject to the ecological imperative – to remain within the planetary biophysical carrying capacity. The other imperatives can be formulated as: (1) the economic imperative – to provide an adequate material standard of living subject to the ecological imperative, (2) the social imperative – to create or maintain social structures that promote social and gender equality and meet the diverse social needs of people in diverse settings, and to redistribute material acquisition and production rather than to focus on unsustainable development strategies, (3) the cultural imperative - to foster and maintain cultural and spiritual beliefs that recognize our dependence on the biosphere, our relationships with other humans, and that promote respect

for future and past generations. These values also need to transcend the belief that material accumulation is the road to human fulfillment, and (4) the governance imperative – to institute governance and effective decision-making structures, based on legitimacy and representativeness, that can implement strategies to ensure that the other imperatives are fulfilled. For sustainable development it is necessary that all of these imperatives are simultaneously reconciled.

In addition to providing a holistic approach to the biosphere and sociosphere, the concept of sustainable development shifts the focus from economic variables to the human dimension. In Sachs' (1999) view, 'whole' development must rest on the basic values of social equity, democracy and human rights, including the right to a pleasant and healthy environment. "Thus, development may be understood as an intentional, self-guided process of transformation and management of socio-economic structures, *directed at guaranteeing all people an opportunity to lead a full and rewarding life by providing them with decent livelihoods and by continuously improving their well-being*" (Sachs, 1999: 29, emphasis added). This emphasis on the human dimension of development is exemplified by Francois Perroux's concern for the whole man and all men: 'tout l'homme et tous les hommes' (cited in Sachs, 1999: 30). However, the concept of sustainable development has been the subject of much debate resulting in many different interpretations.

Representing a spectrum of views from 'techno-centric' to 'eco-centric', Sharpley (2000), Gowdy (1999), and Hunter (1997) traced these interpretations

of sustainable development to different theories of resource sustainability and environmental ethics (Table 2.1). According to Paehlke (1999), environmental sustainability can be thought of as having three dimensions with each being associated with central value clusters within environmentalism: (1) biodiversity, habitat, ecology and wilderness, (2) air and water quality (pollution), and (3) the conservation, preservation and management of renewable and non-renewable resources (resource sustainability). With respect to resource sustainability, the controversy surrounds the substitution of natural capital for manufactured capital in the production process and underlying environmental ethics (Gowdy, 1999; Paehlke, 1999).

With faith in technological improvements to solve environmental issues, a techno-centric approach emphasizes resource substitution whereby manufactured capital can be substituted for natural capital. Thus, maintenance of a constant stock of natural capital to provide for future generations is not essential. According to Gowdy (1999), the techno-centric view of sustainable development is anthropocentric in that its proponents do not recognize the intrinsic values that natural capital have in terms of life-supporting activities, biodiversity, physical and mental health, and natural services.

In contrast, Sharpley (Sharpley, 2000), Hunter (Hunter, 1997), Stabler (Stabler, 1997) and Gowdy (Gowdy, 1999) identified the eco-centric approach with a biocentric environmental ethic. Since natural capital is intrinsically valued, its proponents emphasize minimization of resource use, maintenance of a

constant capital stock and a no-growth economic policy. Table 2.3 illustrates the differences between these two approaches.

Table 2.3. Techno-Centric and Eco-Centric Sustainable Development

Techno-centric	Eco-centric
Anthropocentrism	Biocentrism
Utilitarian value of natural capital	Deep ecology approach Intrinsic value of natural capital
Resource exploitation	Resource preservation
Resource substitution	Minimization of resource use
Economic growth	No economic growth
Technical innovation	Reduced human population
Modernization theory	Alternative development

Source: Adapted from Hunter (1997).

According to Sharpley (2000), the spectrum of views, from techno-centric to eco-centric, can also be traced to differences in developmental paradigms (Table 2.2). According to proponents of 'modernization theory', development is achieved through the pursuit of economic growth and its concomitant 'trickle down' effect, whereby economic benefits are diffused by way of backward linkages within the local economy and job creation. This 'techno-centric' approach ignores a global political and economic perspective of development, which became the focus of subsequent 'dependency theory'. Advocates of 'dependency theory' view development within the framework of global relationships, whereby development of peripheral countries is conditioned by the

economic development and expansion of metropolitan centers (see also Dos Santos, 1972; Frank, 1972). This development paradigm was followed by the 'Neo-classical counter-revolution' that emphasized development through free trade, privatization of state enterprises and export-driven economic growth. This paradigm has been replaced by an 'alternative development' framework based on grass roots, endogenous development with a focus on self-reliance.

Table 2.4. A Model of Sustainable Development: Principles and Objectives.

Fundamental principles	Holistic approach: development and environmental issues integrated within a global social
	Futurity: focus on long-term capacity for continuance of the global ecosystem
	Equity: development that is fair and equitable and which provides opportunities for access to and use of resources for all members of societies, both in the present and future
Development objectives	Improvement of the quality of life for all people: education, life expectancy, opportunities to fulfill potential
	Satisfaction of basic needs; concentration on the nature of what is provided instead of income
	Self-reliance: political freedom and local decision-making for local needs
	Endogenous development
Sustainability objectives	Sustainable population levels
	Minimal depletion of non-renewable natural resources
	Sustainable use of renewable resources
	Pollution emissions within the assimilative capacity of the environment
Requirements for sustainable development	Adoption of a new social paradigm relevant to sustainable living
	International and national political and economic systems dedicated to equitable development and resource use
	Technological systems that can search continuously for new solutions to technical problems

Source: Sharpley (2000:8)

Despite these different interpretations, sustainable development as a concept has gained global support, so much so that various authors view it as a major social paradigm shift (Choi & Sirakaya, 2005; Mowfort & Munt, 2003; Sharpley, 2000). As such, it has also informed the movement towards more sustainable forms of tourism development.

2.4. SUSTAINABLE TOURISM DEVELOPMENT

Suffering the same fate as its parental paradigm, the concept of sustainable tourism development has been the subject of much controversy. Different approaches to sustainable tourism development can be viewed as belonging to two different categories: tourism-centric and embedded in sustainable development (Hunter, 1997).

A tourism-centric approach to sustainable tourism development focuses on sustaining the tourism system (Hunter, 1997) - a goal that depends on environmental protection and conservation, the provision of social and economic benefits to host populations, as well as a high-quality tourism experience (Gunn, 1997, 2002). According to Gunn (Gunn, 1997; 2002) and Inskip (1991), natural and cultural attractions constitute the primary reason for travel and are essential in providing a high-quality tourism experience. Likewise, sustaining the tourism system requires support by host populations. As indicated by tourism impact studies, tourism development can have negative socio-cultural effects in terms of changes in values and attitudes by host populations (see for instance Mathieson & Wall, 1982). As destination areas advance through various stages of

development, Butler (1980) proposed that support for tourism declines among host population resulting in increasingly negative perceptions of a destination. Thus, tourism depends on maintaining positive attitudes to development. This tourism-centric approach is exemplified by McIntyre's (1993: 11) definition of sustainable tourism, according to which sustainable tourism is a form of development that enhances "the quality of life of the host community, provides a high quality experience for the visitors and maintains the quality of the environment on which both the host community and the visitor depend".

An alternative view of sustainable tourism development views tourism within the broader context of sustainable development. A definition has been proposed by Butler (1996: 29) : "tourism which is developed and maintained in an area (community, environment) in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and wellbeing of other activities and processes". Closely related to sustainable development, this approach spans the same spectrum of perspectives, from 'techno-centric' (minimalist) to 'eco-centric' (comprehensive) developmental approaches (Fennell & Weaver, 2005; Hunter, 1997; Weaver, 2005).

However, Sharpley (2000) questioned the validity and applicability of the sustainable development concept within a tourism context, because of the failure of sustainable tourism development to meet the fundamental principles of sustainable development: holistic, equity and futurity (Table 2.4). Whereas

sustainable development is based on a holistic view of economy, society and the environment, sustainable tourism is usually not integrated with other economic sectors, or global, national or regional developmental strategies. For instance, in the Caribbean there is an overdependence on the tourism system instead of developmental strategies aimed at the promotion of other economic activities.

With respect to the futurity principle, there are similarities between sustainable development and sustainable tourism development in terms of resource sustainability. Since tourism depends on the preservation of environmental qualities to attract and satisfy tourists, resource protection is essential in sustaining the tourism system. However, rather than reflecting a long-term commitment to sustainable development, Sharpley (2000) argued that this position reflects a tourism-centric approach.

Furthermore, Sharpley (2000) argued that the tourism system depends on the flows and structure of the international tourism system that is dominated by metropolitan interests. Hence, sustainable tourism development does not meet the equity principle either. Even though other regions are growing as tourism-generating zones, the flow of the tourism system is dominated by Western Europe and North America (WTTC, 2007). Through vertical integration of hotels, airlines and tourism operations, transnational corporations dominate the industry resulting in expatriation of profits and high import costs. Because of the flow and structure of the tourism system, a significant portion of tourism revenue remains in tourist-generating zones where tourists pay for vacation packages, airline tickets and hotel accommodations even before reaching the destination zones

(see also Mowfort & Munt, 2003). In addition, poor backward linkages with other economic sectors in destination areas result in minimum economic benefits for host populations (see also Simpson & Wall, 1999). Thus, Mowfort and Munt (2003) concluded that sustainable tourism development can be viewed as sustaining the profits of the tourism industry, rather than contributing the economic welfare of host populations.

Based on substantial differences in underlying development paradigms, Sharpley (2000) also questioned the applicability of the sustainable development paradigm within a tourism context (see Table 2.4). With its foundation in modernization theory, tourism development in developing countries is promoted on the grounds of its purported contribution to economic growth (Sharpley, 2000). In contrast to the modernization paradigm, Sharpley (2000) argued that sustainable development defines development in a much broader social context, with emphasis on quality of life, human rights and human welfare development. Sustainable development is also the outcome of grassroots and endogenous development pathways, whereas tourism development is controlled by exogenous factors as a function of the international structure of the tourism system (Sharpley, 2000). Hence, tourism development is embedded in a globalized economy that reinforces dependency relationships (Britton, 1982; Mowfort & Munt, 2003) instead of being based on self-reliance. Thus, it is argued that we can not speak of sustainable tourism development within the context of sustainable development.

Because of the theoretical divide between sustainable development and sustainable tourism development, a tourism-centric approach to sustainable tourism development will guide the present study. With respect to resource sustainability, minimization of resource use and maintenance of a constant natural capital stock are other principles that will provide direction for the present study.

2.5. ECOTOURISM

As an outcome of global economic restructuring, development of new forms of tourism can be traced to the emergence of a service sector economy in the Western World (Mowfort & Munt, 2003) and the consequent emergence of new middle classes with distinctive lifestyles and tastes (Bourdieu, 1984; Mowfort & Munt, 2003). With the shift to a global environmental paradigm, sustainable development, contemporary tourists also seek more responsible, individualized, unpackaged and flexible forms of tourism (Mowfort & Munt, 2003). These changes have resulted in the emergence of tourism niche markets, including ecotourism.

To capitalize on this growing market segment, the Government of the Commonwealth of the Bahamas launched the Ecotourism Program in 1992. According to The International Ecotourism Society (TIES), ecotourism is “responsible travel to natural areas that conserves the environment and improves the well-being of local people” (TIES, 2005). Although there are many other interpretations of ecotourism, it is commonly accepted that this form of tourism

rests on three core criteria: (1) nature-based, (2) learning and education, (3) management practices that adhere to the principles of ecological, economic and socio-cultural sustainability (Ceballos-Lascurain, 1996; Fennell & Weaver, 2005; Weaver, 2005). Recently, the focus on nature-based attractions has been extended to ancillary cultural attractions that are important to interpreting the human influences and interrelationships with the natural landscape (Fennell & Weaver, 2005; Weaver, 2005; www.uneptie.org).

With an emphasis on the conservation and protection of natural areas, ecotourism has been viewed as a universal panacea in comparison to conventional tourism. However, it has also been criticized on the grounds that it barely meets the goals of sustainable tourism development (Cater, 1993; Fennell & Weaver, 2005). Similar to conventional tourism, ecotourism is dependent on the same global structure, as travel arrangements are made in tourist generating areas and tourism operations are owned by multinational corporations (Cater, 1993; Mowfort & Munt, 2003). As tourism development in the Third World relies on foreign investments, distribution of economic benefits to host populations is minimal (Cater, 1993). In terms of environmental conservation, Cater argued that because ecotourism encourages tourism to particularly sensitive areas, where foreign intrusion may have serious ecological or socio-cultural consequences, it may be equally destructive as mass tourism.

To conclude, some ecotourism practices may be viewed as economically and environmentally unsustainable according to sustainable development principles (Eichler, 1999; Sharpley, 2000). As a niche market, it differs from other

forms of sustainable tourism in that it focuses primarily on nature-based attractions and education. The relationships between sustainable development, sustainable tourism development and ecotourism are represented in Fig. 2.3.

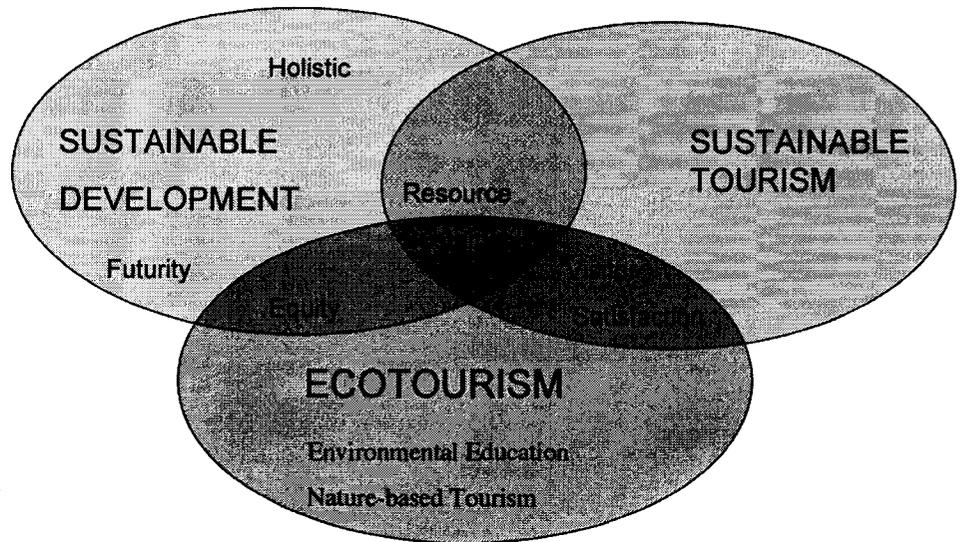


Fig. 2.3. Sustainable Development and New Forms of Tourism.

2.6. CONCLUSION

Representing a global paradigm shift, sustainable development is an expression of contemporary Western ideology that has resulted in a demand for more responsible forms of tourism (Mowfort & Munt, 2003). Despite attempts by some tourism researchers to define sustainable tourism development within the context of sustainable development (Butler, 1996), a theoretical divide exists between these related concepts in terms of underlying development paradigms (Sharpley, 2000). Thus, for the purposes of this thesis, sustainable tourism is conceptualized as development that provides tourist satisfaction, improves the quality of life for the host population, and protects and conserves the environmental upon which both the host and tourist populations depend. In order to operationalize sustainable tourism, environmental planning and management frameworks have been developed within the related field of parks and recreation, providing a foundation for development of more tourism-specific planning methodologies. In Chapter 3, these planning methodologies are reviewed and compared to the Tourism Optimization Management Model (TOMM) based on their strengths, weaknesses and applicability.

3. ENVIRONMENTAL PLANNING AND MANAGEMENT FRAMEWORKS

3.1. INTRODUCTION

Numerous governments and tourism associations have formulated policies and strategic directions for implementation of sustainable tourism, but as of yet there exists no comprehensive tourism planning methodology. This section presents a review of environmental planning and management frameworks within wilderness, parks and recreation management, that provides an important background to the conceptual and theoretical evolution of planning within these fields. Similar to the fundamental challenges facing parks and recreation management, tourism planning needs to address issues of recreational use and resultant impacts on the environment. Hence, these methodologies also constitute the foundation of sustainable tourism planning upon which development of a particular tourism planning framework was based – the Tourism Optimization Management Model (TOMM). This section concludes with a description of this model, since it formed the basis for development of a new process model – the Sustainable Tourism Optimization Model (SUSTOM).

3.2. CARRYING CAPACITY

The concept of carrying capacity has been traced back to the 19th century when it was used within range and wildlife management to regulate the size of an animal population within a particular area based on a presumed linear relationship between population growth and the capacity of the environment to

support it (Price, 1999). Due to the popularity of national parks and wilderness areas in the United States following World War II, land use planners and managers within the U.S Forest Service turned to the concept of carrying capacity as a planning and management framework. With an initial focus on regulating the amount of visitors to specific areas in order to mitigate biophysical impacts, the concept later evolved into a multidimensional and complex planning and management system with different parameters (Lindberg, McCool, & Stankey, 1997; McCool & Lime, 2001). In an early attempt to evaluate the concept, Wagar (1964) observed that the level of recreational use not only has an impact on the biophysical environment, but also on visitor satisfaction related to perceptions of crowding. Based on further research and empirical findings, the concept of recreational carrying capacity has been broadened to include other dimensions : (1) ecological carrying capacity (2) physical carrying capacity, (3) facilities carrying capacity, and (4) social carrying capacity (USDA).

Due to a growing concern with negative impacts from tourism development, the concept of carrying capacity has been promoted as an effective planning and management framework within the tourism literature (Gunn, 2002; Inskeep, 1991; Mathieson & Wall, 1982; Mowfort & Munt, 2003; Pearce, 1989). Mathieson and Wall defined the concept as: "carrying capacity is the maximum number of people who can use a site without an unacceptable alteration in the physical environment and without an unacceptable decline in the quality of the experience gained by visitors" (1982: 21). Due to greater complexities within the field of tourism with respect to negative impacts on host populations, local

economic functions, and cultural practices and norms (see for instance Dyer et al., 2003; Mathieson & Wall, 1982; Mbaiwa, 2005; Pattullo, 2005; Simpson & Wall, 1999), the tourism carrying concept was later extended to include five dimensions (see for instance Buckley, 1999; O'Reilly, 1986; Pearce, 1989) : (1) physical carrying capacity – relates to impacts on physical resources, such as facilities, infrastructure, and accommodations, (2) environmental or ecological carrying capacity – relates to effects on water, soils, plants, animals, and air, (3) psychological or perceptual carrying capacity – relates to the quality of the tourist experience, (4) economic carrying capacity – relates to displacement of local economic functions in favour of those catering to the tourism system, and (5) social carrying capacity – relates to attitudes of the host population affecting the quality of the tourist experience. In various reviews of carrying capacity, it has been criticized based on methodological, conceptual and theoretical grounds. Due to the multi-dimensional nature of the concept, numerous authors point to the complexity of the planning framework and the ensuing difficulties involved in implementation (Lindberg & McCool, 1998; Lindberg et al., 1997; Mathieson & Wall, 1982; McCool & Lime, 2001; O'Reilly, 1986). A lack of specificity with respect to management goals (Lindberg et al., 1997; McCool & Lime, 2001) and measurement and detection of thresholds or limits (Hunter & Green, 1995; Price, 1999) pose serious limitations.

In terms of conceptual issues, McCool and Lime (2001) suggested that limiting user levels is not the only management strategy to control resource impacts and visitor experiences, but there are more effective means to

accomplish these objectives. In an assessment of biophysical and social impacts, Cole (1987) observed that resource impacts are not only dependent on user levels, but visitor behaviour, types of recreational use, and environmental conditions. Moreover, visitors have different expectations and motivations, resulting in differences in visitor satisfaction related to crowding (Cole, 1987). Thus, there is no direct linear relationship between numerical carrying capacity and visitor impacts on the biophysical or social environments (Hof & Lime, 1997; McCool & Lime, 2001).

Furthermore, the same area can have multiple carrying capacities, because of differences in management objectives and visitor satisfaction as a function of differences in visitor expectations between user groups (Lindberg & McCool, 1998; Lindberg et al., 1997; McCool & Lime, 2001). Thus, identification of management goals and desired conditions ultimately becomes a negotiation of complex ethical, political and social issues (Buckley, 1999; Lindberg & McCool, 1998; Lindberg et al., 1997; McCool & Lime, 2001; Price, 1999; Seidl & Tisdell, 1999). Hence, "it is shown that carrying capacity, where human activity or human aims are involved, is a complex normative concept influenced by ecological dynamics, human values and aims, institutional settings and management practices" (Seidl & Tisdell, 1999: 395).

Other authors have criticized the concept based on its theoretical foundations, that is Malthus' theory of population growth and its mathematical expression in the logistic growth curve, and its underlying assumptions (McCool & Lime, 2001; Price, 1999; Seidl & Tisdell, 1999). In his *Essay on the Principle of*

Population, Malthus (1798) proposed that human population growth is regulated by environmental constraints, primarily the availability of food. Because the rate of population growth was assumed to exceed the growth in food production, a shortage of food is a constant environmental constraint affecting the human condition. Thus, human population growth is regulated by 'vices and misery', such as poverty and famine (Malthus, 1798). This theory was later translated into an equation of logistic growth, the Verhulst-Pearl equation, where the constant K refers to environmental limits to growth. Odum (1953) later expressed this mathematical formula graphically in the logistic growth curve, where he referred to the constant K as the carrying capacity (recited in Carey, 1993; Price, 1999; Seidl & Tisdell, 1999). There are three assumptions underlying Malthus' theory and the logistic growth curve: (1) human population growth is exponential, (2) food production is the only limiting factor to population growth, and (3) food production can only be increased linearly. However, observations do not support any of these assumptions, since human population growth has been relatively stable, other than for brief periods of time, and there are many environmental constraints regulating population growth (Seidl & Tisdell, 1999). The theory is also based on the assumption of a relatively static environment, but research has demonstrated that it is best described as a stochastically dynamic system (Carey, 1993; Price, 1999; Seidl & Tisdell, 1999). Corroborating this observation within a tourism context, Martin and Uysal (1990) noted that tourism is a dynamic agent of change. Therefore, it is also difficult to infer causal relationships

between user levels and environmental impacts (Lindberg et al., 1997; McCool & Lime, 2001).

Due to the limitations of the carrying capacity concept, it has been replaced by a number of alternative environmental planning and management frameworks, such as the Limits of Acceptable Change (LAC) system, Visitor Impact Management (VIM), and Visitor Experience Resource Protection (VERP). As Buckley's (1999: 708) concluding comments suggest: "carrying capacity has served its purpose in focusing attention on relationships between visitor numbers, their activities, and environmental and social impacts in different ecosystems and circumstances. It is not, however, a concept which can be applied in rigorous analysis or in practical management. It should be consigned to well-earned oblivion".

3.3. LIMITS OF ACCEPTABLE CHANGE (LAC) FRAMEWORK

In the early 1980's, scientists within the U.S. Forest Service started to develop an alternative planning framework for parks and wilderness areas to protect resources and regulate recreational use – The Limits of Acceptable Change (LAC) system (McCool, Cole, Lucas, Petersen, & Frissell, 1985). Underlying this framework is the concept of 'limits of acceptable change', which can be traced back to earlier research by Frissell (1963) on campsites in the Boundary Waters Canoe Area. Looking at environmental impacts from recreational use, he concluded that any recreational use would result in degradation of the environment. Hence, impacts must be accepted, "but a limit

should be placed on the amount of change to be tolerated. When a site has reached this predetermined limit of deterioration, steps should be taken to prevent further adverse change” (Cole & Stankey, 1997: 6 ; Frissell, 1963). The LAC model is based on three core elements: (1) management objectives are defined as minimally acceptable conditions or ‘limits of acceptable change’ (2) standards or indicators are established for each condition based on monitoring data, and (3) management actions are based on whether these standards have been exceeded or not. Stankey and McCool made the distinction between factors, indicators and standards, with factors referring to “broad categories of issues or concerns” (such as visitor satisfaction). Indicators are elements that reflect the overall condition of the factor. “ Indicators are specific variables that singly, or in combination, are taken as indicative of the conditions of the overall opportunity class” or “factor”. “Standards are measurable aspects of indicators”, that “provide a base against which a particular condition can be judged as acceptable or not” (Stankey & McCool, 1990: 215-216). Within the LAC process, standards are expressed as minimally acceptable conditions and constitute the absolute limit to which those conditions are allowed to deteriorate until management steps are initiated (Cole & Stankey, 1997). This does not imply that restrictive actions can not be taken when managers observe deteriorating ecological or social conditions (Cole & Stankey, 1997). Hence, in comparison to recreational carrying capacity, LAC changes the emphasis from a means, establishing recreational use limits, to an end (McCool et al., 1985).

The LAC planning framework is comprised of a series of nine steps that help in defining desired conditions for an area, as well as management actions required to restore those conditions when standards have been exceeded. The steps include: (1) define issues and concerns, (2) define opportunity classes and zones, (3) select indicators and standards, (4) inventory resource and social conditions, (5) specify standards for resource and social conditions, (6) identify alternative opportunity classes, (7) identify management actions for each alternative, (8) evaluate and select alternatives, (9) implement actions and monitor conditions (McCool et al., 1985). The unique feature of the LAC process is the method whereby compromise is achieved between conflicting goals through the identification of limits of acceptable change. Within parks and recreation management, no recreational impacts and unrestricted recreational use are desired conditions and conflicting goals that the LAC process was developed to resolve by compromising these goals successively. Therefore, environmental impacts are initially compromised until standards have been exceeded, and thereafter recreational use is compromised (Cole & Stankey, 1997).

Since 1985, the LAC system has gained wide acceptance and applicability within planning and management of wilderness and protected areas. Within the U.S. National Parks and U.S. National Forest agencies, it has changed environmental management from a focus on recreational use limits to future outcomes, and an emphasis on greater specificity in the planning, monitoring and management phases (McCool & Cole, 1997). Within the field of tourism, Shaefer,

Anh, and Lee (2002) used the LAC process as a basis for research to exemplify a model of sustainable tourism development. Based on survey responses, differences in residents' perceptions of tourism development across three different communities in Texas served as the basis for designation of different Tourism Development Zones (TDZs) according to preferred levels of tourism development.

3.4. VISITOR IMPACT MANAGEMENT (VIM)

Based on the LAC planning system, in 1992 the U.S. National Parks Service started to develop the Visitor Impact Management (VIM) and Visitor Experience Resource Protection (VERP) frameworks to regulate user impacts on the national parks' resources and visitor experiences. Similar to LAC, the Visitor Impact Management (VIM) framework is concerned with managing resource impacts from recreational use and providing a high quality visitor experience within the national park system. As with LAC, monitoring and managing environmental and experiential conditions is based on establishing indicators and standards, expressed as 'limits of acceptable change' (Kuss, Graefe, & Vaske, 1990). Development of management strategies is geared to keeping visitor impacts within these limits, and is based on the results of a continuous monitoring process. When these limits have been exceeded, management actions are taken to mitigate recreational impacts (Kuss et al., 1990). VIM differs from LAC in that it places an emphasis on identification of potential causes of

environmental degradation, recognizing complex interrelationships between impact indicators and recreational use (Nilsen & Tayler, 1997).

Based on a synthesis of existing literature regarding the causal interrelationships between impacts on physical, ecological and social conditions, and recreational use, Kuss, Graefe and Vaske (1990: 1-2) identified five scientific management issues underlying visitor impact management:

1. Impact Interrelationships.

Visitor impacts on the environment can not be attributed to a single, predictable response, but depends on an interrelated set of indicators. Some impacts are more obvious and direct than others, but any indicator or combination of indicators can become the foundation for a visitor impact management program.

2. Use-Impact Relationships.

Impact indicators are related to the amount of recreational use a particular area is subjected to, but the strength of the relationship also depends on other factors. "Most impacts do not exhibit a direct linear relationship with user density" (Kuss et al., 1990: 2).

3. Varying Tolerance to Impacts.

One of the most important factors is "the inherent variation in tolerance among environments and user groups" (Kuss et al., 1990: 2). Some environments are more sensitive to recreational use than others, and species react differently to environmental disturbances (Kuss et al., 1990). Likewise, visitor expectations and experiences differ between recreational user groups,

such that some are willing to tolerate higher user densities than others (Cole, 1987; cited in McCool & Lime, 2001).

4. Activity-Specific Issues.

Environmental impacts are dependent on the type of recreational activity, as well as party size and behaviour.

5. Site-Specific Issues.

Temporal variations in recreational use affect environmental conditions differently at the same site.

These scientific management considerations provided the background for development of VIM. Moreover, Kuss, Graefe and Vaske (1990) formulated a set of fundamental management principles that demonstrate an understanding of issues and constraints that influence parks and wilderness management, and the logic and relationships underlying development of the visitor impact management process (Table 3.1)(Kuss et al., 1990).

Table 3.1. Visitor Impact Management Principles.

Principle 1.	The purpose of visitor impact management is to identify unacceptable changes occurring as a consequence of recreational use and to develop management strategies to restrict impacts to acceptable levels.
Principle 2.	Visitor impact management can be integrated with existing agency planning and management processes.
Principle 3.	Visitor impacts depend on complex and interrelated factors, and hence management should proceed on the basis of the best scientific understanding and situational information available. Any assessment of current impacts and recreational use depends on monitoring data, careful observations and an understanding of the most recent scientific research.
Principle 4.	Visitor impact management depends on specific management objectives that guide identification of environmental conditions to be achieved and recreational experiences to be provided.
Principle 5.	Assessment of environmental impacts relies on a comparison of selected indicators and standards, with actual conditions at designated locations and times.
Principle 6.	Management decisions intended to reduce impacts or maintain acceptable conditions require knowledge of the probable sources of and interrelationships between unacceptable impacts.
Principle 7.	To address visitor impacts, a wide range of alternative management strategies may be used.
Principle 8.	Visitor impact management should include a range of acceptable impact levels to accommodate the diversity of environments and experience opportunities present within any natural setting.

Source: Kuss, Graefe and Vaske (1990: 6-7).

The VIM planning framework involves a process developed to address fundamental issues in the management of environmental resources: (1) problem identification, (2) identification of causal factors resulting in unacceptable environmental impacts, (3) proposed management actions to mitigate unacceptable environmental impacts. The eight steps in the VIM planning

process include: (1) Assessment of existing data, (2) review of management objectives, (3) selection of key indicators, (4) selection of standards for each indicator, (5) comparison of standards with existing conditions, (6) identification of potential causal factors, (7) identification of management strategies, (8) implementation (Kuss et al., 1990; Nilsen & Tayler, 1997).

As mentioned above, VIM can be used as a complement to other planning and management processes and can be applied to a wide variety of recreational settings.

3.5. VISITOR EXPERIENCE RESOURCE PROTECTION (VERP)

The Visitor Experience Resource Protection (VERP) methodology was developed by Hof and Lime (1997) for the U.S. National Parks Service, with the objectives of managing resource impacts and the quality of the visitor experience. VERP can be implemented as part of the requisite General Management Plan (GMP) for each national park, or can be used to address site-specific impacts of visitor use within a specific unit. VERP contains nine steps, that can be performed sequentially although this is not a prerequisite: (1) assemble an interdisciplinary project team, (2) develop a public involvement strategy, (3) develop statements of park's purpose, significance and primary interpretive themes, (4) analyze park resource and visitor use, (5) describe a potential range of visitor experiences and resource conditions (potential prescriptive zones), (6) allocate prescriptive zones to specific locations within the park (prescriptive management zoning), (7) select indicators and standards for

each zone, and develop a monitoring program, (8) monitor resource and social indicators, (9) take management actions (Hof & Lime, 1997).

There are fundamental process differences between LAC and VERP, with a primary conceptual difference related to the initial stages of these methodologies: LAC is an 'issue-driven' framework, whereas VERP is a 'goal-driven' framework (Hof & Lime, 1997). In the initial phase of LAC, issues and opportunities are identified leading to an emphasis on managing and resolving conflicting goals between various stakeholders. Instead, within the VERP framework an emphasis on establishing goals for the park serves as the basis against which alternative opportunity classes and prescriptive zones are evaluated. "Goal-driven planning is based on a philosophy that issues are nothing more than obstacles that lie between existing conditions and future desired conditions. This implies that you must know what your desired state is (goals) before you can really understand the issues " (Hof & Lime, 1997: 30). A statement of the park's purpose and significance provides direction for all subsequent planning and management actions. Identification of resources and potential visitor experiences result in different alternatives that lead to different desired futures (prescriptive zones), and the allocation of these zones to different locations within a park (prescriptive management zones). Management zoning takes into account suitable types and levels of development, visitor experience opportunities, biophysical and social resource conditions, and management strategies and tactics. Thereafter, indicators and standards are developed for each prescriptive management zone.

All of the aforementioned planning methodologies, LAC, VIM and VERP, were developed to address issues of resource impacts from recreational use, carrying capacities, and the quality of the visitor experience in either national parks or wilderness settings (Hof & Lime, 1997; Kuss et al., 1990). As such, these frameworks allow for public participation in the planning and management processes (Hof & Lime, 1997; Kuss et al., 1990; McCool & Cole, 1997), and the resolution of conflicting goals between different stakeholders. Regarding application of LAC to planning of multiple-use recreation areas, Brunson (1997) questioned the ability of this methodology to address the complexity of resolving conflicts among many constituency groups - a concern that is equally valid for application within a tourism context. In addition, Hof and Lime (1997) also criticized LAC because of its issue-driven approach to planning. In order to develop a tourism planning model that specifically addresses the complexity of the tourism system and the interrelationships between different dimensions, Manidis Roberts Consultants developed the Tourism Optimization Management Model to guide planning for Kangaroo Island, Australia (SATC, 1996).

3.6. THE TOURISM OPTIMIZATION MANAGEMENT MODEL (TOMM)

As an adaptation of the 'Limits of Acceptable Change' (LAC) framework, TOMM is an integrated planning and management model that is concerned with optimization of desired outcomes, as opposed to conflict resolution and identification of minimally acceptable limits of change. The model is comprised of three parts: (1) context analysis, (2) TOMM monitoring program, and (3) TOMM

management response program (Fig. 3.1). The context analysis is used to assess current conditions in a particular destination, including external, supply and demand factors. It also involves identification of current and potential issues, market trends and opportunities, community and tourist values. Resulting in identification of optimal conditions, the TOMM monitoring program measures achievement of those conditions against a set of indicators and specified standards. Thereafter, the TOMM management response program identifies problem areas and actions to be taken to address these problems.

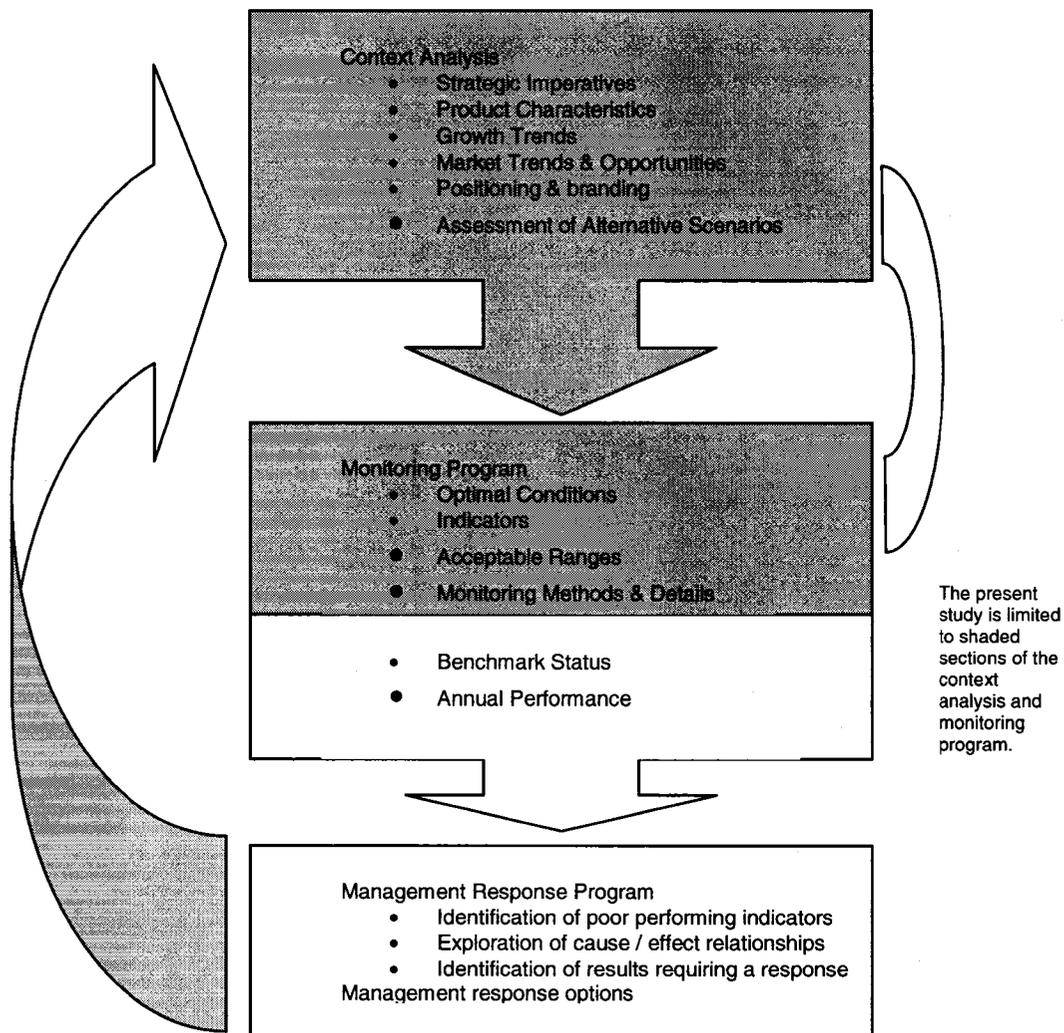


Figure 3.1. Tourism Optimization Management Model (SATC, 1996).

3.7. CONCLUSION

In the following comparison between LAC and its derivative planning frameworks, Visitor Impact Management (VIM) and Visitor Experience Resource Protection (VERP), it appeared that the conceptual and methodological strengths of each of these models had been incorporated into TOMM (Table 3.2).

Table 3.2. Comparison Of Frameworks.

Visitor Impact Management (VIM)

Developed by researchers working for the U.S National Parks and Conservation Association for use by the U.S. National Park Service. The process addresses three basic issues: problem conditions, potential causal factors, and potential management strategies.

Steps of the process

1. Conduct pre-assessment database review.
2. Review management objectives.
3. Select key indicators.
4. Select standards for key impact indicators.
5. Compare standards and existing conditions.
6. Identify probable cause of impacts.
7. Identify management strategies.
8. Implement.

Factors, Indicators and Standards

Physical impacts

- Soil density, pH, compaction, drainage
- Amount and depth of litter and dust
- Area of complete campsites
- Number of social trails
- Visible erosion

Biological Impacts

- Soil fauna and microfauna
- Ground cover density
- Diversity and composition of plant species
- Proportion of exotic plant species
- Wildlife species – diversity, abundance, sightings
- Presence or absence of indicator species
- Reproduction success

Social Impacts

- Number of encounters
- Visitor perception of crowding
- Visitor satisfaction
- Visitor reports of undesirable behaviour

Applications Best Suited for:

This is a flexible approach parallel to LAC that can be applied in a wide variety of settings. It employs a similar methodology to assess and identify existing impacts and particularly causes of these impacts.

Strengths: Process provides for a balanced use of scientific and judgmental considerations. It places heavy emphasis on understanding causal factors to identify management strategies.

Weaknesses: The process is written to address current conditions of impact, rather than to assess potential impacts.

Limits of Acceptable Change (LAC)

Developed by researchers working for the U.S. Forest Service in response to concerns about the management of recreation impacts. The process identifies appropriate and acceptable resource and social conditions and the actions needed to protect or achieve those conditions.

Steps of the process

1. Identify area concerns and issues.
2. Define and describe opportunity classes.
3. Select indicators of resource and social conditions.
4. Inventory existing resource and social conditions.
5. Specify standards for resource and social indicators for each opportunity class.
6. Identify alternative opportunity class allocations.
7. Identify management actions for each alternative.
8. Evaluate and select preferred alternatives.
9. Implement actions and monitor conditions.

Factors, Indicators and Standards

Factors will depend on issues identified in Step 1 above. Examples:

Resource:

- Trail conditions
- Campsite conditions
- Water quality
- Wildlife populations
- Range conditions
- Threatened/endangered species

Social:

- Solitude while traveling
- Campsite solitude
- Conflicts between visitors
- Noise

Standards are the measurable aspects of the indicators and are the basis for judging whether a condition is acceptable or not.

Applications Best Suited for:

The process is a good vehicle for deciding the most appropriate and acceptable resource and social conditions in wilderness areas. It has been applied to wild and scenic rivers, historic sites and tourism development areas.

Strengths: The final product is a strategic and tactical plan for the area based on defined limits of acceptable change for each opportunity class, with indicators that can be used to monitor ecological and social conditions.

Weaknesses: The process focuses on issues and concerns that guide subsequent data collection and analysis.

Source: Nilsen & Tayler (1997) cont.

Table 4.1. Cont'd.

Visitor Experience Resource Protection (VERP)

Created by the U.S. National Park Service, VERP is a process that contains prescription for desired future resource and social conditions, defining what levels of use are appropriate, where, when and why.

Steps of the Process

1. Assemble an interdisciplinary team.
2. Develop a public involvement strategy.
3. Develop statements of park purpose, significance and primary interpretive themes; identify planning mandates and constraints.
4. Analyze park resources and existing visitor use.
5. Describe a potential range of visitor experiences and resource conditions.
6. Allocate the potential zones to specific locations within the park.
7. Select indicators and specify standards for each zone, develop a monitoring plan.
8. Monitor resource and social indicators.
9. Take management actions.

Factors, Indicators, and Standards

The following factors are considered in the planning process:

- Park purpose statement
- Statements of park's significance
- Primary interpretation themes
- Resource values, constraints and sensitivities
- Visitor experience opportunities
- Resource attributes for visitor use
- Management zones

Applications Best Suited for

The VERP framework was conceived and designed to be a part of the National Park Service's general management planning process. This analytical, iterative process attempts to bring both management planning and operational planning together. The emphasis is on strategic decisions pertaining to identification of resource and social carrying capacities. The outcome is assignment of prescriptive zones with specification of desired future conditions and standards specified for each zone.

Strengths: VERP is a process that draws on the talents of an interdisciplinary team and is guided by park policy and purpose.

Weaknesses: Application of the process in other settings. No specifications or indicators to measure experiential factors.

Source: Nilsen & Tayler (1997).

Tourism Optimization Management Model (TOMM)

Created by Manidis Roberts Consultants for the South Australian Tourism Commission, TOMM is a process for identifying optimal conditions in terms of social, experiential, economic, marketing and ecological factors. The process addresses current and potential impacts from tourism development by specifying conditions that tourism should achieve.

Steps of the Process

Context Analysis

1. Identify community values.
2. Analyze the existing tourism product.
3. Assess growth trends, market trends & opportunities.
4. Analyze positioning and branding.
5. Identify and evaluate alternative tourism scenarios.

Monitoring Program

6. Define optimal conditions.
7. Define indicators.
8. Define standards for indicators.
9. Develop monitoring program.
10. Assess benchmark status.
11. Assess annual performance.
12. Predict performance.

Management Response

13. Identify poor performing indicators.
14. Instigate management response.

Factors, Indicators and Standards

Factors used depend on the results of the context analysis, but the following dimensions are considered in the planning process:

- Experiential
- Economic
- Marketing
- Ecological (resource conditions)
- Socio-cultural

Applications Best Suited for

Originally developed as a destination planning model, TOMM may be extended to national, regional and site planning with some modifications.

Strengths: TOMM was specifically developed for application within the tourism system, and addresses demand, supply and external factors. It is a goal-oriented framework that not only monitors performance of indicators in relation to specification of optimal conditions, but predicts performance. Hence, it is a future-oriented approach that bases management responses on identification of causal relationships between observed changes and tourism-induced activities.

Weaknesses: Not applied outside original context.

Reflecting the progress in environmental planning and management TOMM is conceptually similar to other methodologies such as Limits of Acceptable Change (LAC), Visitor Impact Management (VIM), and Visitor Experience Resource Protection (VERP). To resolve conflicts arising from multiple uses of a particular environment, all these planning frameworks depend on public participation and stakeholder collaboration as well as on an integrated planning and management team. Furthermore, all models address environmental impacts from recreational use, the quality of the visitor (tourist) experience, and issues of carrying capacities, and seek to limit impacts based on specific and measurable environmental and experiential indicators (Hof & Lime, 1997; Nilsen & Tayler, 1997). All planning methodologies specify a sequence of steps, including monitoring of existing conditions against specified indicators and standards, and developing management strategies, tactics and actions in relation to these indicators and standards (Hof & Lime, 1997). The latest scientific research provides the foundation for understanding environmental impacts, and the relationships between environmental impacts and recreational use (Nilsen & Tayler, 1997). Within the tourism industry, there is a wide body of tourism impact studies indicating positive and negative effects from tourism development, and specific conditions that foster one or the other. Last, as with other planning methodologies, TOMM is an integrated model that addresses complex relationships between multiple dimensions. However, as a last step in an evolutionary process, TOMM also differs from its predecessor – the Limits of Acceptable Change (LAC) framework – and its derivative planning methodologies – VIM and VERP.

In terms of conceptual differences, LAC is an issue-driven framework, whereas TOMM is a goal-driven framework. According to Nilsen and Tayler (1997), one of the weaknesses of the LAC framework is that identification of issues is the foundation for subsequent planning and management. In contrast, TOMM is a constructive approach whereby goals are expressed as optimal conditions for tourism planning and management to achieve. Thereby, TOMM is also addressing another source of criticism against LAC pertaining to the emphasis of the latter methodology on determining 'limits of acceptable change' for resource and social conditions as thresholds not to be exceeded (Brunson, 1997).

Although TOMM is methodologically similar, some of the strengths of the other environmental planning and management appears to have been incorporated into its process. Similar to Visitor Experience Resource Protection (VERP), TOMM provides a process for identification of resource and social carrying capacities, expressed as optimal conditions. As part of VERP, recreational opportunity classes are identified based on resource conditions, and these opportunity classes are then allocated to different prescriptive zones (opportunity classes) within a park. As a destination planning model, TOMM does not include this step in the planning process. However, based on the strengths of the Visitor Impact Management (VIM) framework, TOMM does include steps in the monitoring and management response programs for identification of poorly performing indicators and the underlying causal factors. As part of a participatory planning and management process, TOMM not only addresses current but potential impacts – a weakness in VIM. Thus, it appears that TOMM addresses the shortcomings of the other models, and incorporates their

strengths. Furthermore, TOMM was specifically developed to address the increased complexity of tourism planning and, consequently, the number of dimensions within this framework has been extended to include ecological, experiential, social, economic and marketing factors.

Because of the apparent strengths of TOMM as a destination planning methodology in comparison to other planning frameworks, it was chosen as an appropriate model for application on Abaco Island.

4. APPLICATION AND MODIFICATION OF THE TOURISM OPTIMIZATION MANAGEMENT MODEL (TOMM)

4.1. INTRODUCTION

In order to evaluate and modify TOMM, the model was applied to a proposed resort on Abaco Island, the Bahamas (Fig. 3.1). The Abacos are a group of islands and cays that form a chain from Walker's Cay in the north to Hole-in-the-Wall in the south. The five most important inhabited cays are Walker's Cay, Green Turtle Cay, Man-O-War Cay, Elbow Cay, and Great Guana Cay. From north to south the settlements on the main island include Crown Haven, Fox Town, Mount Hope, Wood Cay, Cedar Harbour, Cooper's Town, Fire Road, Black Wood, Treasure Cay, Murphy Town, Dundas Town, Marsh Harbour (the Capital), Little Harbour, Cherokee Sound, Casuarina Point, Bahama Palm Shores, Crossing Rock and Sandy Point (BMOT, 2005a). Until 1997, the southern communities were only accessible by boat, but the Great Abaco Highway now connects this part to the mainland. The proposed resort is located on a 400-acre property situated between the Atlantic Ocean and the Caribbean Sea. The Atlantic coast features a spectacular, white sandy beach and fringe coral reefs that make it an ideal location for snorkeling, scuba diving, fishing, boating and sea kayaking. On the western side of the property, the Caribbean Sea features an extensive coastal wetland ideal for sea kayaking and bird watching.



Figure 4.1. Map of Abaco Island. Source (Abaco, 2006).

Crossing Rock, a traditional fishing village with a population of approximately 160 people, was the site for interviews with residents to understand characteristics that they value about their community.

4.2. APPLICATION, EVALUATION AND MODIFICATION OF TOMM

As application of TOMM proceeded, it became evident that modifications to the process were necessary due to certain deficiencies in the context analysis. These shortcomings were related to the scope of analysis of external factors influencing the tourism system, and a misconception of the terms 'tourism product' and, consequently, 'product characteristics'. The initial application of TOMM followed a sequence of steps as described in Figure 3.4, but was extended to other components of the tourism system as described in Fig.1.3. Modifications to TOMM resulted in a new process model – the Sustainable Tourism Optimization Model (SUSTOM)– that includes additional steps in the context analysis (Fig. 4.2). Details for each step are presented in sections 4.3 context analysis and 4.4 monitoring program.

The initial step in this modified process is a description of a tourism product or a product concept that is used to guide the subsequent inventory and analysis of the tourism system as part of the planning phase (Fig. 4.2). In this respect, the conceptual foundation of the modified model is similar to the Visitor Experience Resource Protection (VERP) framework in that a statement of the park's purpose, significance and primary interpretive themes is used to direct inventory and analysis of resources and visitor experiences. According to the philosophy underlying development of VERP, "you must know what your desired state is (goals) before you can really understand the issues" (Hof & Lime, 1997: 30).

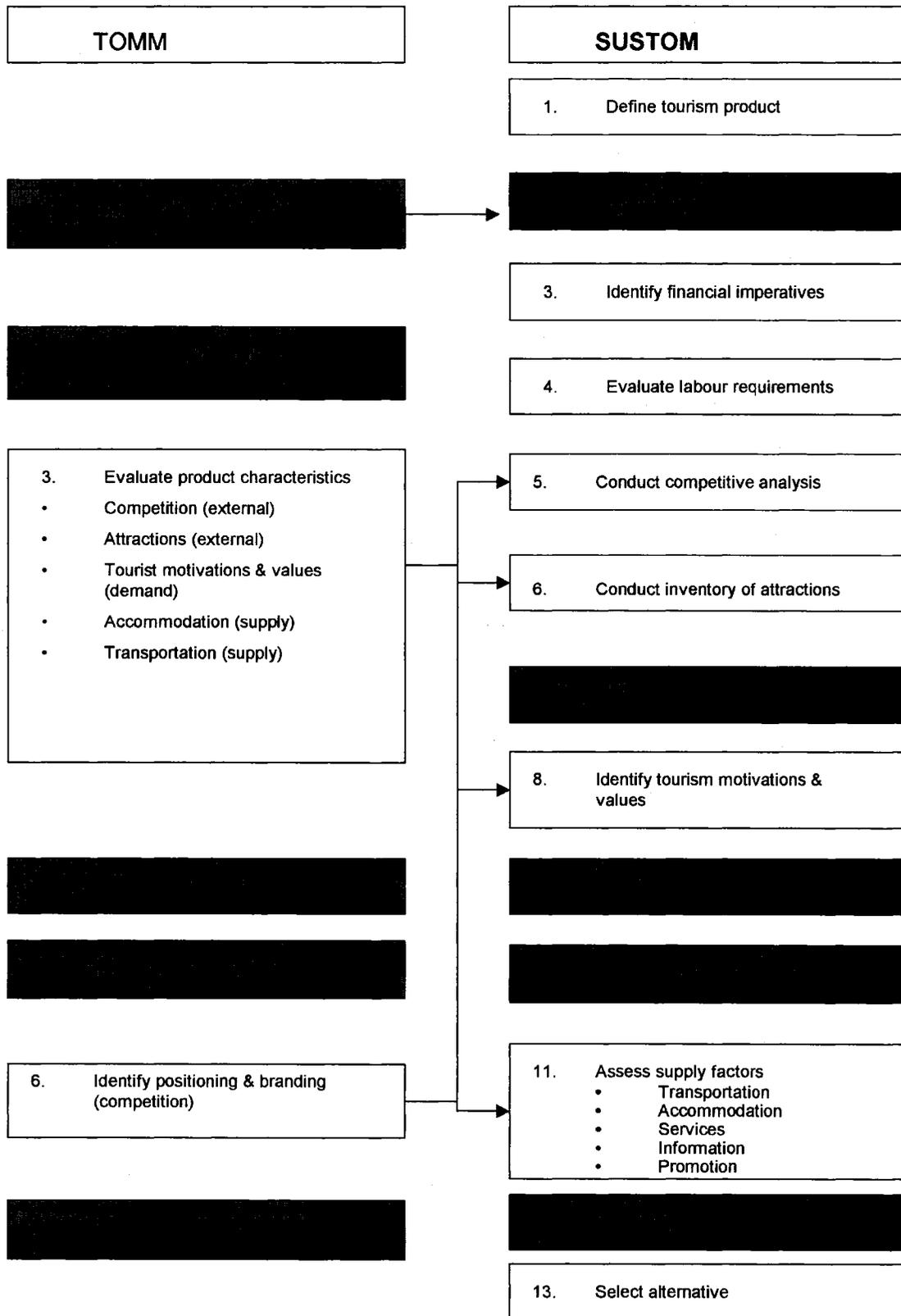


Fig. 4.2. Comparison of TOMM and SUSTOM.

The following six steps in the context analysis in SUSTOM pertain to the external factors of the tourism system. These factors are beyond the control of planners and developers, but nevertheless have a significant impact on the success of tourism planning (Gunn, 2002). Identical to TOMM, the second step in SUSTOM involves identification of strategic imperatives that influence tourism planning, such as, government policies, regulations and programs. However, the context analysis in SUSTOM has thereafter been extended to cover two additional, external factors of the tourism system in steps 3 and 4: finance and labour. With respect to planning for sustainable tourism development in developing countries, an assessment of financial requirements and access to credit were pertinent issues in meeting the socioeconomic principles of sustainable tourism calling for an improvement in the quality of life. With limited financial and human resources, an assessment of labour and the need for education and training are also important considerations in the planning phase. In the absence of skilled workers, education and training programs would need to be developed to fulfill the needs of the tourism industry. Subsequently, the context analysis proceeds to an analysis of the competition in step 5, to be followed by an inventory of natural and cultural attractions in step 6. These external factors had previously been covered under the 'Product Characteristics' section of TOMM. However, competition and attractions are not product characteristics, but external factors and should therefore be treated separately. In TOMM, these factors were only given minimal treatment, but are very important factors in the planning process. The competition highly influences demand factors, as it affects perceptions of the tourism product and price in relation to other

destinations. Furthermore, attractions are the primary reason for travel and highly influence tourist satisfaction. After an inventory of natural and cultural attractions, an assessment of community values follows in step 7 to ensure that these values are protected and reflected in development of the tourism product. This step corresponds to step 3 in TOMM, and concludes the analysis of external factors. According to Gunn, external factors also include organization and leadership/entrepreneurship (Fig. 1.3). However, these factors can be addressed in the analysis of labour, if the conception of this factor is extended to include management and leadership. Furthermore, entrepreneurship is also related to the access to credit in order to finance tourism development. Hence, these external factors did not receive separate treatment in SUSTOM.

Thereafter, the context analysis proceeds to an analysis of demand factors in the Sustainable Tourism Optimization Model (SUSTOM), including tourist motivations and values, market growth, market trends and opportunities. In TOMM, an analysis of tourist motivations and values is covered in step 3, under the 'Product Characteristics' section. However, tourist motivations and values are demand considerations and not product characteristics. Hence, a separate step was added in SUSTOM (step 8), to be followed by an assessment of market growth, market trends and opportunities in steps 9 and 10, corresponding to steps 4 and 5 in TOMM.

Subsequently, SUSTOM proceeds to an analysis of supply factors in step 11, including transportation, accommodation, services, information and promotion. Some of these factors, such as transportation and accommodation, had previously been covered in step 3 in TOMM, but to keep the planning process consistent with

the model of the tourism system, supply factors are considered separately in SUSTOM. Furthermore, three supply factors were added to the context analysis in SUSTOM: services, information and promotion. Following a synthesis of data from the preceding steps, the context analysis proceeds to development of alternative tourism scenarios in both SUSTOM and TOMM (steps 12 and 7 respectively), to be followed by a final step in SUSTOM that entails selection and elaboration of a particular tourism scenario. Lastly, two alternative scenarios for resort development at Long Beach were explored based on different growth projections and strategies. Selection of a particular alternative results in development of optimal conditions, indicators and standards to monitor tourism development. Because this was not a longitudinal study, application and evaluation of TOMM was limited to the planning phase and only proceeded to the initial steps of the monitoring program, culminating in specification of optimal conditions, indicators and acceptable ranges. The main stages of the application and methods for data collection are described in Table 4.1.

Table 4.1. Main Stages and Data Collection.

Main Stages	Methods for Data Collection
1. Describe tourism product or product concept.	Preliminary site inventory and analysis.
2. Identify strategic imperatives	Consult documents regarding global, regional and national policy initiatives and regulations affecting tourism development.
3. Identify financial imperatives	Consult government policies, regulations and programs.
4. Evaluate labour, education and training requirements	Results from interviews with tourism stakeholders (Appendix D).
5. Conduct a competitive analysis	Conduct content analysis of online travel agencies, tour operators and ecolodges listed in Travel + Leisure magazine. Conduct content analysis of official BMOT website.
6. Conduct an inventory of natural and cultural attractions	Fieldwork. Site inventory and analysis.
7. Assess community values	Conduct semi-structured interviews with residents of Crossing Rock. Consult BMOT study.
8. Identify tourism motivations and values	Conduct semi-structured interviews with tourists to explore tourist values. Consult regional tourism plans.
9. Evaluate growth trends	Consult BMOT tourism plan and statistical reports. Consult WTO and WTTC statistical reports
10. Identify market trends and opportunities	Conduct semi-structured interviews with key tourism stakeholders. Consult tourism plans and statistical reports.
11. Assess supply factors	Conduct content analysis of websites and fieldwork to assess accommodations, transportations, attractions, and services. Consult BMOT Business Plan Summary 2005 and other tourism planning documents.
12. Develop alternative scenarios	Synthesize and integrate information from the context analysis.
13. Select one alternative	Feasibility study.
14. Identify optimal conditions, indicators and acceptable ranges for resort development	Site analysis, conceptual design, and existing monitoring data.

The application and modification of TOMM was based on an understanding of the limited resources available for tourism planning and management on Abaco Island. Therefore, application of the model considered ease of application, availability of local resources, and cost-effectiveness that would necessitate a gradual transfer of knowledge and training to local residents and organizations in terms of on-going monitoring programs. In the following section 4.3 context analysis, details of the application of SUSTOM to resort development on Abaco Island are provided.

4.3. CONTEXT ANALYSIS

4.3.1 TOURISM PRODUCT

Based on a preliminary inventory of attractions, the application of SUSTOM commenced with a brief description of a potential tourism product. A tourism product can be defined as “anything that can be offered to a market for attention, acquisition, use or consumption that might satisfy a need (includes physical object, services, persons, places, organizations and ideas)”. (SATC, 1996: 11). This includes a description of the target market and the supply factors necessary to satisfy the interests, activities and experiences sought by tourists (Gunn, 2002).

Because of the abundance of natural attractions in the area surrounding Long Beach, including beaches, coral reefs, and mangrove wetlands, development of a tourism product focused on the nature-based, adventure and ecotourism market segments. The natural resource base supports a range of interests and activities, including swimming, snorkeling, scuba diving, sea-kayaking, boating, bird watching,

and fishing. A tourism product concept could involve a combination of adventure and education by offering guided sea kayaking, snorkeling and scuba diving tours of the unique ecosystems surrounding Long Beach.

To increase the occupancy rate, and, hence, the ability of the resort to support a range of services including bars, restaurants and shops, the tourism product was conceived of as a multi-purpose resort with a number of ownership options, including vacation rentals, fractional and full ownership (Fig. 4.3). Because short-term guests at the resort could be viewed as potential buyers of vacation properties, the study focused on this market segment. The 400-acre property was pre-approved for 464 units that would become part of a rental pool.

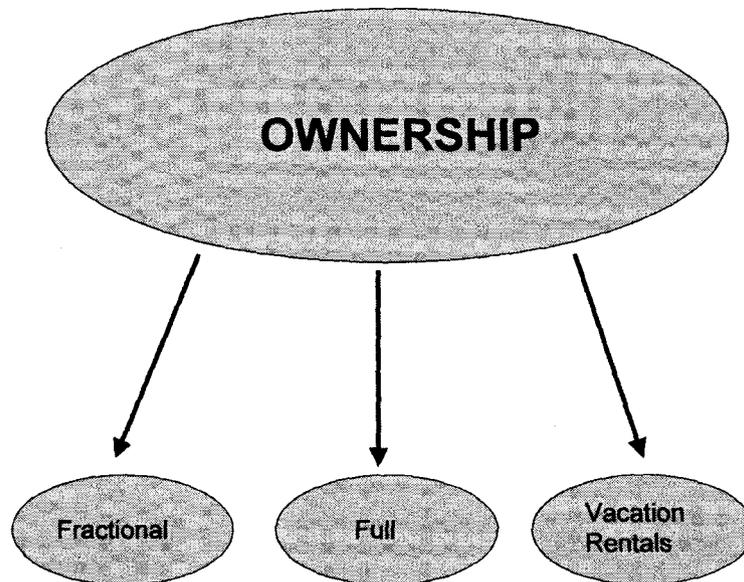


Fig. 4.3. Accommodation Classification.

Based on this brief description of a product concept, the context analysis commenced with an analysis of external factors that influence tourism development on Abaco Island.

4.3.2. EXTERNAL FACTORS

4.3.2.1 GOVERNMENT: POLICIES, PROGRAMS AND REGULATIONS

To provide a context for application of TOMM, the study began with considering global, regional and national strategic imperatives that may influence tourism planning on Abaco Island. A strategic imperative can be defined as “existing policy and planning directions likely to influence the current and future state of affairs” (SATC, 1996: 10). From a global perspective, the most important strategic direction influencing tourism planning is the paradigm shift to sustainable development and sustainable tourism as identified in *Agenda 21 for the Travel and Tourism Industry: Towards Environmentally Sustainable Development* (WTTC, 2006). As the dominant economic sector worldwide, Agenda 21 identifies a principal role for the travel and tourism industry in the implementation of sustainable development leading to “management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems” (WTTC, 2006: 30). It identifies priority areas for governments and trade organizations that will result in systems, procedures, and actions necessary for implementation of sustainable tourism development, including tourism planning and development of sustainability indicators. In this respect, it directly relates to

development and application of tourism planning methodologies such as TOMM. Within the Caribbean region, the CTO has adopted these policies and directions in its own strategic policy initiatives, including the establishment of a regional sustainable tourism zone (CTO, 2000).

In 2005, the Government of the Commonwealth of the Bahamas initiated a number of policy and planning directives for implementation of sustainable development. Because of the fragile coastal ecosystems in the Bahamas and growing developmental pressures on the limited land base, water pollution, land degradation, destruction of wetlands and introduction of invasive species were important environmental issues. Recognizing the ecological, economic and social importance of the coastal zone in the Bahamas, the Bahamas Environment Science and Technology Commission (BEST) formulated a draft National Environmental Policy that established goals, objectives and principles for sustainable development with a heavy emphasis on community planning, environmental protection and conservation, environmental education, and improvements in the quality of life for Bahamian citizens (BEST, 2005a). These policy directives were later translated into specific legislative proposals that would influence resort development, including the following:

- The Environmental Planning and Protection Act of 2005
- The Pollution Control and Waste Management Regulations of 2005
- The Environmental Impact Assessment Regulations of 2005

The Environmental Planning and Protection Act of 2005 established the Ministry of Environmental Planning and Protection with responsibilities for land use planning, environmental planning, protection, and monitoring of natural and cultural resources. With respect to planning for the sustainable management of all land resources of the Bahamas of whatever ownership, the Act stipulated a number of objectives with respect to coastal zone areas:

- a) “minimize the loss of life and property caused by improper development in flood-prone, storm surge, geological hazard, or erosion-prone areas and in areas likely to be affected by or vulnerable to sea level rise, land subsidence, or salt water intrusion, and by the destruction of natural protective features such as beaches, dunes, wetlands, and barrier islands or cays”;
- b) “improve, safeguard, and restore the quality of coastal waters and mangrove areas”;
- c) “ensure public access to beaches for recreational purposes”;
- d) “assist planning for the conservation and management of living coastal and marine resources” (BEST, 2005b§ 10.2).

The Pollution Control and Waste Management Regulations of 2005 regulate the disposal of liquid wastes, including sewage, and affected resort development in the sense that the regulations prohibited the release of such substances, except under the following conditions: “The release is a properly treated effluent from a *properly sited*, designed and maintained septic system” (BEST, 2005c: §3.4, italics inserted).

Even though these proposals have not come into effect, planning for the resort proceeded under the dictates of environmental stewardship and good corporate citizenry by incorporating measures to satisfy these objectives. Accordingly, the following guidelines were incorporated in planning for the resort: (1) establish a setback limit of x meters above mean sea level below which any permanent residential or commercial structures were to be prohibited due to storm surges based on historical data and projections of sea level increase for the Bahamas, (2) no disturbance or removal of vegetation from the dunes and the beach, and (3) a prohibition on the siting of septic systems in proximity to the coastal zone and any wetlands. Based on best development practices (Ewing, 1996), a 50-foot setback limit from wetlands covering less than five acres, and preservation of vegetative cover in other areas were other recommendations used to guide resort development.

4.3.2.2. FINANCE

Tourism development requires significant investments in transportation, infrastructure, services, information, and promotion in order to meet market demand (Gunn, 2002). With respect to resort development, this includes infrastructure requirements such as roads, water, hydro or alternative energy sources, and waste treatment facilities for black and grey water waste. Resort development also requires accommodations and other facilities that are typically very expensive to construct. Hence, tourism development requires financing from either public or private sources, and governments may provide various financial incentives to real estate developers.

To promote tourism development in the Bahamas, the government offer various financial incentives in 2007 under the Hotels Encouragement Act of 1973 and the Vacation Plan and Time-Sharing Act of 1999. With respect to the construction of hotels, vacation properties or time-sharing facilities, investors enjoy custom duty exemptions on materials required for construction, equipping and furnishing, in addition to the right to import the construction plant.

4.3.2.3. LABOUR

The study then proceeded to analyze labour requirements and the availability of skilled labour for pre-construction, construction and operation of the Long Beach resort. Based on interviews with tourism stakeholders (Appendix D), the lack of skilled and educated labour in the hospitality industry was a commonly identified concern. This lack of skilled labour included guest services, front-desk and management positions. According to an interview with a key informant, Jens Nielsen, for pre-construction and construction, skilled labour is available on Abaco Island, but there is a need to import construction managers and hospitality employees.

4.3.2.4. COMPETITION

In the absence of a tourism plan for Abaco Island, the study continued with an analysis of the competition at the global, regional and local levels, taking into account three different factors: the product offering (attractions, activities, accommodations, facilities), price, positioning and branding.

Global Destinations

In order to analyze competition globally, a content analysis was conducted of online travel agencies and tour operators with trips originating from Toronto, Canada, and London, United Kingdom, since the majority of tourists to the Bahamas come from these tourist-generating zones (see §3.3.2). For the traditional 'sun, sand and sea' tourism product, Conquest Vacations and Thompson Travel were used to research global destinations with departure date on April 7, 2007 and duration of seven days (Table 4.2). Vacation packages to these areas ranged from \$1,300.00 CAD to \$2,100.00 CAD, with the price depending on the star ratings of the hotels and the types of rooms available.

As beach-based vacations, these destinations are developed around spectacular natural attractions: beautiful beaches; crystal-clear waters; lush vegetation; and mountainous terrain. Most of the resort areas offer activities including snorkeling, scuba diving, sport fishing, trekking, water sports and, occasionally, golf and tennis. In addition, destinations such as Aruba, Bahamas, Santo Domingo, Cancun, Los Cabos, the Mayan Riviera, Puerto Vallarta, Vallarta Nayarit and Montego Bay, are also known for their cultural resources. As Table 4.2 illustrates, Abaco Island experiences intense competition with respect to the traditional 'sun, sand and sea' tourism product. Because of little product differentiation, this market is susceptible to price competition with tourists having little loyalty to specific destinations. Development of an ecotourism product would differentiate the resort at Long Beach and warrant premium pricing.

Table 4. 2. Competitive Analysis of Global Destinations.

DESTINATION	Natural Attractions	Cultural Attractions	Activities
ASIA			
Maldives	√		B, SD, WS
Sri Lanka	√		B, WS
Thailand			
Krabi	√		B, WS
Phuket	√		B, WS
CARIBBEAN			
Aruba		√	AG, B, BO, G, F, SD, SI, WS
Bahamas: Nassau		√	AG, B, BO, G, F, SD, SI, WS
Barbados	√	√	AG, B, BO, G, F, SD, SI, WS
Cuba			
Cayo Coco/Cayo Guillermo	√		B, BI, BO, WS
Varadero	√		B, G, SD, WS
Guardalavaca/Holguin	√	√	B, SI, WS
Havana	√	√	AG, B, SI, WS
Dominican Republic			
Punta Cana	√		B, SD, WS
Puerto Plata	√	√	AG, B, SI, WS
Santo Domingo	√	√	AG, B, SI, WS
Jamaica: Montego Bay		√	AG, B, SD, SI, WS
Mexico			
Cancun	√	√	AG, B, SD, SI, WS
Huatulco	√	√	AG, B, BO, SI, T, WS
Ixtapa	√		B, F, G
Los Cabos	√	√	B, F, G, SI
Mayan Riviera	√	√	AG, B, G, SI, WS
Vallarta Nayarit	√		B, WS,
Puerto Vallarta	√	√	AG, B, SI, WS
CENTRAL/SOUTH AMERICA			
Costa Rica: Liberia	√	√	AG, B, BI, T, WS
Honduras			
La Ceiba	√	√	B, BI, T, WS
Roatan	√		B, SD, WS

Source: Thompson Travel and Conquest Vacations.

Key: AG -Artisans and Galleries, B – Beaches, BI – Bird Watching, BO – Boating/Sailing, G – Golf, F – Fishing, K – Kayaking, SD – Scuba diving/Snorkeling, SI – Sight Seeing, T – Trekking, WS – Water sports.

In terms of competitive advantages, the Abaconian tourism product relies on a proximity advantage to the U.S.A and Canada - the largest tourist-generating

zones (Table 4.9), a stable local political climate, established brand recognition (BMOT, 2005b), diversity of tourism experiences, untouched natural beauty and solitude, hospitable Abaconian people (Appendices A,B, C, and E), and an 'off-the-beaten-path' destination for families (Appendices C and D). However, Abaco Island is a relatively expensive and inaccessible destination; international airlines only depart from Nassau, New Providence, and Freeport, Grand Bahama. From these arrival and departure points, Air Bahamas offer daily flights to Marsh Harbour on Abaco Island.

Ecolodges

Because of the opportunities for development of an ecotourism product for Abaco Island and the Long Beach resort, a competitive analysis of comparable global destinations was conducted. From a list compiled by Travel + Leisure Magazine in 2003 (travelandleisure.com, 2007), four ecolodges were selected based on three different criteria: (1) stylish architectural design incorporating sustainable design principles, (2) environmental protection, conservation and education, (3) environmental conditions similar to those found at Long Beach (travelandleisure.com, 2007). These ecolodges cater to travelers seeking an 'off-the-beaten-path' tourism experience in pristine natural environments, with one of the destinations also offering a cultural tourism product. Within the ecotourism market, the selected destinations target luxury tourists seeking a unique tourism experience that includes fine cuisine, spa treatments, luxurious accommodations and high

service quality. The following competitive analysis provides a short description of each ecolodge.

1. Couran Cove Island Resort, Gold Coast, Australia.

Couran Cove Island Resort is a first-class resort located on an island with 321 rooms either facing the ocean or the private marina. In terms of facilities, it has four restaurants, a day spa and fitness center, baby-sitting services, and conference and meeting rooms. An Environment Centre offers educational journeys related to the island's natural, cultural and built features. Price for a double room starts at \$141 USD, including some meals and activities

2. Bay of Fires Lodge, Tasmania, Australia.

The Bay of Fires Lodge is perched on a hilltop within Mount William National Park with spectacular views of the rugged coastline. Built according to sustainable design principles, two magnificent glass and wood pavilions provide maximum connection to the landscape. Mount William National Park is of special significance to the Aboriginal community and, because of its diverse vegetation, it is also a haven for wildlife. Guided by Tasmanian Aboriginals, tourists can explore both the beach environment and the abundance of wildlife in the lush woodlands as part of an extended trek. The price for a three-night trip with two nights at the lodge is \$918 USD per person, including all meals (BayOfFiresLodge, 2007).

3. Maho Bay Camps, St. John, U.S. Virgin Islands

Over the years, the Maho Bay Camp has not only won awards from the most prestigious travel and tourism magazines, but from the U.S. Environmental Protection Agency including the 2003 Environmental Quality Award. With spectacular views of the ocean and located among lush vegetation, the resort provides a unique and adventurous tourism experience based on its approach to sustainable tourism. The 114 tent-cottages are constructed of wooden frames and covered in translucent fabric, with each cottage being equipped with kitchen facilities, a twin bed, and a private deck. The resort also offers a full range of water sports, painting, jewelry making, ceramic, and glass blowing classes (MahoBay, 2007).

4. Tiamo Resort, South Andros Island, Bahamas

Located on pristine Andros Island in the Bahamas, with the third largest barrier reef in the world, Tiamo Resort had 18 private beach bungalows, each with beautiful views, a sunken bath tub, mahogany poster bed, seating area and patio. The award-winning resort offers fine cuisine, spa treatments, and a range of water sport activities. For the nature lover, Tiamo Resort also arranges for guided nature hikes. The price is \$245 USD a person per night, including all meals and activities (Tiamo, 2007).

Local destinations

A competitive analysis also required consideration of local resorts, since potential tourists to Abaco Island may contemplate alternative destinations as part of

their vacation purchasing decision. Because of the similarities to the Long Beach product, three resorts were selected: The Ritz-Carlton Abaco Club at Winding Bay, Abaco Beach Resort & Boat Harbour, Marsh Harbour, and the Bahama Beach Club, Treasure Cay.

1. The Ritz-Carlton Abaco Club, Winding Bay

Located on 534 acres, the Ritz-Carlton Abaco Club is an exclusive tropical paradise with a beautiful, white sandy beach stretching for 20 kilometers. Targeting the luxury travel market, guests can enjoy the following amenities: business center and banquet rooms, spa fitness center, children's activity center, an equestrian center, golf, sport fishing, snorkeling, scuba diving, and other water sports. The resort offers Bahamian cuisine at the Club House and casual fare at the beach bar. In terms of accommodations, the club had 20 suites at the inn and 60 vacation/rental properties (www.ritzcarltonrealestate.com/landing/abaco). Potential members could rent any of the suites, but were thereafter required to fill out a Membership Proposal to join the Club. The Ritz-Carlton Abaco Club is only open to members and, hence, no rental rates were posted.

2. Abaco Beach Resort & Boat Harbour, Marsh Harbour

Located on 52 acres, the Abaco Beach Resort & Boat Harbour has 80 rooms, four suites, six two-bedroom cottages, a restaurant with two bars where guests can enjoy local entertainment and music. In addition, the resort also has business facilities and banquet rooms, and a 190-slip marina. Because of its location in Marsh Harbour,

local shops, art studios, restaurant and bars are only a short walk away. In terms of other amenities, there are two tennis courts, sea kayaks, Sunfish sail boats, and a full range of water sports available. Furthermore, arrangements can be made for fishing charters, scuba diving and snorkeling adventures. Daily rates range from \$255.00 USD for an ocean front room to \$725.00 USD for a deluxe ocean-view cottage (www.abacobeacchresort.com).

3. Bahama Beach Club, Treasure Cay

The Bahama Beach Club has 80 fully equipped two, three and four-bedroom luxury condominium suites facing a stunning beach and the Sea of Abaco. At the resort, the Island Bar and Grill offers Caribbean cuisine and within a short walk, there are more restaurants, shops and a grocery store. Activities include snorkeling, scuba diving, water skiing, sport fishing, tennis, volleyball, and golf. The Bahama Beach Club also has a 150-slip marina for yachts up to 140 feet and a freshwater pool. Condo rental rates: two bedrooms (\$350 S USD / night), three bedrooms (\$400/night) and four bedrooms (\$400)(www.bahamabeachclub.com)

Positioning And Branding

The study then identified positioning and branding as described in the Bahamas Ministry of Tourism Business Plan (BMOT, 2005b) and the official Bahamas Ministry of Tourism website. Positioning can be defined as: “a succinct statement that spells out how a region or operation wants to be known in the minds of the overall market, relative to its competitors” (SATC, 1996: 15). Positioning is a

marketing concept describing what an operator wants the market to think, feel, know or believe about their tourism product relative to the competition. The articulation of a positioning statement is based on points of differentiation and strength (SATC, 1996).

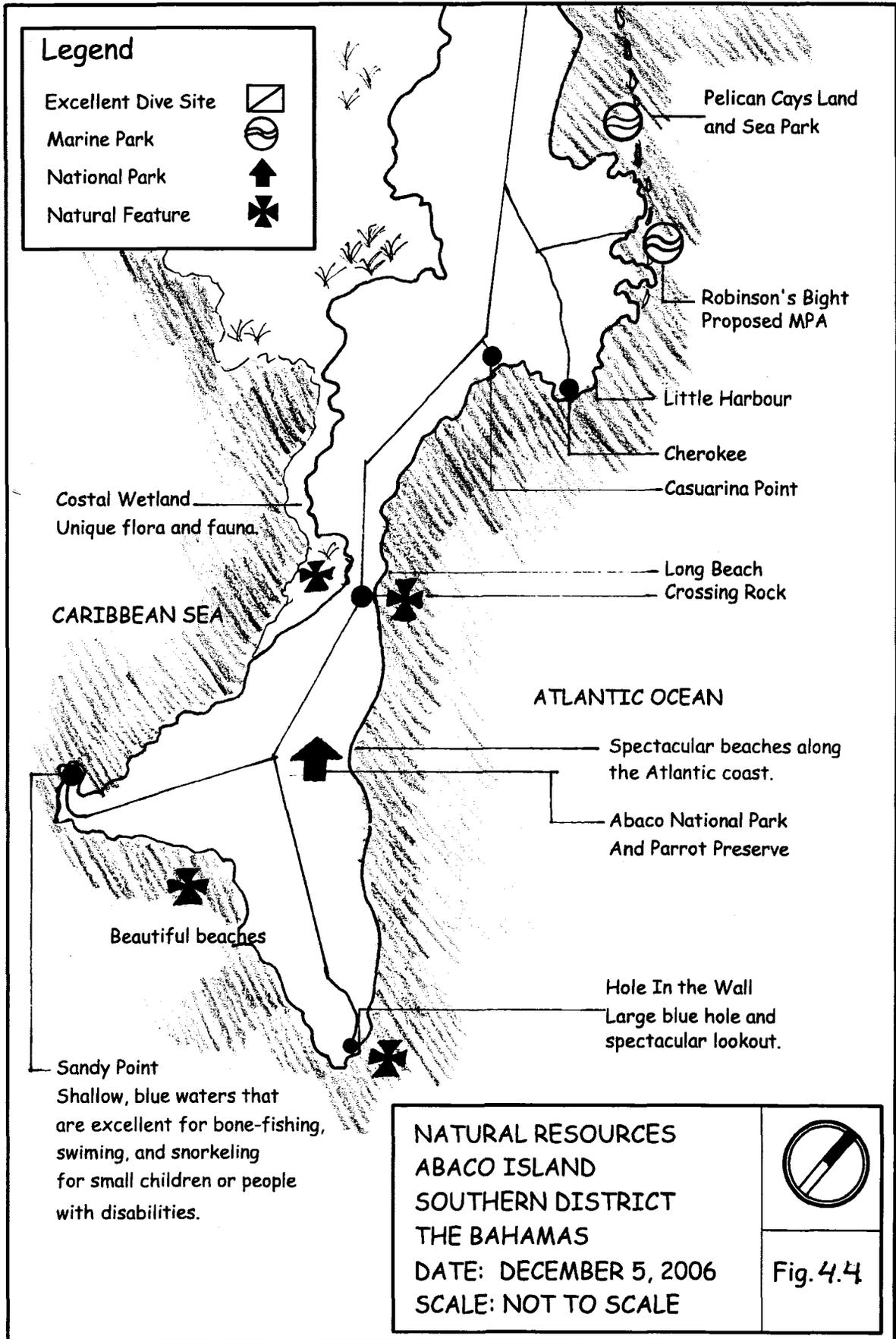
As part of a secluded get-away to a tropical paradise with stunning beaches, turquoise waters and coral reefs, the Abaco Islands are positioned as offering a diversity of tourism experiences (BMOT, 2007). Because of the protected waters of the Sea of Abaco and a 120-mile string of islands and cays, it is mainly a destination that caters to sea-goers (BMOT, 2007). However, based on interviews with tourism stakeholders (Appendix D), it was suggested that the tourism product be repositioned to emphasize the islands' rich natural and cultural heritage. As a testament to its Loyalist heritage, quaint towns and villages celebrate a thriving Bahamian culture and its diversity of hospitable people of various ethnic backgrounds. It is a place that has escaped industrialization and the rapid changes of the 20th Century. Comprised of multiple destinations of communities with distinct characters, the Abacos offer a multitude of experiences in a barefoot casual atmosphere. Tourism stakeholders also suggested that the destination zone could be repositioned as an off-the-beaten-path destination offering diverse tourism experiences for families. In order for this positioning to be effective, it needs to be linked to the branding of the tourism product.

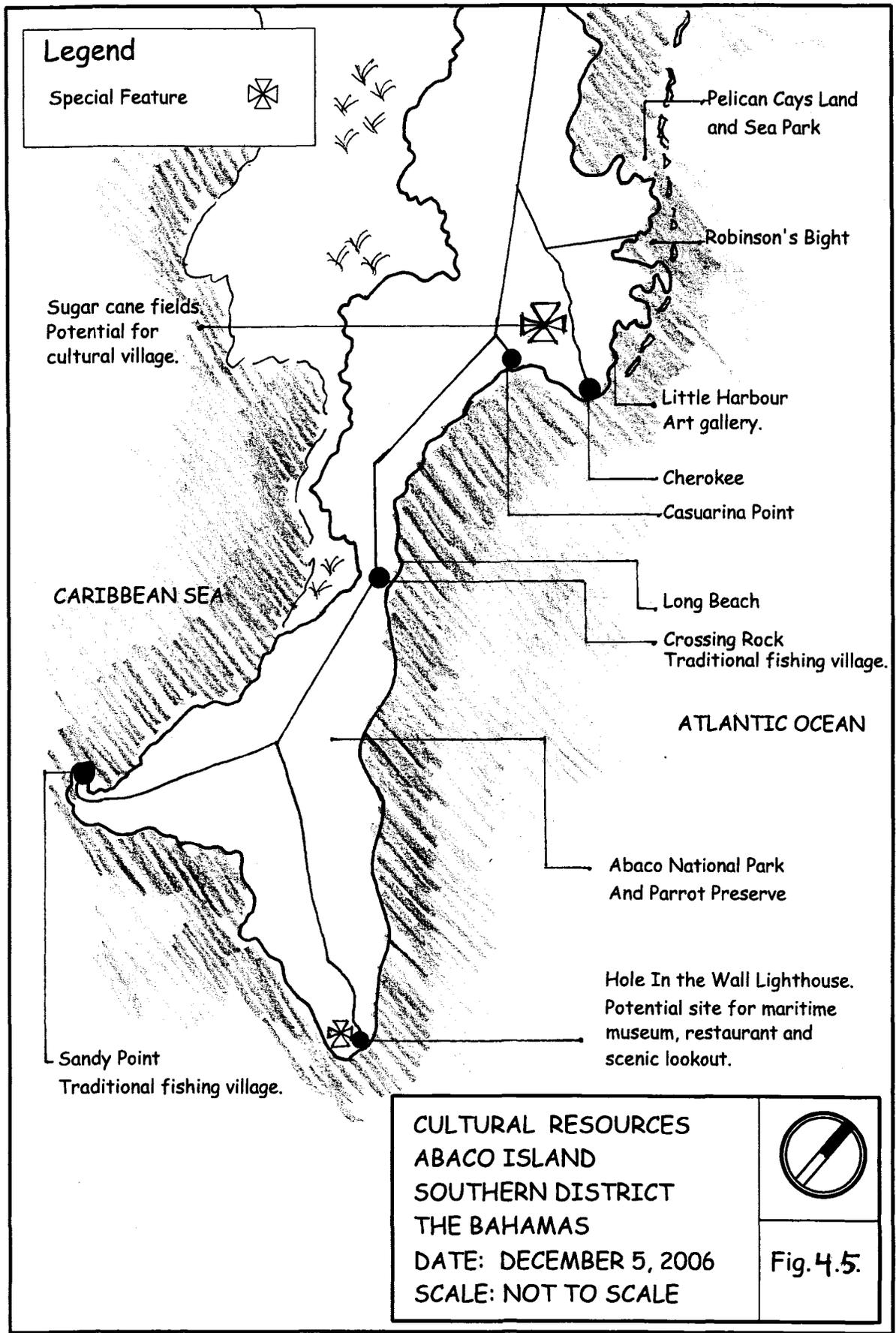
The study then proceeded to examine the branding statements of the islands of the Bahamas. "Branding can be defined as: the means to achieve recognition of a product" (SATC, 1996: 16). Branding is achieved through a symbol, term, name or

design, or a combination thereof (SATC, 1996: 16). Based on a content analysis of branding statements, branding of the islands of the Bahamas is linked to a diversity of experiences as expressed in the slogan “Experience the Bahamas”. With respect to the Out Islands, the seclusion, calmness and natural wonders of these islands are qualities emphasized in text, symbols and pictures as captured by the sentence “Witness how stimulating calm can be”. The same message is repeated for each Out Island with pictures of stunning coastal landscapes. In order for positioning and branding of the Abacos to be successful, a number of requirements need to be fulfilled: (1) protection of the coastal landscape, (2) development of a cultural heritage product, (3) low-impact development, and (4) low tourism-penetration index (the ratio of number of tourists to number of residents) to maintain the island’s secluded nature. These criteria, along with other results from the context analysis, formed the foundation for development of alternative scenarios for the resort at Long Beach, and ultimately identification of potential outcomes and indicators.

4.3.2.5. ATTRACTIONS: NATURAL AND CULTURAL RESOURCES

Attractions, such as natural and cultural resources, constitute the primary reason for travel and contribute to tourist satisfaction (Gunn, 1997; 2002). Natural resources refer to elements such as water, topography, wildlife, vegetation and climate. Cultural resources include prehistory, archeology, ethnicity, lore, and education; industry, trade, and professionalism; and sites of entertainment, health, religion and sports. To understand the Abaconian tourism assets an inventory of natural and cultural resources was conducted (Figures 4.4 and 4.5).





Natural attractions

Traditionally tourism in the Bahamas has focused on the natural resources of the islands, in particular its beautiful beaches, coral reefs and wildlife. To protect important terrestrial and aquatic habitats, the Bahamas National Trust established a number of National Parks and Marine Protected Areas (MPAs)(FE, 2007b), defined by the World Conservation Union (IUCN) as “any area of inter-tidal or sub-tidal terrain, together with its overlying waters and associated fauna, flora, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment” (IUCN, 2007: 4) . As part of a larger Marine Protected Reserves Network, there are several Sea Parks and MPAs in the Abacos, including the Pelican Cay Land and Sea Park, Walker’s Cay National Park and Fowl Cay Preserve (Fig. 4.4). The Pelican Cay Land and Sea Park encompasses 2,100 acres, including Sandy Cay, with underwater caves, an extensive coral reef, and exemplary terrestrial and aquatic species (FE, 2007b). It is easily accessible by boat from Little Harbour or Wilson City. In 2006, the Bahamas National Trust proposed the designation of another MPA in the area of Robinson’s Bight just west off Little Harbour (FE, 2007b).

In terms of National Parks, the Abaco National Park and Parrot Reserve is located on 20,500 acres of dryland pine forest that is home to the endangered Bahama Parrot and many other bird species (FE, 2007a). Situated in the southwestern part of Abaco Island, it can be easily reached from any point in the southern district of Abaco Island. In 2007, the park was not developed for tourists but only had a network of unmarked trails (Knowles, 2006)(Fig. 4.4).

With respect to other natural resources, the Bahamas has a distinct geological history with the Little and Grand Bahama Platforms composed of oolitic limestone (Sealey, 1985). This geological composition is responsible for distinct landforms and particular geological features on Abaco Island, such as caves, tunnels and blue holes (see Appendix F). These characteristics created an opportunity to develop a remarkable attraction complex whereby visitors could explore these features in an interactive manner. In addition, a unique adventure experience could include activities such as rock climbing, cave and tunnel explorations, and diving the blue holes in the ocean.

Blessed with a wonderful climate, this resource had been the foundation of the Caribbean tourism industry. The Bahamas has a sub-tropical to tropical maritime climate, with mean daily temperatures ranging from 70° F to 85° F. In the centrally located New Providence, mean daily temperatures range from 65°F to 82° F in the winter months, and from 67°F to 90°F in the summer months. Winds are predominantly easterly throughout the year, but with a tendency to become northeasterly from October to April, and southeasterly from May to September. Despite the hurricane season, average wind speeds did not exceed ten knots (Table 4.3).

Table 4.3. Climatological Means and Extremes for 1971-2000.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Highest Temperature	86.9	88.7	88.5	91.4	94.3	97.7	95.4	95.0	95.2	93.2	92.1	86.9
Mean Daily Maximum	77.7	77.9	79.9	82.2	85.4	87.8	89.6	89.7	88.8	85.9	82.0	79.2
Mean Temperature	70.8	70.6	72.3	74.7	77.9	80.8	83.2	82.3	81.5	78.9	75.7	71.8
Mean Daily Maximum	63.2	63.2	64.3	67.2	70.6	73.9	75.2	75.2	74.7	72.5	69.1	65.0
Lowest Temperature	41.4	45.8	46.0	48.6	55.5	59.0	64.2	64.4	59.5	56.0	51.0	41.5
Mean Humidity (%)	78	77	76	74	77	80	78	80	81	80	79	78
Wind speed Knots	8.1	8.3	8.8	8.3	7.7	6.9	6.9	6.5	6.2	7.2	8.2	8.1
Rainfall Inches	1.55	1.95	2.14	2.73	4.17	8.59	6.33	9.28	6.46	6.37	3.17	1.96

Source: Bahamas Ministry of Tourism (2005a).

The hurricane season is usually between June and November, and can wreak havoc on the islands of the Bahamas. In the period between 1886 to 1999 more than 50 cyclones of hurricane intensity passed within 125 statute miles from Nassau. Recently, Hurricanes Andrew (1992), Floyd (1999) and Frances (2003) devastated the islands. Based on data for the past 90 years, Nassau experienced hurricane conditions on average once in nine years. The Bahamian climate has been the foundation for 'sun, sand and sea' tourism to the Abacos, with its beautiful beaches and crystal-clear waters supporting a wide range of activities including snorkeling, boating, fishing, diving, sea kayaking and swimming.

Cultural attractions

In terms of cultural resources, the Abaco islands have a rich cultural heritage related to its Loyalist heritage and the diversity of ethnic groups that inhabited the islands as a function of migration. Hence, the cultural resources found in the Abacos belong to categories such as history and industry.

The distinctive character of the Abacos can be attributed to the exodus of the Loyalists immediately following the American Revolution in 1776, when they fled to the Bahamas to establish plantations (Sealey, 1985). While most occupied Grand Bahama Island, a small colony of refugees from New York inhabited the Abacos. Because of poor soil conditions, the plantation economy failed and most of these settlers moved away, with the exception of four hundred people. With its cultural heritage stemming from the influx of British Loyalists to the Abaco Islands, and the establishment of a plantation economy supported by African slaves, there are many cultural resources related to this past. This heritage is evident in the New England style architecture, plantations, churches, lighthouses and old settlements that are found throughout the islands. In the southern district, the Hole-in-the-Wall Lighthouse is an interesting cultural feature surrounded by a magnificent landscape (Fig. 4.5). As discovered in interviews with residents of Crossing Rock, the Church plays a very large role in community life (Appendix E). The residents of Crossing Rock and Sandy Point belong to three different Christian denominations: The Presbyterian Church, the Episcopal Church, and the Baptist Church. These churches are part of the living heritage of the island.

In terms of industry, sugar cane still grows on the island providing an opportunity to create an interpretive center highlighting the sugar manufacturing process, the social organization of the plantation economy and the cultural heritage of African slaves. In the southern district of Abaco Island, farmers grow sugar cane east of Cherokee (Fig. 4.5). Forming the foundation for development of a tourism product, the inventory and analysis of natural and cultural attractions led to identification of place characteristics that were particularly important to the community at Crossing Rock.

4.3.2.6. COMMUNITY

As one of the fundamental principles of sustainable tourism, community participation is seen as a critical element (Choi & Sirakaya, 2005; Gunn, 2002; Inskip, 1991; McIntyre, 1993) without which tourism planning may lose its legitimacy (Jamal & Getz, 1995). Protection of those values that define community life may create positive perceptions of and support for tourism development in a particular destination (Andereck & Vogt, 2000). This step in the application of TOMM focused on assessing community values in the village of Crossing Rock (Fig. 3.2). A value can be defined as “the fundamental things that residents care about and consider important about a destination community and the surrounding area” (SATC, 1996).

To gain insight into those characteristics of the environment that residents of Crossing Rock value, semi-structured interviews were conducted. Purposive sampling was used to recruit participants from different demographic groups who

were Bahamian citizens over the age of 18 years. The total sample size of nine residents represented approximately five percent of the total population of Crossing Rock. The results from the interviews suggest a number of common themes related to biophysical, social and cultural dimensions of the environment and overall character (Appendix E)(Table 4.4).

Table 4.4. Community Values.

Major Themes	Common Themes
Environmental	<ul style="list-style-type: none"> • A pristine natural environment with beautiful beaches and clear waters • Abundant wildlife • Good recreational opportunities
Social	<ul style="list-style-type: none"> • Relative solitude through a small population • Strong community bonds
Cultural	<ul style="list-style-type: none"> • A traditional fishing lifestyle
Overall Character	<ul style="list-style-type: none"> • A safe and crime-free environment • Peace and quiet

Source: Fieldwork presented in Appendix E.

As illustrated in Table 4.4, residents of Crossing Rock particularly valued certain aspects of the biophysical environment, such as a pristine natural environment, abundant wildlife and good recreational opportunities. While some residents valued wildlife intrinsically, two older residents appreciated the abundance of wildlife, especially fish and mollusks, as a readily available food source. Within the social realm, strong community bonds and relative solitude through a small population were other common themes identified. In terms of overall character, a safe and crime-free environment, and peace and quite were other common themes.

Identification of community values served to highlight the particular qualities of place that residents of Crossing Rock appreciate. In order to understand the qualities that attracted tourists to Abaco Island, the context analysis proceeded to an analysis of demand factors.

4.3.3. DEMAND FACTORS

All tourism planning activities are geared towards matching demand and supply factors, specifically matching tourists' interests and preferences for certain activities with natural and cultural attractions. Demand is also influenced by the motivation to travel, ability and willingness to pay, and the physical ability to travel (Gunn, 2002). In this section, tourist motivations for traveling to the Bahamas, values, growth trends, and market trends and opportunities were examined.

4.3.3.1. TOURIST MOTIVATIONS AND VALUES

In terms of tourist motivations, the results from the Visitor Exit Survey Special Edition 2001/2002 (BMOT, 2001)(Table 4.5) indicate that the primary reasons for a visit to the Bahamas were: beaches (11%), rest and relaxation (11%), climate (10%), never been here before (9%), hotel facilities (9%), and good package deals (8%). In contrast, visitors to the Out Islands, including the Abacos, reported the primary reasons as rest and relaxation (18%), sports (18%), had friends in the Bahamas (15%) climate (12%), never been here before (9%) and beaches (6%).

Table 4.5. Primary Reason for Visit to the Bahamas 2001-2002.

Reason	Bahamas	Nassau/ Paradise Island	Grand Bahama	Out Islands
Beaches	11%	11%	10%	6%
Rest & Relaxation	11%	11%	9%	18%
Climate	10%	11%	8%	12%
Never Been Here Before	9%	9%	9%	9%
Hotel Facilities	9%	12%	1%	0%
Good package deals	8%	6%	17%	0%
Best value for money	5%	3%	10%	0%
Had friends in the Bahamas	4%	4%	3%	15%
Sports	2%	1%	5%	18%

Source: Bahamas Ministry of Tourism (2001: 8).

These results indicate significant differences in the primary reasons for visiting different areas of the Bahamas. Grand Bahama and Nassau/ Paradise Island were primary destinations for conventional mass tourism, with emphasis on 'sun, sand and sea' vacation packages. Hence, it could be inferred that the primary reasons cited for these destinations was the availability of packaged vacations to beautiful beaches. In contrast, most of the Out Islands, including the Abacos, are not serviced regularly by international flights making them off-the-beaten path destinations for the adventurous and/or the wealthy. Hence, 'good value for the money' and 'good package deals' are not primary reasons for visiting these islands. With the third largest barrier reef in the world, many of these islands are main destinations for diving, snorkeling, swimming and boating. Hence, it may be inferred that one of the primary reasons for visiting these destinations is 'sports' (15%). While the exit survey conducted by BMOT illuminated tourist motivations, it was not

sufficient to understand product characteristics that specifically attracted tourists to the Abacos.

To gain further insights into those characteristics of the environment on Abaco Island that tourists particularly valued, a separate study was conducted (Appendix E). A value can be defined as “the fundamental things that people care about and consider important” (SATC, 1996: 10).

To select research participants, convenience sampling was used resulting in a sample size of nine tourists representing different demographic groups in terms of age, gender, and second-home ownership. The interview results were analyzed based on a thematic reading of digital recordings, with common themes emerging within four broad categories: overall character, biophysical, social and cultural environments. The results suggested that participants particularly valued the pristine, natural environment with its beautiful beaches, clear waters, abundant wildlife and good recreational opportunities. The hospitable Abaconian people and Bahamian architecture were socio-cultural characteristics that participants found important, as well as the relative solitude, peace and quiet of the destination. In terms of overall character, spatial and temporal changes in the landscape character contributed to a valuable tourism experience for some participants. Since the paramount purpose was to apply and evaluate TOMM, the interest was not in arriving at generalizable conclusions, but mere indications that could be used in determining important place characteristics.

In a comparison between resident and tourist values, the results show great similarities (Table 4.6). The island’s product is based on a peaceful and quiet

lifestyle in a pristine maritime setting with good opportunities for relaxation and recreation. The Bahamian people offer visitors a warm welcome and opportunities to discover Bahamian culture. Complementary themes include a beautiful coastline, clear waters, coral reefs and abundant wildlife.

Table 4.6. Common Themes in Community and Tourist Values.

Community Values	Tourist Values
<ul style="list-style-type: none"> • A pristine natural environment • Relative solitude through a small population • Strong community bonds • Good recreational opportunities • A safe and crime-free environment • Abundant wildlife 	<ul style="list-style-type: none"> • A pristine natural environment • Relative solitude through a small population • Hospitable Abaconian people • Good recreational opportunities • Bahamian architecture and vernacular • Bahamian cuisine

4.3.3.2. GROWTH TRENDS

To assess overall tourism growth, historic growth patterns were examined in order to discern long and short terms trends in tourist arrivals. The number of visits can be defined as:” The number of people/travelers/non-residents visiting a given area or experience, and the distribution of those visits over time” (SATC, 1996: 13).

With respect to long-term trends, the Bahamas experienced modest growth of tourist arrivals in the period 1980-1990, when the average annual growth rate was three percent (Table 4.7). However, in the period 1990-1995 the annual average growth rate only reached 0.4 percent in comparison to 4.1 percent for the world. This

period was followed by a decline in tourist arrivals for the 1995-2000 period, when the number of tourist arrivals declined by 0.6 percent annually in comparison to a 4.8 percent annual growth rate for the world.

Table 4.7. Comparison of Tourist Arrivals, 1980–2005.

	Bahamas	Average annual growth (%)	Out Islands	Average annual growth (%)	World (million)	Average annual growth (%)
1980	1,181,260	-	216,430	-	278.2	
1985	1,368,300	3.2	216,065	0	320.2	2.9
1990	1,561,665	2.8	233,900	1.6	441.0	6.6
1995	1,598,135	0.4	236,880	0.2	538.1	4.1
2000	1,543,959	-0.6	266,355	2.4	680.6	4.8
2005	1,608,153	0.8	272,871	0.4	806.0	3.7

Source: BMOT (2005c) and WTO (2006b).

During the 1995-2005 period the number of tourist arrivals to the Bahamas stagnated, although it appears that the islands experienced a slight improvement; the annual growth rate for the 2000-2005 period was 0.8 percent. Yet, during the same period tourist arrivals grew by 3.7 percent worldwide. In a comparison of annual growth rates between the Bahamas and the World, the Bahamas did not keep pace with annual growth rates since the 1980-1985 period when it experienced annual growth in tourist arrivals by 3.2 percent compared to 2.9 percent for the World. This implied that the Bahamas was steadily losing market share in terms of tourist arrivals.

This stagnation in tourist arrivals to the Bahamas could be viewed as a result of global political instability and increased competition (BMOT, 2005b). As illustrated earlier the main tourist-generating zone for the Bahamas was the U.S.A. (Table 4.9), due to a proximity advantage (BMOT, 2005b); the Bahamas is conveniently located three hours from New York and 35 minutes from Miami. Following the terrorist attacks on September 11, tourist travel preferences changed in the U.S.A. in favour of domestic travel. However, increased confidence in travel safety reversed this trend, resulting in an increase in inbound tourism for the Bahamas (BMOT, 2005b)(Table 4.10). An increase in price competitiveness from other tourism products, such as all-inclusive resorts, cruise-ships (BMOT, 2005b), as well as other global and regional destinations potentially explain the decline in Bahamas' market share of the global tourism market.

In a comparison of Bahamian destinations, Abaco Island is the third largest with 99,558 tourist arrivals in 2005, following New Providence and Grand Bahama (BMOT, 2005c) (Table 4.8). In terms of short-term trends in the number of tourist arrivals, Abaco Island showed a modest growth of 5.5 percent in 2003/2004, whereas other Out Islands showed double-digit growth rates. Construction of large resorts on Bimini and Exuma islands resulted in growth rates of 152.8 percent and 124.2 percent respectively for 2003/2004, explaining tourism growth on these islands. With respect to Eleuthera and San Salvador, the growth in the absolute number of tourist arrivals to Abaco Island roughly equated or surpassed that of these islands. For the period 2003/2004, the increase in tourist arrivals reached 5,159 (Abaco), 5,757 (Eleuthera) and 2,025 (San Salvador).

Table 4.8. Tourist Arrivals by Island 2003-2005.

Island	2005	% Chg 05/04	2004	% Chg 04/03	2003
New Providence	1,019,017	10.5%	921,933	2.9%	895,612
Grand Bahama	316,265	-15.5%	374,433	-0.5%	376,425
Abaco	99,558	-0.2%	99,720	5.5%	94,561
Bimini	44,131	4.9%	42,085	152.8%	16,647
Eleuthera	38,190	5.4%	36,233	18.9%	30,476
Exuma	36,846	15.0%	32,046	124.2%	14,295
San Salvador	14,347	3.6%	13,846	17.1%	11,821
Other Out Islands	39,799	-3.0%	41,016	-41.7%	70,332
Total	1,608,153	3%	1,561,312	3.4%	1,510,169

Source: Adapted from BMOT (2005c).

4.3.3.3. MARKET TRENDS AND OPPORTUNITIES

The study then proceeded to examine the key geographic markets that accessed the Bahamas, and the sources of future growth and potential target markets. "The tourism market can be defined as: the set of all actual and potential buyers of a tourism experience, service or item" (SATC, 1996: 14).

In terms of international tourist arrivals, the composition of tourist arrivals to the Bahamas remained steady during the period 1985 -2005 (Table 4.9). In 2004, the majority of tourists to the Bahamas came from the U.S.A. (87.2%), followed by Canada (5.2%) and other (3.6%). In 2005, the majority of tourists from the U.S.A. came from the south, because of the proximity to the Bahamas (BMOT, 2005c). The same year, 75,643 tourists arrived from Canada with the majority coming from Ontario (61%), while 44,846 arrived from the United Kingdom, representing 50% of

tourists from other countries (BMOT, 2005c). Thus, the Bahamas is mainly been a destination for English-speaking countries.

Table 4.9. Tourist Arrivals by Country of Residence 1985-2005.

Year	USA	%	Canada	%	Europe	%	Other	%	Total
1985	1,205,275	88.1%	91,700	6.7%	36,890	2.7%	34,435	2.5%	1,368,300
1986	1,223,620	89.0%	72,190	5.2%	46,450	3.4%	32,960	2.4%	1,375,220
1987	1,299,215	87.8%	80,525	5.4%	67,950	4.6%	32,165	2.2%	1,479,855
1988	1,274,365	86.4%	84,330	5.7%	85,135	5.8%	31,150	2.1%	1,474,980
1989	1,351,750	85.8%	94,300	6.0%	91,320	5.8%	37,700	2.4%	1,575,070
1990	1,321,930	84.6%	96,755	6.2%	96,625	6.2%	46,355	3.0%	1,561,665
1991	1,176,690	82.5%	90,120	6.3%	112,045	7.9%	48,180	3.4%	1,427,035
1992	1,128,025	80.6%	97,640	7.0%	122,140	8.7%	51,090	3.7%	1,398,895
1993	1,209,550	81.2%	96,570	6.5%	133,085	8.9%	49,475	3.3%	1,488,680
1994	1,254,210	82.7%	99,025	6.5%	109,730	7.2%	53,070	3.5%	1,516,035
1995	1,328,925	83.2%	85,600	5.4%	114,950	7.2%	68,660	4.3%	1,598,135
1996	1,341,300	82.1%	85,760	5.3%	127,620	7.8%	78,425	4.8%	1,633,105
1997	1,310,420	81.0%	91,330	5.6%	130,365	8.1%	85,480	5.3%	1,617,595
1998	1,250,026	81.8%	83,086	5.4%	117,954	7.7%	76,641	5.0%	1,527,707
1999	1,293,235	82.0%	87,973	5.6%	125,485	8.0%	70,373	4.5%	1,577,066
2000	1,294,295	83.8%	82,840	5.4%	104,610	6.8%	62,214	4.0%	1,543,959
2001	1,308,163	85.1%	79,715	5.2%	94,047	6.1%	55,855	3.6%	1,537,780
2002	1,310,140	86.6%	68,592	4.5%	79,564	5.3%	54,855	3.6%	1,513,151
2003	1,305,335	86.4%	63,148	4.2%	93,170	6.2%	48,516	3.2%	1,510,169
2004	1,360,912	87.2%	68,462	4.4%	83,590	5.4%	48,348	3.1%	1,561,312
2005	1,380,083	85.8%	75,643	4.7%	85,277	5.3%	67,150	4.2%	1,608,153

Source: BMOT (2005c).

In terms of outbound tourism, the industrialized countries in Western Europe, the Americas and Asia Pacific remained the largest tourist generating zones (Table 4.10) (WTO, 2006a). However, because of increased disposable income in newly industrialized countries, source markets are rapidly growing in South-East Asia and North-East Asia, Central and Eastern Europe, Southern Africa and the Middle East.

In 2005, Africa recorded the highest growth rate of eight percent, followed by the Middle East and Asia Pacific with seven percent growth rates in outbound tourism (WTO, 2006b).

Most of tourism activities occur within the same region, but long-haul travel is starting to grow again (WTO, 2006b). In 2005, intra-regional travel accounted for 78.6 percent of all travel, while inter-regional travel accounted for only 18.4 percent. However, travel to other regions grew by 16.7 percent in 2004 and 6.3 percent in 2005, exceeding overall tourism growth in the world (WTO, 2006b).

Table 4.10. Outbound Tourism by Generating Regions 1990-2005.

	International Tourist Arrivals (millions)					Change (%)		Share (%)
	1990	1995	2000	2004	2005	2004/03	2005/04	2005
World	439.4	540.5	686.8	764.5	806.3	10.1	5.5	100.0
From:								
Europe	252.6	309.5	396.7	431.4	449.0	4.1	4.1	55.7
Asia & the Pacific	59.1	87.4	115.5	144.4	154.3	25.0	6.9	19.1
Americas	100.3	108.9	131.5	130.2	137.1	12.1	5.3	17.0
Middle East	8.3	9.7	13.7	20.5	21.9	29.7	6.9	2.7
Africa	10.0	12.9	16.5	18.8	20.3	6.2	8.2	2.5
Origin not specified	9.2	12.1	12.9	19.3	23.6	-	-	2.9
Same region	350.8	430.6	540.9	605.5	634.1	7.9	4.7	78.6
Other regions	79.4	97.8	133.0	139.7	148.6	16.7	6.3	18.4

Source: WTO (2006b).

Based on an analysis of global growth trends, tourism growth to the Bahamas is most likely to continue to come from the U.S.A., Canada and the United Kingdom.

However, there are opportunities to expand into other geographic markets such as South-East Asia, North-East Asia, Central Europe, Eastern Europe, Southern Africa and the Middle East.

As a result of semi-structured interviews with tourism stakeholders on Abaco Island, other potential market segments were identified based on the natural and cultural resources of the islands (Appendix D). These potential markets represent four different categories of tourism experiences: (1) nature or ecotourism, (2) culture or heritage tourism, (3) adventure tourism, and (4) second-home tourism with an emphasis on family vacations.

For the resort development at Long Beach, expansion into other geographic markets, with the exception of English-speaking target markets, was not considered since it would require development of services, information and promotion in other languages. However, the nature/ecotourism, adventure and second-home tourism market segments are good alternatives given the natural attractions at Long Beach and in the surrounding area.

4.3.4. SUPPLY FACTORS

The study then examined the supply-side of the tourism products, such as transportation, services and promotion that are considered important to the tourism experience.

4.3.4.1. TRANSPORTATION

With respect to transportation, Bahamas Air provides three daily flights from Nassau, New Providence, and Freeport, Grand Bahama Island, to Marsh Harbour where the international airport is located (Fig. 4.6). From Nassau, the flight only takes thirty minutes, but the island is not directly accessible from most tourist-generating zones in North America or Europe with the exception of regular flights from Miami and Fort Lauderdale. Marsh Harbour is also the main terminal for regular ferry services to Elbow Cay, Great Guana Cay, Man-O-War Cay, Lubber's Quarters, and Treasure Cay. For access to the outlying cays and islands there are also boat rentals available, but many tourists store their own boats in Marsh Harbour.

In the southern district, Sandy Point can be reached by weekly ferry service from Freeport, Grand Bahama Island. On Abaco Island, the Great Abaco Highway connects Sandy Point in the south to Cooper's Town in the north. There is no public transportation, but most tourists rely on private vehicles or car rentals. For the resort at Long Beach, a shuttle-bus service to and from the airport as well as grocery shopping services would be required to transport guests.

4.3.4.2. ACCOMMODATION

In general, tourism development in the Abacos has been dispersed and low-impact, with hotel operations having less than 20 rooms on average (BMOT, 2005c). Most of the accommodation product is comprised of guesthouses, inns, second-homes and rental units, but there are a number of notable exceptions: the Abaco Beach Club on Winding Bay, the Passerine Project on Baker's Bay (Guana Cay), Treasure Cay, Elbow Cay and Disney's Castaway Cay (Gorda Cay). Based on interviews with tourism stakeholders, there was a general consensus that any resort development on Abaco Island should be low-impact and low-density in order to fit with the character of place (Appendix D).

4.3.4.3. INFRASTRUCTURE

Based on interviews with tourism stakeholders, a number of improvements were deemed necessary to facilitate tourism growth in terms of social services, infrastructure, enforcement of environmental and building regulations, and waste disposal (Table 4.11). Because of the location of the proposed resort as a center for the southern district of Abaco Island, it was recommended that health care services, shops and other services be located on the property or in the vicinity (Fig. 4.7).

Table 4.11. Required Improvements for Tourism Growth on Abaco Island.

Common Theme	Specific improvements
Expansion of social services	<ul style="list-style-type: none"> • Hospital in Marsh Harbour • Medical clinics • Dental clinics • Police stations • Emergency stations • Affordable housing
Infrastructure	<ul style="list-style-type: none"> • Roads • Transportation • Utilities • Telecommunication
Legislation and enforcement of legislation	<ul style="list-style-type: none"> • Environmental impact assessments • Environmental regulations • Building regulations and codes
Human Resources	<ul style="list-style-type: none"> • Education • Skill training
Waste disposal, reuse and recycling	<ul style="list-style-type: none"> • More landfill sites • Recycling stations and facilities

4.4. ALTERNATIVE SCENARIOS

After a situational analysis, application of TOMM proceeded to an evaluation of alternative scenarios based on a synthesis of information.

Initially a list of tourism assets was compiled. Based on interviews with residents and tourists, it was discovered that the pristine natural environment, abundance of wildlife, peace and quiet, good recreational opportunities and friendly people were valued characteristics of place. An inventory of natural and cultural attractions identified specific locations in the area surrounding Long Beach that could serve as an attraction complex. The information was broken down into assets, activities and themes that could form the foundation for development of a number of tourism products (Table 4.12).

Table 4.12. Tourism Assets.

Assets	Activities	Themes
Social assets e.g. strong community bonds, nice and friendly people	volunteer activities, home-stays, bed & breakfast, inns	Hospitable Bahamian people
Natural assets e.g. beautiful coastline, coral reefs, clear blue waters, dryland forest (coppice), blue holes	Nature-based activities, e.g. sight seeing, bird watching, hiking, scuba diving, snorkeling, sea kayaking, mountain-biking, biking Guided tours.	Pristine natural landscapes
Abundant wildlife, e.g. dolphins, whales, bone fish, the Abaco Parrot, the Kirkland Warbler	Bird watching, hiking, bush walking, sight seeing. Guided tours.	Wildlife
Events, e.g. regattas and fishing competitions		Recreation and relaxation
National Parks and Marine Parks	Snorkeling, Scuba-diving, Sea-kayaking, Hiking, Biking	Pristine natural environment
Cultural assets, e.g. Loyalist cultural history, architecture, , maritime history and the Junkanoo Festival	Guided tours of heritage sites. Classes offered in cooking, arts and crafts. Bahamian cuisine.	Pioneer Heritage Bahamian Cultural Traditions

In terms of market growth, trends and opportunities, Abaco Island has experienced modest growth in tourist arrivals (5.5% annually) before Hurricane Frances struck the island in 2005. In 2007, most of the resorts and infrastructure had been restored and tourism appeared to have increased. Based on tourism assets and market trends and opportunities, tourism stakeholders identified the adventure, ecotourism and cultural heritage markets as potential target markets, as well as families visiting the island. In terms of geographic markets, the U.S.A., Canada and possibly Europe would continue to be the main tourism-generating zones.

For the 'sun, sand and sea' tourism market, Abaco Island is subject to intense competition from other global destinations that have a price advantage. In contrast,

the ecotourism market appeared to be less price-sensitive with some ecolodges catering to an affluent clientele with unique tourism products.

The islands of the Bahamas are positioned as pristine and secluded get-aways with stunning beaches and crystal-clear waters. In order for positioning and branding to be effective a number of criteria had to be fulfilled: low-impact development, low tourism penetration index, environmental protection and conservation, and development of a cultural heritage product.

As the last step of the context analysis, two alternative scenarios for resort development at Long Beach were explored based on a synthesis of information from the preceding steps. Assessment of different alternatives served to highlight current and potential issues, potential benefits, potential costs and the information required from TOMM to monitor resort development as presented in Table 4.13. For Long Beach, the alternative tourism scenarios were:

- A. A consistent moderate increase (5.5% annually) in tourism demand from the 'sun, sand and sea' market segment based on the most recent market trends for Abaco Island.
- B. A significant increase in accommodations over the next 3 years, from a total of 26 beds to 128 beds, with a tourism product targeting the soft adventure/ecotourism market segments, composed of couples who are Mature Americans (55+) or late Baby Boomers (40+), college educated and from middle to high income groups (see for instance Wight, 2001).

Table 4.13. Alternative Scenarios For Resort Development

Alternative scenarios	Potential benefits	Potential costs	Information needs from TOMM
<p>Alternative A A consistent gradual increase in tourism demand (5.5% annually)</p>	<ul style="list-style-type: none"> • Limited financial exposure • Greater potential for vegetative regeneration • Greater potential for community acceptance • Maintenance of community and tourist values • Increased tourist satisfaction • Maintenance of coral reef health • Little wildlife disturbance including that of the endangered Abaco Parrot 	<ul style="list-style-type: none"> • Limited business, employment, education and training opportunities for local residents. • Construction of vacation properties, rental accommodations, an inn with 40 suites, a saltwater pool, two tennis courts, a lawn bowling facility, two bars, two restaurants, a beach center, a spa health center. 	<ul style="list-style-type: none"> • Information on cost of additional infrastructure, maintenance of existing public facilities, tourist expenditure, investment and employment by industry sector. • Information on visitor satisfaction and perceptions of crowding • Data on the number and size of critical marine species
<p>Alternative B A significant increase in accommodations, from a total of 26 beds to 128 beds over the next 3 years, with a tourism product targeting the luxury ecotourism market segment and the Baby Boom generation, in addition to seniors.</p>	<ul style="list-style-type: none"> • Attractive and unique resort landscape • Increased education and awareness of natural resources, habitats, and ecosystems • Increased environmental protection • Maintenance of the coastal landscape character • Lower per capita energy consumption • Lower per capita water consumption • Product diversification • Increased income opportunities • Higher return-on-investment (ROI) • Availability of vacation properties • Increased potential for cross-promotion between vacation property ownership and vacation rental market resulting in sales of vacation properties • Increased market share of the vacation rental market on Abaco Island • Business, employment, education, and training opportunities for local residents • Provision of health care services 	<ul style="list-style-type: none"> • Construction of vacation properties, rental accommodations, and inn with 40 suites, two restaurants, two bars, marina, swimming pool, boat and sea kayaking storage facility, education center and a marina. • Coral reef damage due to negligent behaviour by snorkelers, scuba divers, and boat operators • Training and education for guest services, hospitality management, and guides. • Habitat destruction • Greater demand on existing resources • Increase in noise and light pollution • Decrease in tourist satisfaction from congestion • Decrease in community support for resort development • Over-fishing of Queen conch, lobster and Nassau Grouper 	<ul style="list-style-type: none"> • Bird count (Abaco Parrot) • Measurements of contaminants in the water • Assessment of coral reef damage; physical structure and indicator species • Percentage vegetative cover • Vegetative structure and composition • Amount of invasive and non-native species • Per capita water and energy consumption • Visitor perception of crowding • Visitor satisfaction • Average duration of stay, occupancy rate, and tourist expenditure • Business revenue, operational expenses, profit • Sales of vacation properties • Community perception of resort development • Number, size and breeding rates of Queen conch, lobster and Nassau Grouper • Number of residents employed from the village of Crossing Rock

Alternative A focused on a gradual increase in the 'sun, sand and sea' target market with program development (supply factors) targeting affluent Baby Boomers and seniors. In terms of accommodation, a range of options would be available including rental of suites, town homes and villas with amenities and facilities including the following: saltwater pool, two tennis courts, lawn bowling, spa health center, two restaurants, two bars and access to a local golf course at the Ritz Carlton Abaco Club. In addition, guests could rent snorkeling, scuba diving and sea kayaking equipment. Because of the location of a fringe coral reef approximately 300 meters from shore, other water sports were not recommended. The resort would also offer a shuttle bus, grocery shopping and housekeeping services.

Alternative B focused on the soft adventure/ecotourism market segments with a tourism product targeting Mature Americans (55+) and late Baby Boomers (40+) from middle- to high-income groups. In terms of accommodations a range of options would be available including town homes, villas and suites at the Long Beach Inn. In terms of facilities, the resort would feature two restaurants, two bars, a saltwater swimming pool, a marina, boat and sea kayak storage facility, interpretive walk, as well as an education center with a library. Guests could enjoy guided nature walks, sea kayak, snorkeling and scuba diving tours, as well as marine biology classes. Furthermore, guests could be actively engaged in research and monitoring activities at the resort.

As Table 4.13 illustrates, the two different scenarios are associated with trade-offs between potential benefits and costs, and require different monitoring information and methods to manage the resort development.

4.5. SELECTION OF TOURISM SCENARIOS

Subsequently the study proceeded to the selection of a particular tourism scenario. Alternative B was selected based on the following reasons: (1) a substantial increase in the number of visitors provide opportunities for sales of vacation properties, generation of more income and a greater return on investment, (2) targeting the nature-based, adventure, and ecotourism market segments requires less capital expenditure, provides a unique tourism experience and is less price sensitive. Moreover, it is anticipated that it would have less ecological impacts.

4.6. MONITORING PROGRAM

Based on the result from the context analysis, application of the Tourism Optimization Management Model (TOMM) then proceeded to development of the initial stages of the monitoring program, including identification of optimal conditions and indicators.

To guide planning of a sustainable resort, the present study was guided by the principles of sustainable tourism and ecotourism. A number of environmental concerns had also been identified with respect to over-fishing, destruction of wetlands, pollution of terrestrial and aquatic environments, and habitat protection for the Abaco Parrot and other species unique to the ecosystems on Abaco Island. At the same time, tourism stakeholders representing a number of stakeholder groups had high expectations for tourism development in terms of its economic contribution and improvement in material welfare for local residents.

In an ideal situation, development of the monitoring program is based on multiple-stakeholder participation to lend legitimacy to the planning process (Jamal & Getz, 1995). However, since the application of TOMM to resort development was only in the initial planning phase, community residents were not invited to participate. Hence, development of a list of optimal conditions and indicators was at the sole discretion of the researcher for the purpose of evaluating TOMM.

4.6.1. OPTIMAL CONDITIONS

The study subsequently proceeded to the development of optimal conditions that resort development at Long Beach should satisfy. An optimal condition can be defined as “a desirable but realistic status for a sustainable future” (SATC, 1996: 20) and must be specific, measurable and relevant in order to be effective in achieving desired outcomes (McCool et al., 1985). The environment in which tourism operates has economic, social, cultural, ecological, experiential and marketing dimensions, and potential, optimal conditions were developed to monitor tourism planning within each dimension.

Development of a list of potential, optimal conditions for measurement of progress toward sustainable tourism relied on a synthesis of information from four different sources: national policy and planning initiatives (BMOT, 2005b), indicator research (Choi & Sirakaya, 2006), a list of potential optimal conditions (SATC, 1996), and results from the context analysis of the present study based on primary and secondary data. A list of optimal conditions is shown in Table 4.14.

This list of optimal conditions specifies desired outcomes from sustainable tourism planning, but optimal conditions need to be converted into specific measurements – indicators - to provide accurate data for effective monitoring and management. Thus, indicators are identified in the following section.

4.6.2. INDICATORS

Recently the sustainable tourism debate has moved beyond conceptualization to operationalization and the subsequent development of methodologies and measurement tools, such as sustainability indicators (Choi & Sirakaya, 2005, 2006). An indicator can be defined as: “ A tangible measure of an optimal condition” (SATC, 1996: 21) and belong to two general categories: objective and subjective. Objective indicators refer to “quantitative counts of behaviors and conditions associated with a given situation” (Rossi & Gilmartin, 1980: 19 quoted in Choi & Sirikaya, 2005) and subjective indicators refer to measurements of resident attitudes, emotions, attributes and personal evaluations (Rossi & Gilmartin, 1980). Development of a list of potential indicators for use in measuring some of the optimal conditions listed in the previous section relied on indicator research (Choi & Sirakaya, 2005, 2006; SATC, 1996), results from interviews with tourism stakeholders (Appendix D) and suggestions by the author (Table 4.14).

To assess the relevance of a particular indicator to an application of TOMM, Manidis Roberts Consultants developed an indicator selector matrix whereby the use of a particular indicator was evaluated based on accuracy, utility of data, data availability, and cost of data (SATC, 1996: 53). These criteria were also used to select indicators to monitor the resort development at Long Beach.

4.6.3. ACCEPTABLE RANGES

After the selection of indicators to measure achievement of optimal conditions, the next step in the TOMM monitoring program involved specification of acceptable ranges for each indicator. An acceptable range is defined as “an ideal, yet realistic range of measurement for each indicator which is consistent with optimal conditions” (SATC, 1996: 22).

For monitoring methods that depended on the use of qualitative data, the acceptable ranges were expressed as percentages. Specification of acceptable ranges for some objective indicators depended on baseline data, which did not exist in 2007 (Table 4.15).

Table 4.14. SUSTOM Monitoring Program.

	OPTIMAL CONDITIONS	INDICATORS	ACCEPTABLE RANGES	MONITORING METHODS
KEY THEMES	ECONOMIC CONDITIONS			
Income distribution	Nearly all employees at the resort are Bahamian citizens.	Percentage of resort employees who are Bahamian citizens.	60%-80%	
	MARKETING CONDITIONS			
Market growth	Tourism growth is occurring at a consistent rate with minimal boom/bust.	Annual rate of growth in the number of guests.	70%	
Product diversification	The ecotourism market segment is expanding.	Increase in visitor expenditure on guided eco-tours.	TBD	
	ECOLOGICAL CONDITIONS			
Rate of ecosystem destruction/degradation	Energy and water saving practices have been implemented.	Water consumption/night/visitor Energy consumption/night/visitor	TBD TBD	
Habitat protection	The health of the interconnected mangrove/sea grass/coral reef ecosystems is maintained or enhanced. The net coverage of native vegetation is not reduced by development.	Presence or absence of indicator species, size of and visual damage to elkhorn and staghorn coral. Percentage cover of native vegetation in specified areas such as mangrove wetland, primary dune, and coppice areas.	TBD 75%-80%	
Loss of non-renewable and renewable resources	The diversity of native vegetation is not reduced by development. The stock of marine resources is maintained or enhanced, particularly with respect to the Queen Conch, Nassau Grouper and lobster/cr. fish. A proportion of tourism revenue is reinvested into the conservation of the environment.	Number of native species on site. Count of number, size and breeding rates of Nassau Grouper, Queen conch and lobster found at a designated monitoring area at Long Beach. An increase in the proportion of tourism revenue that is reinvested into environmental conservation.	TBD TBD 2%-3%	
	SOCIO-CULTURAL CONDITIONS			
Community/residents/stakeholders	The majority of residents feel that they can control decisions influencing their future.	Percentage of residents in Crossing Rock who feel that they can control decisions influencing their future.	75%-80%	Bi-annual survey - SUS-TAS – developed by Choi & Sirikaya (2005) to measure resident attitudes to tourism development. Could be administered by high-school students as part of curriculum.
Maintenance of environmental values	The majority of residents in Crossing Rock have positive attitudes to tourism development. (SUS-TAS). Residents from Crossing Rock are able to access Long Beach without encountering too many tourists. Tourism does not increase noise levels.	Percentage of residents in Crossing Rock who have positive attitudes to tourism development. Percentage of residents who are satisfied with their access to Long Beach.	75% -100% 75% - 100%	Bi-annual survey using SUS-TAS. Bi-annual survey using SUS-TAS.
Education and upgrading of skills	The character of the coastal landscape is maintained There are on-going educational and skill-training programs for employees.	Percentage of departing visitors who are satisfied with their experience. Disturbance of dune vegetation and terrain. The percentage of employees enrolled in educational and skill-training programs that are fully covered by the resort.	75% - 100% 75% - 100%	Exit survey of visitors to Long Beach.
Socio-cultural fabric	Tourism assists residents maintain a sense of identity and belonging to the Abaco Island community.	The percentage of employees enrolled in educational and skill-training programs that are fully covered by the resort. Percentage of departing visitors who have experienced local culture.	75% - 100%	Exit survey of visitors to Long Beach.
	EXPERIENTIAL CONDITIONS			
Tourist satisfaction	The visitor experience is distinct and can only be experienced at Long Beach. The majority of visitors leave the resort highly satisfied with their experience. The majority of visitors report positive attitudes to tourism development on Abaco Island. Visitors do not feel crowded at any of the facilities or natural areas at the resort. Visitors experience wildlife in their natural habitat.	Percentage of departing visitors who report that the experience has been distinct. Percentage of departing visitors who are satisfied with their experience. Proportion of visitors who have positive attitudes to tourism development. Proportion of visitors that feel crowded at facilities and natural areas. Proportion of visitors that have experienced wildlife in their natural habitat.	75%-100% 75% - 100% 75% - 100% 10% - 15% 75% - 100%	Exit survey available in all guest rooms. Exit survey of visitors to Long Beach. Exit survey of visitors to Long Beach. Exit survey of visitors to Long Beach. Exit survey of visitors to Long Beach.

Source: Adapted from Choi & Sirikaya (2005) and SATC (1996).

4.6.4. MONITORING METHODS AND DETAILS

After the establishment of acceptable ranges, specific monitoring methods and details were specified for each indicator. The purpose of establishing monitoring methods and details was to measure actual ranges for each indicator against desired conditions, so that management actions can be taken in case there is a discrepancy. "A monitoring program can be defined as: The way in which information is collected and stored over a period of time" (SATC, 1996: 22).

For the resort development at Long Beach, development of monitoring methods was based on the availability, knowledge and expertise of monitoring personnel, and the cost of implementation. To measure tourist and community satisfaction with the resort development, the monitoring program relied on a combination of qualitative research methods (Table 4.15). Upon departure, tourists could be asked to fill out a survey asking respondents to rate their agreement with a number of statements using a five-point Likert scale. A similar survey could be conducted on an annual basis to measure residents' attitudes to tourism development, and supplemented with focus group interviews every three years.

For biological indicators, monitoring would rely on quantitative methods such as an annual count of particular species, reproduction success rates, and the presence or absence of indicator species in terrestrial and aquatic ecosystems. Furthermore, to measure the health of the coral reefs on the Atlantic Ocean side, the area and size of elkhorn and staghorn coral, and the presence or absence of certain indicator species would be measured.

In terms of monitoring personnel, the monitoring program could utilize the resources and expertise of local residents, resort personnel and tourists to conduct an annual inspection of biological indicators. Monitoring may be viewed as a component of the resort's environmental education program, since monitoring depends on knowledge and identification of particular species and an understanding of the relationships between ecosystems and ecosystem components. Since many of the members of the Crossing Rock community still made a living from fishing, these individuals presumably possess knowledge of certain marine species and environments around Long Beach. As part of a community program to foster good relations between the resort and local residents, collaborative efforts to monitor the environment could be developed.

Because this study was restricted to the planning phase for the resort, development of a monitoring program concluded the application of TOMM. To illustrate the relationships between environmental planning and physical planning at the site scale, the study proceeded to program development, site analysis and a conceptual design for the site at Long Beach.

4.7. PROGRAM DEVELOPMENT AND PHYSICAL PLANNING

In terms of physical planning for the Long Beach resort, the study proceeded with identification of those socio-cultural, experiential and ecological conditions that could be achieved through the allocation of land uses to specific areas, and specific design concepts.

In order to reach the ecological, socio-cultural and experiential conditions for resort development, it is recommended that the programming for the site be changed from 464 to 210 residential units, and that development of different phases occurs gradually. In the first phase, a total of 64 rooms would be constructed as specified earlier.

4.7.1. PROGRAMMING ELEMENTS

Based on the total number of beds at the proposed resort (540 beds) and the average hotel occupancy rate for the Bahamas (40%), it was estimated that there would be 216 guests on average at the resort resulting in the following programming elements and spatial requirements thereof:

- 42 suites at the Long Beach Inn (20% of accommodations)
- 98 multi-unit town homes with (50% of accommodations)
- 38 one-bedroom town homes with pullout couch
- 60 two-bedroom town homes with pullout couch
- 50 two-bedroom executive villas (24% of accommodations)
- 20 three-bedroom executive villas (10% of accommodations)
- 10 Service / Amenity occupancy (staff housing)
- Total restaurant space required = 2592 sq. ft (2 restaurants)
- Total bar space required = (2 bars)
- Total number of parking spaces required = 1 per dwelling or guest room
 - (42 guest parking spaces at the Inn, and 10 staff parking spaces = 18,980 sq.ft)

- Swimming pool
- Marina
- Boat storage facility for 30 kayaks
- Support Buildings (equipment, landscape maintenance)
- Grocery / Variety store
- Equipment Rental Store / Facility
- Education Center / Library
- Outdoor gathering areas
- Interpretive walk

4.7.2. SITE INVENTORY AND ANALYSIS

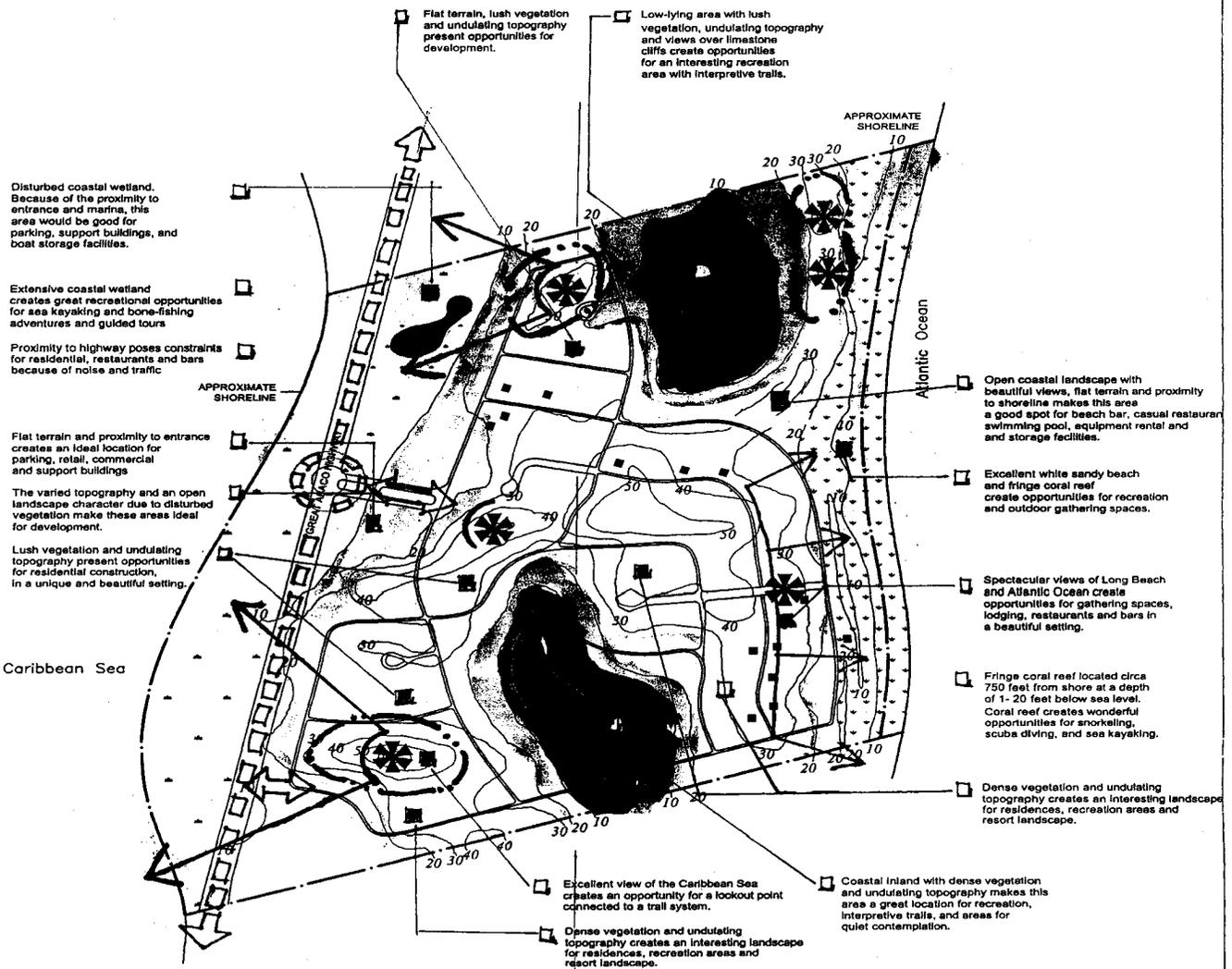
An inventory of the site was conducted in November of 2006, and the results are presented in Appendix F. Based on this inventory, the site analysis took into account landscape types, topography, vegetation, visual character, infrastructure, by-laws and regulations, and the spirit of the place. According to government documents, there are currently no restrictions on construction in the coastal zone or building regulations.

In order to maintain the character of the coastal landscape, development has been restricted from the wetlands and coastal zone areas as illustrated in the site analysis (Fig. 4.8). Instead, these areas are better suited for recreational purposes, with the exception of the coastal wetland located west of the highway. Development has also been allocated to areas that are already disturbed, with relatively flat terrain, views of the Atlantic Ocean and Long Beach, and an open landscape. Thus, the net coverage of vegetation may not be reduced in those areas. In addition, there

is also development potential in the ridgeland areas characterized by undulating topography, dense vegetation and an enveloping character. In these areas, clearing of land for construction would need to be done by hand, in order to minimize removal of native vegetation and soil erosion. The different landscape characters on the site suggest creation of unique districts, each with distinct architectural features and landscape development. To illustrate the relationships between different land uses and achievement of ecological, experiential, and experiential conditions, the following section presents a conceptual design for the site.

4.7.3. CONCEPTUAL DESIGN

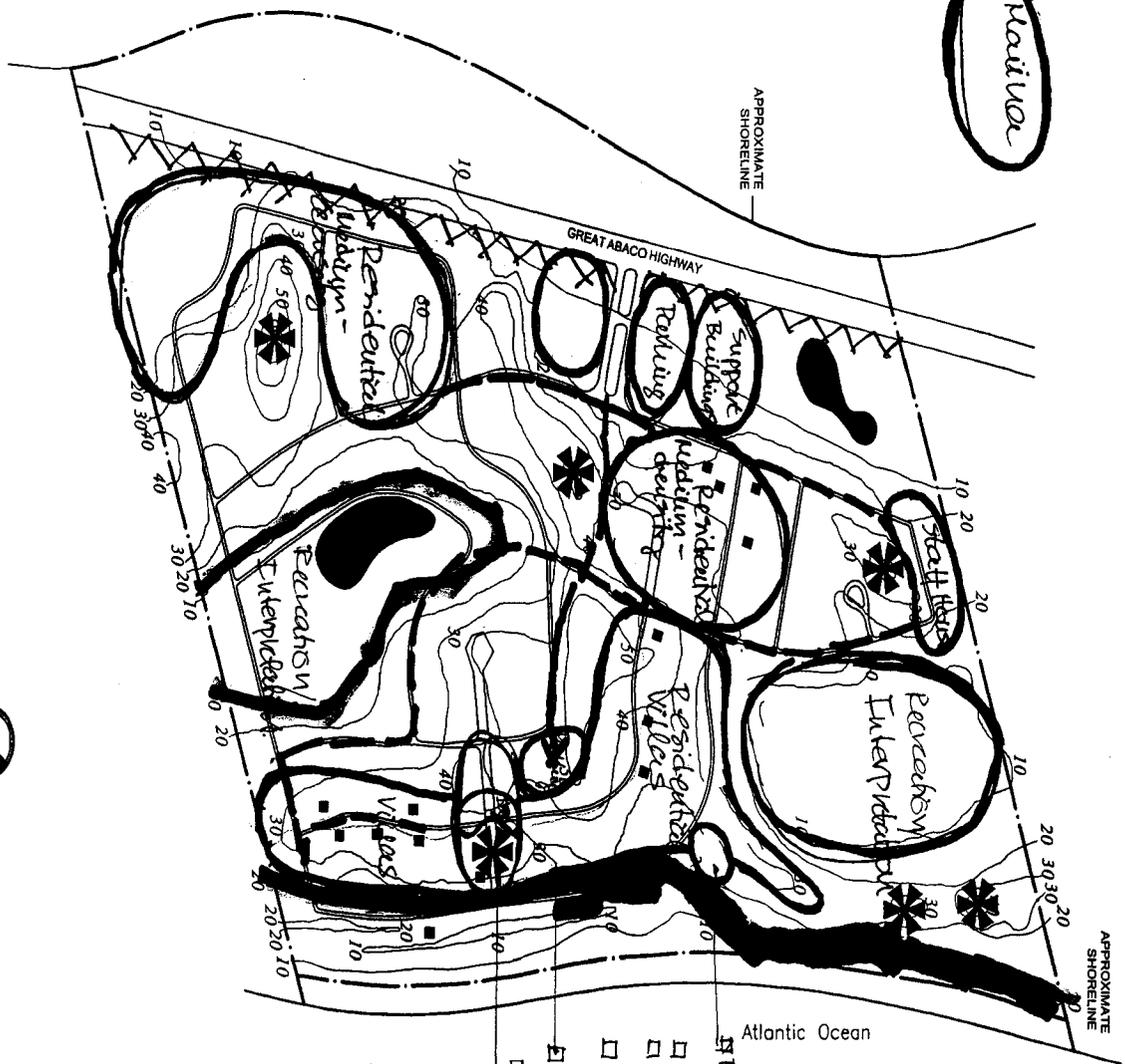
In order to maintain a high percentage of vegetation, the conceptual design is based on clustering of houses in three separate districts with large green spaces surrounding these developments (Fig. 4.9). To capitalize on the spectacular views towards Long Beach and the Atlantic Ocean, it is envisioned that a village center would be placed along the ridgeline adjacent to the primary dunes. An inn with 40 suites, two restaurants and a bar, evoking the Loyalist heritage, anchor the site. Around an outdoor gathering space with a swimming pool, other facilities are located such as retail spaces and an education center with a library, and. Adjacent to the primary dunes and the beach, a beach activity center is located with an equipment rental center, kayak storage facility, and a beach bar.



LEGEND	
Natural Character Features	<ul style="list-style-type: none"> High Point Natural Character Features Buffer
Structural Elements	<ul style="list-style-type: none"> Highway Existing Residential
Wetlands and Coastal Zone	<ul style="list-style-type: none"> Inland Wetland Coastal Wetland Primary Dunes And Beach
Elevations	<ul style="list-style-type: none"> 10' - 20' 30' - 40' 40' - 50'

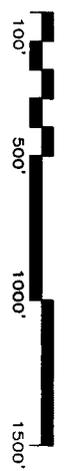
SITE ANALYSIS
 DATE: APRIL 23, 2007
 PREPARED BY: CARINA T. LOOD

Nailua



Caribbean Sea

- Beach Activity Center
- Kayak Storage
- Equipment Rental
- Casual Bar
- Tavern, restaurant
- bar
- Variety store
- outdoor
- gathering spaces
- swimming pool
- children's pool
- Education Center w. library.



4.8. CONCLUSION

Application of SUSTOM to resort development on Abaco Island demonstrate the flexibility of the model to different planning scales; in the absence of a tourism plan for the island, other factors had to be taken into account that are normally dealt with at the regional and destination planning scales. Furthermore, tourism planning and management proceeded with limited resources and information – a situation that is common in other parts of the Caribbean and in many developing countries.

Application of SUSTOM to resort development has illustrated the complexity involved in planning and management of sustainable tourism development, whereby multiple perspectives of current and potential issues, expectations, and outcomes are resolved through community participation. As an initial step in the TOMM planning framework, a context analysis was conducted that included an assessment of external, demand and supply factors, resulting in development of alternative tourism scenarios. Based on estimates of potential benefits and costs, a particular tourism scenario was selected. This initial phase resulted in identification of specific and measurable management objectives, expressed as optimal conditions, indicators and standards that the resort development should aim to achieve. These goals, or desired conditions, then served as the basis for programming of the site and physical program development.

Moreover, application of SUSTOM demonstrates the relationships between environmental and physical planning in that these planning processes inform each other. The site inventory, analysis and conceptual design informed development of a tourism product and the SUSTOM monitoring program. For instance, with respect to

the net coverage of vegetation in the primary dune, coppice and coastal wetland areas, the designation of residential land use in disturbed areas resulted in the establishment of a high percentage vegetative cover as an optimal condition in SUSTOM. Conversely, specification of optimal conditions, indicators and acceptable ranges informs program development and physical planning in the sense that the SUSTOM monitoring program establishes specific goals to be achieved. In terms of post occupancy evaluations, SUSTOM establishes specific conditions that can be used to measure the success of landscape development.

However, application of SUSTOM to the resort development may need to be complemented with other strategies for sustainable design and development in order to satisfy specified optimal conditions. A list of recommendations follows.

General Recommendations For Resort Development:

- Allow for full community participation throughout the planning process.
- Adopt a long-term community affiliation through personal ownership and residence in the community.
- Hire local residents during pre-construction, construction and operational phases.
- Provide on-the-job training, educational opportunities and skill transfer programs for local Bahamian residents.
- Purchase construction materials, produce and other supplies locally.
- Foster good community relations on an on-going basis.
- Provide services to the local community and tourist populations.

- Provide opportunities for tourist-host interactions through provision of communal resources, services, business opportunities, recreational opportunities such as sports tournaments, beach access, and cultural programs.
- Participate in local NGO's such as Friends of the Environment.
- Provide information to guests at the resort community regarding water and energy consumption, maintenance or enhancement of terrestrial and aquatic ecosystems, and waste disposal, reuse or recycling.

SUSTAINABLE DESIGN RECOMMENDATIONS

In terms of building recommendations, a review of the practices and specific solutions employed by three award-winning ecolodges was conducted because of the suitability of these solutions to resort developments in the Caribbean: Tiamo Resorts, South Andros (Bahamas), Maho Bay Camp, St. John (U.S. Virgin Islands), and the Bay of Fires Lodge, Tasmania (Australia). These resorts were chosen because of their locations in pristine natural environments with sensitive terrestrial and aquatic ecosystems, representing conditions found throughout the Bahamas and the Caribbean. The selected resort developments faced similar challenges in terms of adhering to the principle of ecological sustainability. Furthermore, maintaining biodiversity, protecting habitats, minimizing waste, water and energy consumption, and contributing to a strong sense of place were goals that developers of these resorts had in common. In all cases, these resort developers also paid

particular attention to principles of sustainable design that emphasized building construction, architecture and materials, resulting in the following recommendations.

- Remove vegetation for building construction by hand with the aim of preserving as much of the vegetation as possible. The shade created by the vegetation acts as a passive building cooling system, thereby also reducing energy consumption.
- Design buildings with wrap-around porches, high-pitched and reflective roofs in order to cool buildings in an energy-efficient way.
- Design buildings in accordance with the vernacular style of the area or an interpretation thereof, since this style typically relies on the use of local materials and traditional construction techniques. If these materials can be supplied locally, reduction in transportation also reduces greenhouse gas emissions. However, if the harvesting or manufacturing of local building materials relies on unsustainable practices, import materials that have been sustainably harvested from elsewhere.
- Position windows and doors to create cross-ventilation and install ceiling fans to create air circulation and hence, cool the building.
- Use recycled, reused or sustainably harvested materials.
- Minimize construction waste.

POWER GENERATION – ALTERNATIVE ENERGY SOURCES

With advances in technology and an increase in demand, power generation utilizing alternative energy sources is now a feasible option in terms of cost. Because of the

sub-tropical to tropical climate in the Caribbean with many sunny days and temperatures ranging from 70°F to 80°F, the use of solar electricity generating systems is highly recommended. At Tiamo Resort and the Maho Bay Camp, thermal hot water systems are also used for showers and kitchen facilities. Each two-person bungalow is fitted with a 30-gallon heater and the commercial kitchen utilizes two 50-gallon heaters at Tiamo Resort.

WASTE WATER TREATMENT AND WATER CONSUMPTION

Black water waste is one of the most detrimental wastes to near-shore tropical aquatic ecosystems, and hence, building construction and black water waste disposal should not be permitted in proximity to the coastal zone (see § 5.x). In order to treat black and grey water waste and reduce water consumption, resort developers should adhere to the following recommendations.

- Install low-flush composting toilets
- Collect rainwater to be used for showers and laundry facilities
- Use biodegradable soap for showers, laundry and kitchen

WATER

Even though the southern district of Abaco Island has an abundant supply of fresh water from an enormous water lens located south of Crossing Rock, fresh water is one of the most precious resources on most Caribbean Islands with limited surface water supply from lakes and rivers. Therefore, water consumption is an important issue in resort development since tourists also tend to use a lot more water than

local residents. The following recommendations are intended to minimize water consumption:

- Install pull-chain showers and spring action faucets.
- Install monitoring devices in every guest room.
- Collect rainwater for use in showers, laundry and kitchen facilities.

REDUCE, REUSE AND RECYCLE

Because of the limited capacity for waste disposal on small Caribbean islands including the Abacos, efforts to reduce, reuse and recycle paper, glass, aluminum and biodegradable materials are critical in order to protect the environment. At the Maho Bay Camp, glass bottles and aluminum cans are reused in a very innovative way by turning trash into treasures in the form of glass blown objects and jewelry. In addition, the resort offers course in these art forms thereby creating a unique tourism experience and educational opportunities. Using discarded fabrics as cleaning rags and encouraging guests to leave maps, magazines and guidebooks behind reduce the use of paper products. In the vegetable garden, old glass bottles are used as construction material for the raised beds.

5. CONCLUSION

As indicated in the introduction, the goal of the present study was to apply and evaluate the Tourism Optimization Management Model (TOMM) using a proposed resort at Long Beach on Abaco Island as a case study. During the application, certain deficiencies were identified related to terminology and the scope and process of the context analysis. Consequently, the context analysis was expanded to include a statement of a tourism product or product concept that is used to guide the situational analysis, and separate sections were added to focus on external, demand and supply factors. These changes resulted in a new process model – the Sustainable Tourism Optimization Model (SUSTOM). In order to guide application of the model, a literature review of the sustainable development, sustainable tourism development and ecotourism concepts was conducted leading to the adoption of a particular definition of sustainable tourism as tourism development that improves the quality of life for the host population, protects and conserves the environment, and provides tourist satisfaction. This tourism-centric approach is based on recognition of a theoretical divide between sustainable development and sustainable tourism development, based on differences in underlying development paradigms and achievement of sustainability principles. According to the definition used for this study, SUSTOM provides a framework for implementation of sustainable tourism by relying on community participation in the planning process to identify current and potential impacts, expectations, and outcomes from tourism development. Because of situational differences, different communities have different priorities and expectations from tourism development

resulting in different development pathways. In this sense, there is not a single definition or path to sustainable tourism development, but SUSTOM can be viewed as being based on an adaptive paradigm (Hunter, 1997).

5.1. LIMITATIONS OF THE STUDY

In terms of limitations of the study, access to and availability of data were issues encountered during the application of SUSTOM to the resort development, in particular with respect to statistical information and tourism documents for the Bahamas and Abaco Island. Given the limited resources available in small island states, this lack of information may be an issue with tourism planning elsewhere in the Caribbean and other less developed regions.

5.2. FUTURE RESEARCH

In terms of future research, it would be advantageous to apply the Sustainable Tourism Optimization Model (SUSTOM) to other tourism planning scales, such as regional planning. To allow for allocation of different tourism scenarios to different management zones (prescriptive zones), this would require the addition of one more step in the context analysis, and development of separate monitoring programs for each management zone similar to the LAC methodology.

Because of the lack of statistical data and tourism documents, further studies could also be conducted in terms of marketing and promotion of Abaco Island. In order to evaluate the monitoring and management response programs, it is also recommended that the model be used for a longitudinal study.

5.3. SIGNIFICANCE OF STUDY

In 2005, the tourism industry constituted the fourth largest economic sector in the world, with 806 million international tourist arrivals and tourism receipts of US\$ 680 billion. By 2020, the World Tourism Organization forecasts that the number of international tourist arrivals will double to reach nearly 1.6 billion. As one of the most important economic sectors globally, *Agenda 21 for the Travel and Tourism Industry: Towards Environmentally Sustainable Development* specifies a leading role for the tourism industry in the implementation of sustainable development policies. In the Caribbean, the CTO has adopted these global policies and national governments are currently seeking to implement these policies. Since no other comprehensive tourism planning methodology currently exists (Choi & Sirakaya, 2005), it is anticipated that SUSTOM may have broad applicability as an integrated, community-based planning framework that can be used to address tourism planning issues in a variety of settings.

Application of SUSTOM to tourism planning on Abaco Island was based on the recognition that there are limited resources available for planning, monitoring and management of tourism development in many small island states in the Caribbean, including the Bahamas. At the same time, these islands may be particularly vulnerable in terms of environmental degradation, because of increased developmental pressures on the coastal zone (see for instance BEST, 2005a). Hence, the study proceeded by taking these factors into consideration in the development of monitoring methods and details relying on data that is accurate, available and cost-effective to collect. Therefore, monitoring methods would rely on

the gradual transfer of knowledge from experts to community members, tourism stakeholders, and NGO's for implementation. It would also depend on identification of local resources, participation and collaboration. Because many Third World destinations are growing in popularity (Mowfort & Munt, 2003) and face similar conditions as those encountered on Abaco Island (see for instance Wilkinson, 1989), it is anticipated that the Sustainable Tourism Optimization Model (SUSTOM) may play a large role in directing sustainable tourism development in these areas.

For the present study, SUSTOM was applied to site planning and management, but it may be possible to extend the model to other tourism planning scales. According to Gunn (Gunn, 1997, 2002), the fundamental challenge of tourism planning at any planning scale is matching demand and supply factors. Since the context analysis of SUSTOM is geared to an understanding of conditions affecting the critical components of the tourism system, including demand, supply and external factors, it is conceivable that the process model could be extended to national/regional tourism planning. However, it may require some procedural modifications. Based on the LAC methodology, additional planning steps for the allocation of alternative tourism scenarios (opportunity classes) to different Tourism Development Zones could be incorporated as demonstrated by Shaefer, Ahn and Lee (Shaefer et al., 2002). As an outcome of the application of SUSTOM to resort development on Abaco Island, a number of policy and program recommendations also came to mind, as described below.

5.4. RECOMMENDATIONS

In order to provide long-term economic benefits and protect and conserve the environment upon which the tourism system depends, the following national policies and regulations should be established for the Bahamas:

- Establish local monitoring programs with emphasis on a gradual transfer of knowledge and responsibilities from experts to community residents, NGO's, and other tourism stakeholders
- Develop policies and programs to create intersectoral linkages between tourism and agriculture so that fruits, vegetables, fish and meat products are locally grown and produced.
- Establish guidelines that prohibit residential construction in coastal zones due to the potentially harmful impacts to terrestrial and aquatic ecosystems, and danger to human life and property due storm water surges. It is recommended that a flood line be established at eight meters above sea level (24 feet).
- Establish building codes to promote the architectural heritage of the Abacos.

5.5. IMPLICATIONS FOR LANDSCAPE ARCHITECTURE

As the application of SUSTOM to destination and site planning illustrates, the SUSTOM environmental planning process and master planning are interdependent and interrelated processes that result in a greater emphasis on achieving specific goals and objectives in landscape development. Information obtained during site inventory and analysis forms part of the foundation for development of

environmental optimal conditions, indicators and standards as part of the SUSTOM monitoring program, and in turn the monitoring program informs site development by establishing specific goals to be achieved (Fig. 5.1). This integrated process is not only relevant for the resort typology, but could conceivably be extended to other typologies such as parks and recreation and community planning. Furthermore, the SUSTOM monitoring program can serve as the foundation for performing a post-occupancy evaluation by establishing specific conditions that site development should achieve. During a post-occupancy evaluation, actual conditions would be compared to desired conditions in terms of experiential, socio-cultural and ecologic factors. Therefore, the SUSTOM planning process has wider applicability as an environmental planning and management framework that can be used as a site development tool by landscape architects.

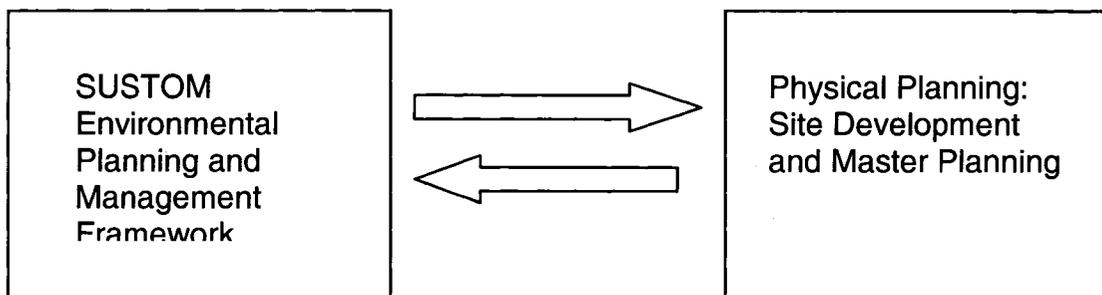


Fig. 5.1. Relationship between Environmental Planning and Management and Site Development.

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APPENDIX A. EXPLORATION OF RESIDENT ENVIRONMENTAL VALUES

INTERVIEW GUIDE

Are you a permanent resident on South Abaco Island?

Are you a Bahamian citizen?

Are you 18 years of age or older?

If participant answers no to any of these questions, thank them for their interest in participating. Otherwise, proceed to next question.

How would you describe south Abaco to a person who has never been here before?

What qualities about south Abaco do you particularly like?

Themes

- Activities – church-going, events, cook-ups, fishing, farming
- Community
- culture, cultural practices, tradition
- Natural – pristine beaches, untouched natural beauty, sea, coral reefs
- Overall quality - pace of life, friendliness

APPENDIX B. EXPLORATION OF TOURIST ENVIRONMENTAL VALUES

INTERVIEW GUIDE

- Why did you choose Great Abaco Island as your vacation destination?

- What characteristics about Great Abaco Island do you particularly value as part of your tourism experience?
 - Activities - commercial / pleasure fishing
 - religion,
 - social life
 - culture, cultural practices, tradition
 - physical characteristics – pristine beaches, untouched natural beauty, churches, houses, architecture, colours
 - overall quality - pace of life, friendliness

APPENDIX C. EXPLORATION OF STAKEHOLDER ATTITUDES TO TOURISM DEVELOPMENT

Interview Guide

1. Which category best describes you?
 - Hospitality management / tour operators
 - Government Official
 - NGO representative
 - Real Estate Developer
 - Business proprietor

2. What are your thoughts about the nature and scale of tourism on Great Abaco Island?

3. What are your expectations for tourism on Great Abaco Island?

4. What are the opportunities relating to mass tourism and special interest tourism on Great Abaco Island?

5. What are your fears regarding mass tourism and special interest tourism on Great Abaco Island?

6. Should Great Abaco Island be targeting specific market segments or any potential tourists? Why?

7. What sort of impacts have you noticed as a result of tourism?

8. If further tourism growth should occur, what sort of infrastructure should be developed and where? Why?

APPENDIX D: EXPLORATION OF STAKEHOLDER ATTITUDES TO TOURISM DEVELOPMENT

RESEARCH METHOD

OVERVIEW

To explore stakeholder attitudes to tourism development on Abaco Island, a phenomenological research methodology was deemed appropriate, because of the opportunities this methodology offers for understanding the lived experience of an individual, and the interpretation and meanings that this individual ascribes to perceptions of reality. This allows for the exploration of multiple realities arising from differences in individual perceptions (Laverty, 2003; Polkinghorne, 1989; Rudestam & Newton, 1992). The semi-structured interview was used to gain insights into stakeholder attitudes, specifically with respect to identification of market trends and opportunities, and current and potential issues associated with tourism development on Abaco Island.

SAMPLING METHOD

Purposive and snowball sampling methods were used to select stakeholders belonging to six different categories: hospitality management, tour operations, government ministries, non-government organizations (NGO's), real estate development and business operations. All research participants were older than 18 years of age.

PROCEDURE

Most subjects were contacted by phone and appointments were made to interview them at their places of work. However, one research participant was introduced to the interviewer by another participant. While the intention was to interview research participants individually, on three separate occasions other stakeholders joined the meeting. The interviews were conducted by the researcher in person after consent to participate had been obtained from the research participant(s). The Information Letter (Appendix F) was handed to the subject, and its content was clearly communicated including the subject's right to terminate the interview at any point in time without any reprisal, and with the immediate deletion of the tape recording. With respect to government officials, a written consent was obtained. The interview took approximately 30 minutes and was tape-recorded with the subject's permission.

MATERIALS

In order to evaluate and modify the Tourism Optimization Management Model (TOMM), the interview guide developed by Manidis Roberts Consultants was used to explore stakeholder attitudes to tourism development (SATC, 1996: p. 48) (Appendix E). The interview questionnaire consisted of seven questions, with the first section aimed at identifying broader goals and expected outcomes from tourism development on Great Abaco Island. The purpose of the second section was to identify opportunities from mass tourism and special interest tourism on Great Abaco Island, with specific objectives aimed at identifying

market growth, market trends and opportunities. The purpose of the third section was to identify current and potential issues related to tourism on Abaco Island. Stakeholders were asked to identify current impacts from tourism and fears that they may have with respect to future developments. The purpose of the last question was to identify where and what type of infrastructure should be developed if tourism growth occurs.

ANALYSIS

A content analysis of the tape recordings was conducted in order to identify common themes and discrepancies. This content analysis relied on well-defined research questions and a thematic reading of the digital recordings, rather than on a coding scheme. The digital recordings were listened to once for a review, and the second time responses were flagged as indicative of issues, opportunities, and infrastructure improvements, according to the broader themes of the interview questionnaire. These groupings were analyzed for common themes and discrepancies. To form a narrative, quotations were extracted from the digital recordings. In order to ensure the confidentiality of stakeholders' identities, fictitious names have been used.

RESULTS

Eleven stakeholders, representing six different stakeholder categories, participated in the study (Table I.1).

Table I. 1. Composition of Sample Population

Category	Number of stakeholders
Hospitality management	1
Tour Operator	1
Government Official	4
NGO representative	2
Business Proprietor	1
Real Estate Developer	2
Total	11

Expected Outcomes From Tourism Development

When asked “What are your thoughts on the nature and scale of tourism development on Abaco Island?” most of the research participants agreed that tourism is relatively undeveloped. Although the pace of development was not a common issue, a general concern about the nature and scale of tourism permeated most conversations as illustrated by the following quotations.

“Well, it’s growing (tourism)...I mean it’s growing at an alarming rate...” (Michael).

“It seems that we are in a real rush now to develop... and we need to think about the next generation. We need to set aside land, to create national parks so there’s something left for everyone” .

“I do have a concern with very very large developments and big development companies that will discover the island and

want to come in and convert it to any other island... I am hoping that if we, as a community, we have a master plan and move forward on that, that we can control and discourage this kind of development. We will need to focus on keeping that (the environment) healthy and that requires community support " (Peter).

"If you start to degrade the environment here, then all of a sudden it is unattractive to the tourists. We can directly tie the environment to tourist dollars " (Lisa).

EXPECTATIONS FROM TOURISM DEVELOPMENT

In terms of expectations from tourism on Great Abaco Island, the participants were unanimous in pointing to economic benefits: economic growth, development, job opportunities, business opportunities, and diversification. As Theodore and Lisa succinctly described the importance of the tourism industry:

"Well, tourism in the entire country is pretty much a breadwinner for the country " (Theodore).

"Tourism is what drives the economy here...it wouldn't be much of an economy except for the tourist dollars that are coming inso... you know you can't stop...I mean no one has any interest in stopping it " (Lisa).

While they focused on the overall economic growth from tourism, two of the business leaders in Sandy Point emphasized more specific expectations in terms of more business and job opportunities.

"Oh, it (tourism) definitely enhances the business because we are a small population, and sometimes when the tourists come, they look for sundries ...so it definitely enhances business" (Sandie).

"It's going to bring a boom to the area (southern Abaco) ...in terms of more opportunities for operators... you could have more persons with water sport, you could have more employment for the locals" (Jeff).

Continuing the common theme of economic expectations from tourism, Walter, a government employee in the tourism industry, looked at the potential role that expansion of the tourism industry on Abaco Island would have:

"I think that we have the possibility of building and developing a tourism product that is at a sustainable level that will economically diversify our economy" (Walter).

Thus, despite representing different stakeholder groups, including environmental organizations, the participants shared a common expectation from tourism development – economic growth and development for Abaco Island.

MARKET TRENDS AND OPPORTUNITIES

In terms of opportunities for mass tourism, there is an overall consensus that this type of development is inappropriate for Abaco Island, because of its environmental impacts and dissonance with the general character of the island.

"I don't think that you could ever do mass tourism. I don't think that's viable at all" (Richard).

"I would not see high-rise type construction condo-style hotels here with a casino. That's just not the Abaco style...it would not fit" (Ronald).

While research participants chose to emphasize different aspects of ecotourism, there is again a general consensus that there are great opportunities for this kind of tourism development on Abaco Island. Ecotourism is a form of tourism development, that aims to protect and conserve the natural environment, to provide benefits to the surrounding community, and to provide education and interpretation to both resident and tourist populations regarding natural resources (Ceballos-Lascurain, 1996; Fennell & Weaver, 2005; Weaver, 2005). In recent years, the scope of ecotourism has broadened to include cultural factors that influence the natural environment (Fennell & Weaver, 2005; Weaver, 2005). With an emphasis on small-scale, low-impact resort developments, some tourism stakeholders believe that it is better suited to the fragile environment on Abaco Island.

" Obviously ecotourism is growing huge...we would love to see Abaco going more in that direction with smaller, more sustainable development We are really trying to promote smaller scale, less impact development so that we still have an environment in fifteen years " (Lisa).

I think you could do small-scale and bring some people on a very small and low-key scale, and that would work "
(Richard).

Other participants emphasized the opportunities for nature/ecotourism based on changing consumer preferences toward more sustainable tourism.

" I would say something that is more in tune with the nature of things...the landscape...something that is part of nature...ecotourism is very very big in the U.S., very big in Canada, very big in Europe. The Europeans are very much in favour of ecotourism and really seeing sustainable resort development in tune with the environment " (Ronald).

Based on the availability of natural resources, other research participants identified opportunities for nature/ecotourism in terms of the unique ecosystems present on Abaco Island.

"When we talk about nature tourism we have a lot to offer...you know, we have a well nourished pine forest...we have thousands of acres of it....the species in there that's what's important...you know... the habitats, the plants, the diversity of the plants, what we call the coppice. Some people call it the dry-land forest. There's a lot of different plant species... bird species..... We have blue holes that also have a lot of history to them" (Michael).

"We got the nature reserve...you know the national park...if that could be developed with proper hiking trails and so on, that would go a long way (to attract nature tourists) " (Theodore).

Fishing....it's a comparative advantage... We have some of the most beautiful beaches in the world, so that's also another natural competitive advantage...We have whale watching and you (the interviewer) swam with the dolphins the other day..... the corals are a natural phenomena....and (we hope to) be able to appeal to the type of tourist that can appreciate those things.... " (Peter).

In terms of special interest travel, sport fishing was a common theme identified.

Based on a document analysis of local print media, it appears that the island is

currently hosting sport-fishing competitions, and a number of tour operators specialize in bone-fishing¹ expeditions.

"Bone-fishing is another (special interest tourism) that is really marketed well. We have a lot of good bone-fishing guides around here " (Michael).

"Fishing. Yeah, I think you could bring people for fishing " (Richard).

In terms of other opportunities for special interest tourism, one respondent suggested cultural/heritage tourism because of the rich cultural heritage of the Abacos.

"I look at culture tourism from a slightly different perspective. Cultural tourism... When most people think of cultural tourism, they think of local festivities like the Junkanoo. When I think of culture tourism, I think more of what we have historically, you know, the old plantations, old settlements that were once inhabited" (Michael).

Another common theme is expansion of second-home tourism that provides a 'home away from home' experience for families. This type of tourism was viewed

a

as more appropriate for Abaco Island, because of its small-scale development that fits better with the island's character.

" I think that we think of it more as in term of visitors who come with their families...where mother and father come along... We do have a niche for second-homes and what that does is to provide families with opportunities to dine together...you feel like you are in a 'home away from home' " (Walter).

" Like I said, we have people who come here fishing. There is a need to try and broaden that, to attract other tourists than the fishermen that come in. The average fisherman that comes would not bring their family, because there is very little for the family to do while they fish. There is definitely a need for expansion " (Theodore).

To summarize, the most commonly identified opportunity is ecotourism/nature tourism based on environmental concerns, global market trends and a competitive advantage, in terms of the availability of natural resources on Abaco Island. Ecotourism is viewed as a small-scale, low-impact type of tourism development that is conducive to the natural and socio-cultural environments. As a form of sustainable tourism, it is believed that it will have less impact on sensitive ecosystems and better correspond to the general character of Abaco Island. According to two of the research participant it is a growing market segment in the U.S.A., Canada and Europe.

Related to ecotourism is tourism based on natural resources such as bone-fishing. Already, Abaco Island is a bone-fishing destination, but this market can be expanded. Currently, many sport fishing enthusiasts come to the island without the family, because there is little for the family to do while a family member goes fishing. Hence, expansion of the sport fishing market could be tied to expansion of family vacations, if this tourism product is developed better. Currently, Abaco Island is a second-home tourism destination, but this market can be significantly expanded. Because of the general character of the island, it is felt that second-home tourism offers better opportunities for family vacations. Based on the cultural resources of the island, culture/heritage tourism is another market opportunity related to the Loyalist heritage with old plantations and settlements.

CURRENT AND POTENTIAL ISSUES

On Abaco Island the most commonly identified impact from tourism has been positive in that it has resulted in overall economic growth and development.

"I think tourism has had a tremendous impact because when you think in terms of our local economy, tourism has been a leader in economic growth and development. The impact of tourism basically benefits everybody" (Walter).

"On the good side, the economics. I think tourism is a good thing... it benefits the island" (Vincent).

"It has a major impact (tourism)...what it does is it trickles down to everybody you know...I mean... the local grocery store makes money, and in my case, they (tourists) visit my place. Obviously I got a staff that I can keep employed, and I've got guides that I need to hire to take them fishing, so it's a trickle down effect" (Theodore).

As Theodore pointed out, economic growth has resulted in more job opportunities and business opportunities for local residents. Despite some resentment toward Disney's operation on Castaway Cay (Gorda Cay) that has not resulted in any significant economic benefits for the local population economic expectations, Susan concedes that it has had some economic effects in terms of job opportunities.

"With the tourism, with the Disney, you know, people go over working for them, so it has been a help because people have been employed" (Susan).

ENVIRONMENTAL IMPACTS

Despite the overall positive effects from tourism, currently there are also a few environmental issues in terms of depletion of natural resources, primarily fish, crustaceans and mollusks.

"Already we're seeing huge drop-offs of the conch, crawfish and swordfish populations " (Lisa).

"...our fisheries resources has really been impacted upon.....Well, the conchs would definitely be over-fished. Any person could tell you that some years ago you could just go right off the shore and find conch and now you can't really find conchs right off the shore anymore. A lot of this is also from locals also fishing because of demands for these products from the pressures of tourism ...You know we've seen tourists catching crawfish out of season...so it's putting strain on the resources that way" (Michael).

However, as Michael pointed out, it is difficult to infer a direct causal relationship between depletion of the fish stock to tourism development; over-fishing may also be attributed to economic growth and development. In addition to over-fishing, coral reef damage is another issue that again is difficult to directly attribute to tourism.

" I understand that some of the reefs have been damaged in certain ways from what I have read, but reef damage can come from a lot of different things, so we have to be careful with who we blame " (Vincent).

Degradation of terrestrial and marine habitats is a potential issue, with serious ramifications for the connected upland-wetland-sea grass-coral reef ecosystems.

" You know... we have a concern about people ripping out the mangroves or destroying sand dunes just because of the repercussions that has for everyone.....If any one part of the ecosystem brakes down, then everything else starts to brake down " (Lisa).

" We have some very sensitive ecosystems that are nursery habitats for fish, crawfish and all that...things that people like to catch and eat...there aren't that much of that so it wouldn't take much to destroy that habitat " (Lisa).

Pollution of these fragile environments is also viewed as a potential issue.

" ...it wouldn't take very much pollution on the coral reefs to do some pretty serious damage " (Lisa).

" With any large development you are always going to have environmental impacts... you know...you're gonna have impacts on the water tables...really impact our water lenses because we don't have no reverse osmosis system...with implementation of the amenities of the golf courses and what not...you are going to have run-offs into these lenses....and you know most of these golf courses are by the sea, and that's another issue in terms of the reefs " (Michael).

SOCIO-CULTURAL IMPACTS

Although not a common issue, exposure to other cultures and lifestyles have led to some socio-cultural impacts in terms of changes in values, moral standards, and behaviours.

" (tourism has resulted in) A dramatic increase in drinking... " (Richard).

" Obviously, persons coming from different cultures coming in to a place would bring somewhat their culture to that place and impact the local persons to the extent that they allow themselves to be impacted " (Ronald).

Richard, a Canadian real estate developer, also believes that tourism development is starting to create some resentment toward tourists and foreign investors.

" And I think it has created some resentment and some sense of entitlement. They did not used to see (the disparities in income and wealth between tourists and residents), but now they have cars. I think that they now think that they deserve to be given stuff. So now they look at us (tourists) and think: "you should be giving me some (referring to the distribution of the benefits from tourism) " (Richard).

Currently, this is not perceived to be a large issue, but the potential socio-cultural effects from increased tourism development is a concern shared by a number of the research participants. With anticipated tourism growth, changes in values, moral standards and behaviour may be potential outcomes.

" Security. With development you are going to have a significant amount of exposure to the values of success and that also brings about certain negative developments in terms of crime and security and the possibility of a shift in morals and values " (Walter).

" I guess if there would be a fear, it would be getting overcrowding...the last thing we want is to turn South Abaco and Abaco into another Nassau; we would like to have tourists but we would like that to be spread out " (Theodore).

When referring to the situation in Nassau, Theodore meant not only traffic congestion, but the increase in crime associated with population growth.

INFRASTRUCTURE

To conclude the interviews, subjects were asked for suggestions on what infrastructure needs to be developed, where and why, should tourism growth occur.

A common theme is the expansion of social services: hospital, medical and dental clinics, police and emergency stations. Presently there is no hospital on Abaco Island, so people requiring emergency services require air transportation to Nassau. With a growing tourism population, including families with small children, it was felt that the situation is not adequate to address an influx of people to the islands.

" Personally I don't think the infrastructure is really in place to really keep up with the development...and what I mean by that is the hospitals and all of the essential services.... you know...they are not growing as the developments are growing...for hospital services, medical service, police services, you know all of these things need to be addressed " (Michael).

" We need probably a hospital and some satellite clinics at either end of the island.and we need more police stations " (Jeff).

" Probably better access to health care and dental would be positive. We should have a medical clinic and dental right here (Long Beach) " (Richard).

In order to service a growing tourism population, it is also foreseen that Abaco Island will need to expand its labour force by inviting immigrants from

other Bahamian islands, since the Abaconian population is too small to fill this need.

" More housing is needed...it's very difficult to find affordable housing on Abaco and because that housing is so scarce the housing rates are very high...the rental rates are very high and so different communities or settlements would need to be developed to disperse people " (Ronald).

" ...probably more places for people to live in... like apartments and so on. There is not a pool for the work force that you can pick from in the area, so...you know...which means that we need people from other parts of the Bahamas who would be looking to come here and work (Theodore) " .

In terms of required infrastructure, another common theme is improvements in transportation, telecommunications and utilities, specifically roads, ferry services, airport, telecommunication services and electricity.

" Roads would need to be developed...there's only one road presently and that's because developments are in a lot of different places " (Ronald).

" I think that we need to improve our roads and even provide more street lightning....I think that we also need to improve our airport " (Jeff).

..you know the airport really needs to be addressed.... " (Michael).

"One of the other things that we need to look at is proper electrification for the load that will come. These big resort development draw a lot of electricity and so it's important to have a proper electrical plan and systems available to support these without the blackouts. Our telecommunications ...is not as adequate as it needs to be (Ronald) " .

"Some transportationmaybe a ferry service would be good...right here would be a good spot (Long Beach). I see it as a centre for transportation, health care, dental and access to stuff.... This spot is really close to Nassau and it would benefit the whole southern part of the island" (Richard) .

To ensure that resort developers and tourists abide by environmental laws, environmental impact assessments, and building codes, better enforcement is required so that tourism growth does not result in irreparable damages to sensitive ecosystems.

"I mentioned enforcement...If all of the laws that we have would be enforced, it would be great. If the environmental impact assessment were enforced, it would be great" (Lisa).

"You know...our laws need to be strengthened so that ...our environmental concerns...We need to have more policies ...you know...and guidelines...and we need more than anything enforcement...we need persons to be out there looking into these sorts of things (environmental impacts) (Michael) " .

To meet the requirements of the tourism and hospitality industries, as well as improving individual opportunities in a growing economy, a common theme that emerged is also the need for higher education and skill training.

"I think we need more skills...to have a higher skill set...we need executive chefs, general managers, persons who are going to be able to look after IT. These are the types of skill sets that you need in order to sustain it (tourism)..so basically the stuff that I think is critical is development of human resources" (Walter).

"At the resort where I work we are having a major problem with getting good talent, and a lot of places are really trying to find good people.....In the schools it needs to be stressed to the students how important it is to have a proper education for future advancement in life and I don't

think that a lot of students take advantage of that...so that educational infrastructure needs to be developed" (Ronald).

With higher anticipated resident and tourist populations, waste disposal is also an issue that Peter, another Canadian real estate developer, thought needs to be addressed, and landfill sites, recycling stations, as well as treatment facilities need to be constructed.

"We need to keep it pristine. As you know, we recycle in Canada, but in here we haven't been able to do that. There are some logistics...But there is no reason why we couldn't have a glass crushing facility...there is no reason why we couldn't have an aluminum recycling station, that could actually be economically sustainable...there's a lot more vehicles on the island, that I have noticed during the time I've been here, and these vehicles at some point are gonna have to be retired. There has to be an area on the island where we have scrap yards...an area that is strictly devoted to that to ensure that there is no leakage of toxins...to ensure that it does not end up in our waters" (Peter).

Infrastructure requirements have been summarized in Table. I.1.

Table I.11. Required Improvements for Tourism Growth on Abaco Island.

Common Theme	Specific improvements
Expansion of social services	<ul style="list-style-type: none">• Hospital in Marsh Harbour• Medical clinics• Dental clinics• Police stations• Emergency stations• Affordable housing
Infrastructure	<ul style="list-style-type: none">• Roads• Transportation• Utilities• Telecommunication
Legislation and enforcement of legislation	<ul style="list-style-type: none">• Environmental impact assessments• Environmental regulations• Building regulations and codes
Human Resources	<ul style="list-style-type: none">• Education• Skill training
Waste disposal, reuse and recycling	<ul style="list-style-type: none">• More landfill sites• Recycling stations and facilities

Source: Fieldwork.

DISCUSSION

In terms of methodological issues, the results of the study were compared to results from tourism impact studies, statistical information, and a content analysis of Bahamian newspapers. With respect to potential market segments identified by stakeholders, such as ecotourism, cultural (heritage) tourism and adventure tourism, these niche markets have shown considerable growth worldwide (WTO). Ecotourism has been identified by the Caribbean Tourism Organization (CTO) and CARICOM as a market segment particularly suited for conditions in the Caribbean. In the Bahamas, the Ministry of Tourism launched the Ecotourism Program in 1992. Also consistent with policies and planning initiatives by regional organizations, such as CTO, CARICOM and OAS that have

identified ecotourism as a niche market particularly suitable for development in the Caribbean.

In terms of current and potential impacts from tourism development, the results of the present study concur with a large number of studies documenting the positive and negative effects from tourism growth (see for instance Mathieson & Wall, 1982; Pattullo, 2005). One important difference is the positive economic impacts that tourism has had in the Abaco Islands, in terms of more job and business opportunities for the local population. Despite general criticism from tourism researchers regarding the distribution of economic benefits to local people (Mathieson & Wall, 1982; Pattullo, 2005; Sharpley, 2000), the “trickle-down” effect is observable in the increase in personal vehicles on the island. This may be attributed to the virtual absence of metropolitan commercial interests, in favor of locally owned tourism enterprises. Thus, the results of the stakeholder interviews appear to be trustworthy because of triangulation with results from other research results.

LIMITATIONS

To explore stakeholder attitudes towards tourism development, a qualitative research method was chosen, the semi-structured interview, because of the insights this method would provide. Because of the non-probabilistic sampling method used, the results of the study may not be generalizable to the general population of stakeholders.

APPENDIX E: EXPLORATION OF COMMUNITY AND TOURIST VALUES

OVERVIEW

To explore resident and tourist environmental values, a phenomenological approach was deemed appropriate because of the opportunities this methodology offers to understand individual interpretations and meanings given to events and conditions that the individual experiences. Phenomenology is concerned with the study of lived experience; with an emphasis on the world as lived by a person (Lavery, 2003; Polkinghorne, 1989; Rudestam & Newton, 1992). Hence, this research methodology allows for multiple realities arising from differences in human perception (Lavery, 2003). In order to gain insight into environmental values, the semi-structured interview was selected as an appropriate qualitative method. The emphasis of the studies was on discovering commonalities between subgroups of the sample population arising from individual perceptions, not on generalizable conclusions.

For the purposes of this studies, a value can be defined as “the fundamental things that people care about and consider important about a particular place”, and ‘environment’ as the “all the conditions, circumstances and influences surrounding, and affecting the development of an organism or group of organisms” (Ceballos-Lascurain, 1996: 19).

SAMPLING METHOD

A non-probabilistic sampling technique, purposive sampling, was used to select permanent residents living in the community of Crossing Rock on Great Abaco Island, who were Bahamian citizens and over the age of eighteen years old. With respect to the tourist sample population, tourists were selected meeting the same age requirements as residents. To achieve a maximum diversity of individual perceptions of environmental values, individuals were recruited at different times of day and from various subgroups of the sample population in terms of gender and age.

ANALYSIS

A content analysis of the digital recordings was conducted that relied on well-defined research questions and a thematic reading of the digital recordings, rather than on a coding scheme. The digital recordings were listened to once for a review, and the second time responses were flagged as indicative of particular environmental characteristics that the research participants valued. Responses were grouped according to the broader themes of the interview questionnaire. These groupings were analyzed for common themes and variations. Upon reviewing the recordings the third time, quotations were extracted to form part of a narrative. All names used in the narratives are fictitious to ensure the confidentiality of the research participants.

EXPLORATION OF COMMUNITY VALUES

PROCEDURE

Research participants were contacted by knocking on residents' doors or were recruited in public areas. One person was contacted based on an introduction from a second-home owner at the *Nest at Long Beach*. The interviews were conducted in person by the researcher at the home or at the workplace of each research participant. Consent was obtained from each subject, with the assertion that he or she could withdraw from the interview at any time without any repercussions. The Information Letter (Appendix B) was given to the subject, and its content was clearly communicated. The interview took approximately 20 minutes and was tape-recorded with permission of the participant.

MATERIALS

The interview questionnaire consisted of three questions, with the first question serving as an introduction to the subject and the following two questions comprising the core of the interview (Appendix A). The first question was intended to elicit thoughts and reflections on the characteristics of the environment in which the research participant resides. The second question was aimed at exploring aspects of the environment in Crossing Rock and the surrounding area that the participant particularly valued.

RESULTS

Eight residents from Crossing Rock were interviewed, representing various subgroups of the population in terms of age and gender. With an estimated population of 160 people, this sample constituted five percent of the total population. Common themes were identified based on a thematic reading of the digital recordings.

In terms of overall character of place, most participants felt that safety and a lack of crime were the most important environmental values, with some participants linking this to a very strong community bond.

"Well, we love it here. It's real quiet. I have been living here all my life, so you can't find no better place to go right now than the people right here. We have no crime here, so that's why we love it here. We don' have no noise here, we don' have no stealin here or killin or nothing like that here, and we look at each other as one.Other places you go, you have to put bars on your door, you have to put bars on your window, you have to keep two or three dogs with you, but you don' have to do dat here" (Barney).

Some of the community members have lived elsewhere and relate the overall characteristics of Crossing Rock to other places.

Crossing Rock is quiet. There is no major violence, sometimes we have a bit of misunderstandings, parties.... too

much drink. But compared to many other islands, it is much quieter " (Will).

"We don' have no killin or anything like that here. We don' have that around here" (Victoria).

"I like it here, it's real quiet and we 're crime free."
(Andrew)

In these conversations, personal safety and the lack of crime are overall qualities that are also mentioned in combination with peace and quiet. Although 'peace and quiet' can be interpreted within this context, it is also possible that these characteristics are intrinsically valued, hence constituting a variation on the 'safety and crime-free surroundings' theme.

"It's very quiet and all like that, you know. In comparison to other places, I prefer it here. It is very quiet, people don' bother nobody or anything like that. It's very quiet and very peaceful. I prefer it here and if you stayed here, I'm sure you would like it here too" (Lilly). .

"It's quiet and slow. I like the quietness and friendly people. It's very quiet; it's like a retirement home"
(Jay).

Thus, in terms of the overall character of place two common themes emerged: 'safety and crime-free surroundings' and 'solitude through a small population'. Through the interviews, a very strong sense of community also emerged as a very important environmental value for all the respondents.

"...We look at each other as one. We love everybody and everybody loves us so that's the reason why we love it here" (Barney).

"Oh, I love everyone here" (Lucia).

This reading is not only based on direct responses to the question of what they value about the environment in Crossing Rock, but through descriptions of community activities and events that everyone participates in. The cultural and social institution of the church plays a very important role in the lives of Crossing Rock's community members as a gathering point. The people of Crossing Rock belong to three different denominations: the Anglican Church, the Seventh Day Adventist, and the Baptist Church. Church services usually occur more than once a week and the churches also organize choir practices, Bible school, fund raisings, and cook-ups. Thus, the common themes of 'strong community bonds' and 'the centrality of religion and church-going' are very difficult to separate from each other. On the importance of church to community life, Eliza describes this sentiment very succinctly:

"Church-going is really important. It's important because you can't live without Christ; without him you can't do nothing... so the Church and the pastor are really important.....The Church involves everybody; everyone gets involved" (Eliza).

With respect to the natural environment, a common theme that emerged was a pristine natural environment with beautiful beaches, coral reefs and blue holes. When asked what she valued about the natural environment, Long Beach was the first thing that came to Lilly's mind: "The beach, the sun and the shells and all of that. We have a lovely beach". While Anna can not walk to the beach herself anymore due to a medical condition, she still speaks of it: "Now... I can't go to the beach because my leg, but a lot of people go the beach swimin an enjoyin demselves". Although Will preferred to speak about the value of the natural environment to the tourist population, he nevertheless mentioned the beaches, blue holes and birds:

"The tourists when they come around they fall in love with the beaches....and the birds in the ponds, they like bird - watching.And then we got the blue holes. They're great for diving!" (Will).

Thus, the natural environment appears to be intrinsically valued, but is also valued because of the good recreational opportunities it offers its residents: swimming, fishing, bird-watching, walking and diving. Although the fishermen

mostly go diving when setting lobster traps, one of the participants particularly enjoyed the clear blue waters and the abundant marine life as part of his recreational diving experience:

" I like the sea...I'm a diver. It's a different world; it's the sweetest place to be sometimes, keeps your mind away from other things. If there's anythin I'd recommend it's going divin... it's real peaceful and quiet...an the fishes. There's a lot of things to see" (Jay).

As Jay suggests, the abundance of wildlife, fish in his case, is also a quality that other residents of Crossing Rock value. For some, the natural environment contributes to the provision of food as part of a traditional self-sustaining lifestyle. In these cases, the 'abundance of wildlife' theme takes on a different meaning.

"An we love it here. You can go down to the beach, an you can go fishin, catch your fish an come back here. We don have no money, but we still have a nice life. ...Here it's paradise. We can go out catch some crawfish an so on" (Barney).

"Because sometimes when I can't go to the shop and buy a piece of meat to cook, I can go and throw my line and catch a fish, or my son can bring me a conch, and we have a meal.....It comes in very handy, when I need to feed my children" (Lucia).

To summarize, a number of common themes were identified: (1) a safe and crime-free environment, (2) solitude, peace and quiet through a small population, (3) strong community bonds, (4) centrality of religion in personal and community life, (5) a pristine natural environment with clear blue waters, beautiful beaches and coral reefs, (6) good recreational opportunities and (7) abundant wildlife.

DISCUSSION

While this study is concerned with aggregates and not differences between different subgroups of the sample population, it appears that the men interviewed particularly value the ocean and the coral reefs. This finding may be related to differences in gender roles, since Crossing Rock is a fishing community where men still go fishing weather permitting. In contrast, the women have traditionally stayed at home and tended to the children and the garden.. This study was the first of its kind on Great Abaco Island, hence results can not be triangulated with other research results. There are limitations with this part of the study in that results may not be trustworthy and credible. Although great efforts were made to select subjects from different demographic groups, the non-probabilistic sampling method presents in terms of generalizability of the results to the general population.

EXPLORATION OF TOURIST VALUES

PROCEDURE

Subjects were recruited in the airport terminal in Marsh Harbour when awaiting their flight to Nassau or Freeport. Subjects were also recruited at *the Nest at Long Beach*, where they were interviewed in their second-homes or their rental units. Verbal consent was obtained from each subject, with the assertion that he or she could withdraw from the interview at any time without any repercussions. The Information Letter (Appendix D) was given to the subject, and its content was clearly communicated. The interview took approximately 20 minutes and was tape-recorded with the permission of the participant.

MATERIALS

The interview questionnaire (Appendix C) consisted of three questions, with the first question serving as an introduction to elicit some thoughts on the reasons why the subject chose Bahamas as his or her vacation destination. This was followed by a question to discover the characteristics of the environment on the Abaco Islands that the research participant particularly valued as part of the vacation experience.

RESULTS

Nine people took part in the study, representing various subgroups of the sample population in terms of gender and age. Three respondents were male and six respondents were female, with respondents ranging from 25 years of age to

85 years of age. In addition, three respondents were second-home owners, while the remaining six participants were short-term visitors to the Abacos.

Penny, a second-home owner, who has been coming to Abaco Island for twenty years, spoke about the reasons for purchasing a house in the south of the island and the characteristics she values about the environment there:

We were just really attracted to less people, an attractive beach, easy access in and out, plus a very easy place to put our boat in to fish. So I think what drove us south was good fishing...and the quietness and less dense with people. ...The people of Crossing Rock are very kind, open sharing, so that attracted us ". (Penny)

The characteristics that Penny appreciates about the environment emerged as common themes throughout the interviews: (1) a pristine natural environment (2) relative solitude through a small population, (3) nice and friendly people, and (4) good recreational opportunities. In terms of a pristine natural environment, the spectacular beaches, clear waters and coral reefs were often mentioned. Reminiscing about the first time she discovered Long Beach, Barbara recalled:

" You walk down to that beach (Long Beach), and I thought I had just died and gone to heaven. It was just beautiful. I just fell in love with the island then....it was the people. I love the water. I love the sunshine "

(Barbara)

Eva and Michael, two newcomers to the area, could not have agreed more.

"It's really beautiful ...like the trees...the palm trees everywhere just gives you that sense of paradise... and the white sand, and like the clear blue water ...the crystal clear waters " (Eva).

I like to hear the beach...you know...the beach is amazing... you can walk... it's just endless...an opportunity that way...you can just explore and there's so many different little aspects from the ship wrecks to the beaches and the reefs and what not... it's amazing" (Michael).

As a variation on this common theme, Barbara particularly emphasized the celestial body that she could observe in the Bahamas.

"The stars, yeah...You know there is very little light pollution here. And you don't really realize until you come down here how unbelievable the sky is. A number of years ago Walter put up lights, and we said if you don't take them down, we are going to shoot them down" (Barbara).

Furthermore, all of the research participants appear to enjoy the good recreational opportunities that the environment affords them; the pristine qualities

of the natural environment were not only enjoyed passively, but as part of recreational experiences: swimming, walking, diving, snorkeling, sailing and fishing. These were activities mentioned within the context of discussing the pristine qualities of the environment.

With respect to overall character, the second theme that emerged from the interviews was 'solitude through a small population'. This value was shared by members of all subgroups of the population in terms of age and gender, which was an unexpected result. At the onset of the study, the assumption was made that the younger population would prefer more action. However, Michael valued the solitude and the quietness of Abaco Island as an escape from the fast-paced lifestyle in a metropolitan city.

" I also like the quietness. it's kinda nice and secluded...there's only a few people that are actually here in this spot, so I value that " (Michael).

His sentiment was echoed by other research participants.

"I like the fact that it is fairly secluded. It's wonderful to have a deserted beach. How many places can you go to where you can brag about that? We are just so spoilt " . (Barbara)

"and we like peace and quiet " (Joanna).

Joanna and her husband have been coming to Long Beach and Crossing Rock for more than twenty years when they fell in love with the place. They built their vacation home in a beautiful spot overlooking the Atlantic Ocean and Long Beach. Since their first visit, Joanna has developed a close affinity for the place that is evident in the enthusiasm and warmth with which she speaks about the area surrounding Crossing Rock, in particular the people. When asked what she values, this was her response:

"The peace and the quiet, and the sound of the sea, and the parrots, and the people...the people of Crossing Rock.....When we go to the church, everybody bids us welcome and hugs us. And before we leave, they all hug us" (Joanna).

The 'nice and friendly people' theme was common as illustrated by the responses of two other research participants.

Very nice people, I feel very comfortable.....In the Bahamas I am very comfortable with people, doesn't matter the colour of their skin, they are just nice people - very welcoming" (Barbara).

"The people we have met are just as friendly as can be. They are just so nice. Anything you need they will help you out with or at least tell you where to find it or what not" (Michael).

Thus, Michael expressed a value common to most participants, but there were also some discrepancies. Three participants mentioned 'variety and diversity' as overall qualities that they particularly valued about the Abacos including the diversity in the character of towns, scenery, people and services.

"A variety of scenery, a variety of people, a variety of services attract us to the mainland. If we need more stimulus than we have here, we go to the cays" (Penny).

"The variety of the towns, they're all different; each one is being in a different way" (Wallace).

Barbara noted the biophysical changes in the landscape and the habitats of certain species that resulted from violent storms.

"It's really interesting to watch the evolution of the beaches. With the storms that have come and gone, every time one comes and goes, it changes the beach. It changes the landscape. We watched palm trees that were down on the beach... you know... get toppled over and then taken out. In the bay over there, ...we used to call them pelican trees...they are great big fir trees and the pelicans used to come down and land and sit on those trees. During one storm those trees came down, one is still sitting in the waterand the pelicans were gone for quiet a few years, but last year

I saw a pelican, and this year I have seen a pelican. It's really interesting to see how things change around here " (Barbara) .

CULTURAL ENVIRONMENT

With respect to Bahamian culture, only two participants recognized this theme to be an important value to their vacation experience, in particular the food and the architecture of the Bahamas.

To summarize, common themes identified based on results from the semi-structured interviews are: (1) a pristine natural environment, (2) good recreational opportunities, (3) relative solitude through a small population, and (4) nice and friendly people.

DISCUSSION

In terms of methodological issues, some of the most commonly reported themes, such as a pristine natural environment (beaches), climate, rest and relaxation and sports activities (good recreational opportunities), correspond to the results of the Visitor Exit Survey Special Edition 2001/2002. A number of common themes emerging from the interviews do not appear in the survey, since those characteristics do not appear as alternatives in the survey. Hence the present study provides more insights into those characteristics of the Abaco Islands that are particularly attractive to tourists. The results may not be generalizable to the general population because of the non-probabilistic sampling

method used (BMOT, 2001). However, the results were triangulated with other research methods, and may therefore be credible and trustworthy.

APPENDIX F: INVENTORY OF ABIOTIC AND BIOTIC FACTORS

To understand the particular natural and cultural attractions on Abaco Island upon which a tourism product can be developed, a cursory inventory and analysis of the biophysical environments was performed. In the absence of detailed aerial photography or topographical maps for Great Abaco Island, this inventory and analysis relied on a detailed inventory of conditions at a 400- acre site by Long Beach. Conditions at this site are representative of the geological formations and landscape types found elsewhere on the island, with the exception of the dryland pineforest.

GEOLOGY, TOPOGRAPHY, SOILS AND HYDROLOGY

The geological history of the Bahamas has been a source of debate for more than a hundred years, but recent research suggests that the geological composition of the Bahamas Platform consists of shallow-water carbonates, mostly marine limestone, as far down as 6,100 meters. This type of geological structure is formed by the cementation or *lithification* of a variety of marine sediments that have been deposited in place, suggesting that the Bahamas Platform has always been a shallow water marine environment since its formation 135 million years ago (Sealey, 1985).

The theory of continental drift further explains the Bahamas Platform's geological formation. More than 200 million years ago, the earth's crust consisted of two layers: the continental crust and oceanic crust. The continental crust formed a super continent on top of the oceanic crust that covered the entire

surface of the Earth. Due to rifting of the oceanic crust, the super-continent broke up and the pieces started to drift apart to form the continents existing today. As the North American platform rifted from the eastern sections, the continental crust was stretched at the margins of the continent. At the intersection of the North American continent and the Atlantic Ocean, a shallow water area was created. As the layers of limestone built up, the continental crust was pushed down by its weight. During the Pleistocene Ice Ages, sea level changes caused the oolitic marine sediments to become *lithified* into limestone (Sealey, 1985) .

The Bahamian geological formation gives rise to four different landscape types: (1) the ridgeland, (2) the rockland, (3) the coastal and (4) the wetland (Sealey, 1985). Using the site at Long Beach as an illustration of the different landscape types that are found in the southern district of Great Abaco Island, the inventory used an ecosystems approach whereby geology, topography, vegetation and wildlife were analyzed according to these landscape types.

THE RIDGELAND LANDSCAPE (COPPICE OR HAMMOCK)

All of the larger islands in the Bahamas, including Great Abaco, are associated with the ridgeland landscape, composed of oolitic limestone. Ridges range from 15-60 meters in height, creating a visually interesting landscape of undulating topography. Depending on the relationship of the ridges to each other, lakes and other landscape features will be formed between them. Because limestone is a porous material, it is quickly eroded by rainwater that seeps down through the rock resulting in the formation of sinkholes, caves, and tunnels.

When underground caves are located underneath the water table, they provide an enormous resource of fresh water (Sealey, 1985). In the southern part of Great Abaco Island, an enormous water lens is located (see U.S. Army Corps of Engineers report).

In terms of vegetation, the mixed hardwood forest associated with the ridgeland contains a rich variety: casuarina or Australian Pine (*Casuarina litorea*), cocoplum (*Chrysobalanus icaco*), dogwood (*Piscidia piscipula*), sea grape (*Coccoloba Uvifera*), gum-elemi (*Bursera simaruba*), Sarah's Toe (*Peltophorum adnatum*), bay cedar, short leaf wild fig (*Ficus citrifolia*), paradise tree (*Simarouba glauca*), pigeon plum (*Coccoloba diversifolia*), sophora or pearl necklace (*Sophora tomentosa*), Bahama stopper (*Psidium longpipes*), Spanish stopper (*Eugenia foetida*), red stopper (*Eugenia confusum*), and white stopper (*Eugenia axillaries*). It is also home to a variety of bromeliads and orchids. The Australian pine is a non-native, invasive species that displaces native vegetation in pinelands, mixed hardwood forests and sandy shores. It is salt-tolerant. Some areas have been disturbed, and are mostly composed of shrub cover, such as trema (*Trema lamarckiana*). The coppice provides a feeding ground for the endangered Bahama parrot (*Amazona leucocephala bahamensis*), although the pineland forest constitutes their nesting ground.

THE COASTAL LANDSCAPE

The coastal landscape on the Atlantic Ocean side is an erosive coastal landscape, with sediments being deposited onto the shore by wave and wind

action. The primary dunes reach a height of three to four meters, with grasses and shrubs binding the sediments. Some of the species found are sea oats, railroad vine, bay cedar, Australian pine or casuarinas (*Casuarina litorea*), and sea grape (*Coccoloba uvifera*). Different species of birds occupy this ecosystem such as sand pipers.

THE COASTAL WETLAND

On the leeward side of Abaco Island, facing the Caribbean Sea, ocean currents, littoral drift and terrestrial run-off are processes responsible for the deposition of sediments that result in the creation of an extensive coastal wetland. It is distinguished by flora, such as red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*), and buttonwood (*Conocarpus erectus*). The wetland is a nursing ground for a wide variety of aquatic species.

Aquatic environment – sea grass beds and coral reef ecosystems

On the Atlantic Ocean side, the coastal zone is composed of sea grass beds located approximately 30 meters to 300 meters from the shoreline. The sea grass beds are followed by a fringe reef, approximately four kilometers long and 30 meters wide at the widest point. At low tide, parts of the coral reef are visible on the surface, and at high tide, are located one meter below. An outer reef is visible from shore, but was not part of the inventory due to turbulence and the depth of the outer wall.

Following Hurricane Frances in 2005, it appears that parts of the coral reef may have been damaged, but are recovering. Coral varieties observed include: common sea fan (*Gorgonia ventalina*), sea rod (*Plexaura flexuosa*), giant brain coral (*Colpophyllia natans*), smooth brain coral (*Diploria strigosa*), elkhorn coral (*Acropora palmata*), mustard hill coral (*Porites divaricata*). Some fish species include: Red grouper (*Epinephelus morio*), Nassau grouper (*Epinephelus striatus*), Great barracuda (*Sphyraena barracuda*), Bull shark (*Carcharhinus leucas*), Bar jack (*Caranx ruber*), Yellow jack (*Caranx bartholomaei*), yellowtail snapper (*Ocyurus chrysurus*), Yellowtail damselfish (*Microspathodon chrysurus*), Spotlight parrotfish (*Sparisoma viride*), Queen parrotfish (*Scarus vetula*), Blue tang (*Acanthurus coeruleus*), and Doctorfish (*Acanthurus chirurgus*). Dolphins were also encountered on a regular basis, usually in the morning hours.

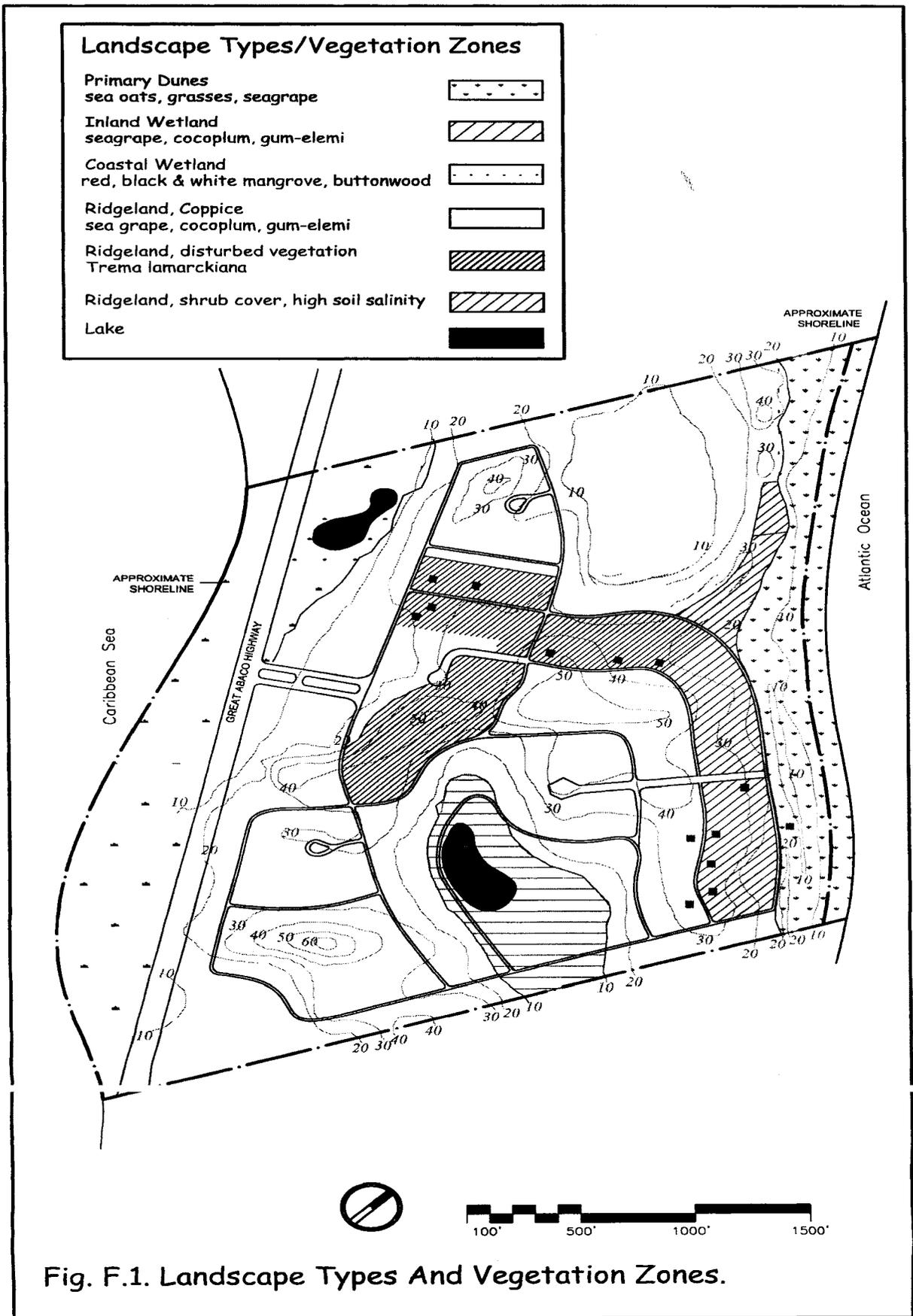


Fig. F.1. Landscape Types And Vegetation Zones.

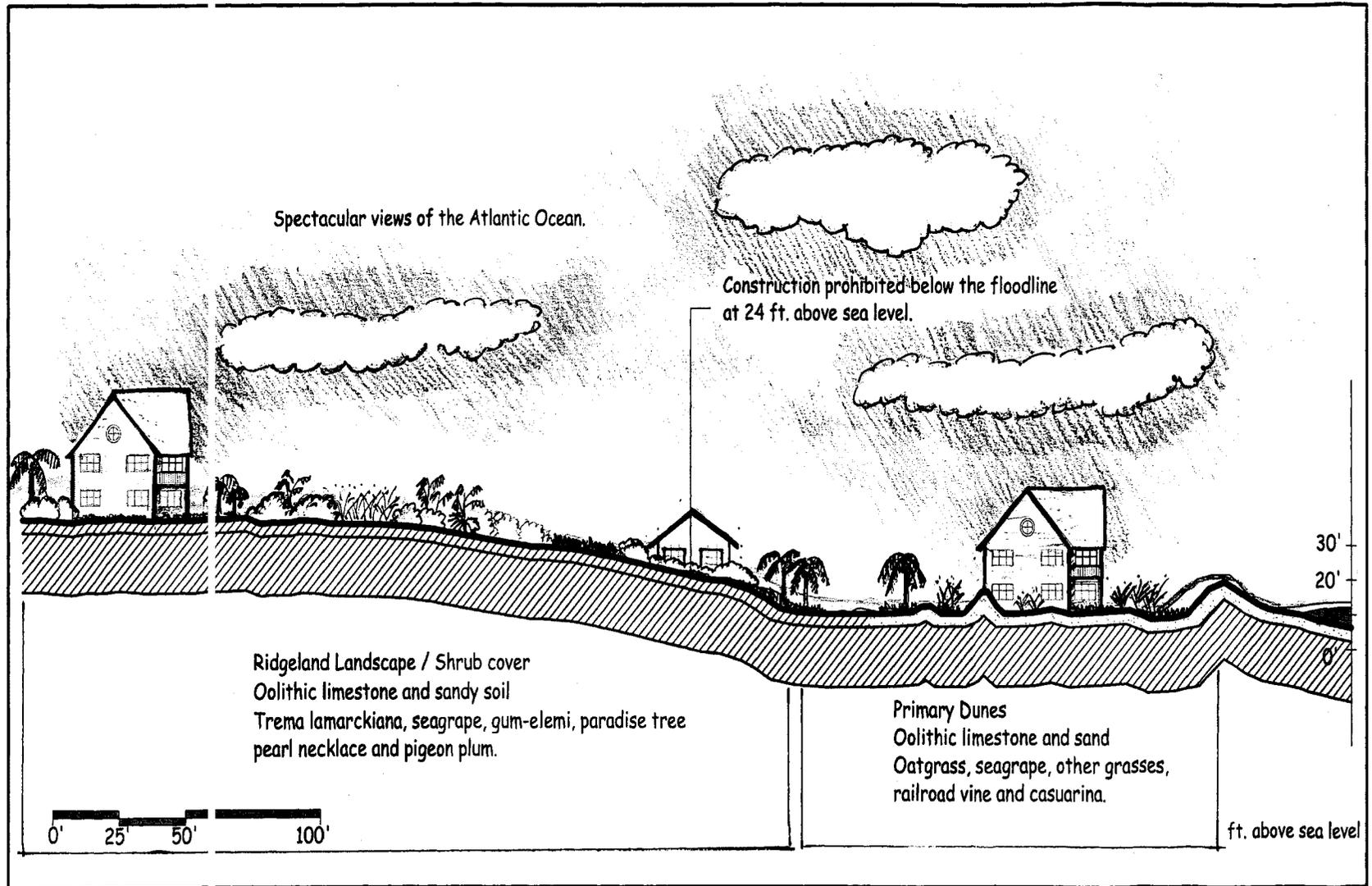
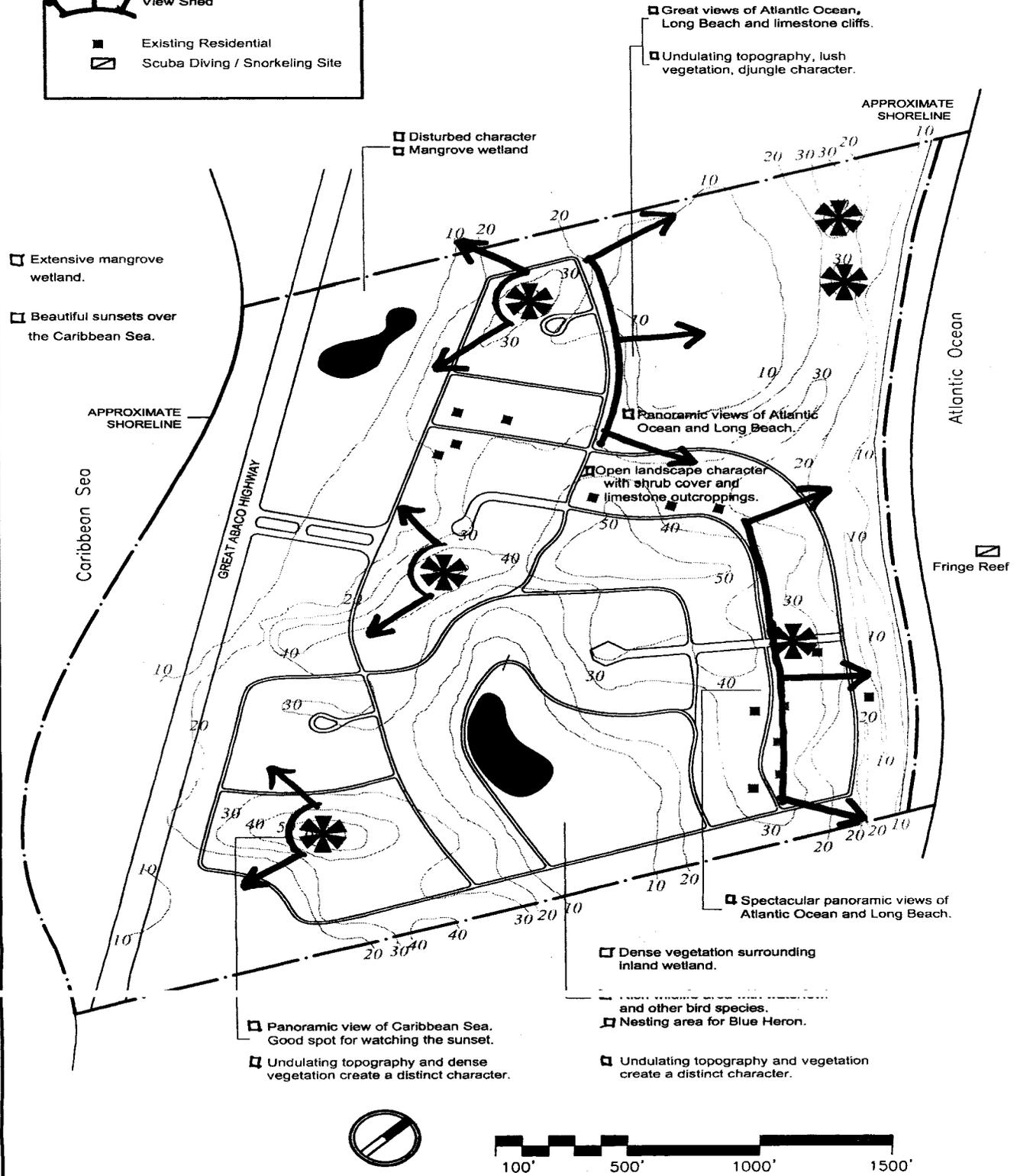


Fig. K.2. Elevation A-A'. Ridgeland and Primary Dunes.

LEGEND

-  High Point / Point of interest
-  View Shed
-  Existing Residential
-  Scuba Diving / Snorkeling Site



-  Extensive mangrove wetland.
-  Beautiful sunsets over the Caribbean Sea.

-  Disturbed character
-  Mangrove wetland

-  Great views of Atlantic Ocean, Long Beach and limestone cliffs.
-  Undulating topography, lush vegetation, djungle character.

-  Panoramic views of Atlantic Ocean and Long Beach.
-  Open landscape character with shrub cover and limestone outcroppings.

-  Spectacular panoramic views of Atlantic Ocean and Long Beach.

-  Dense vegetation surrounding inland wetland.

-  Panoramic view of Caribbean Sea. Good spot for watching the sunset.
-  Undulating topography and dense vegetation create a distinct character.

-  and other bird species.
-  Nesting area for Blue Heron.

-  Undulating topography and vegetation create a distinct character.

FIG. F.3. VISUAL ASSESSMENT.

Fig. F.4. Landscape Units

Unit A, Coastal Wetland red, black and white mangrove, buttonwood	
Unit B, Coastal Wetland mangroves, buttonwoods, disturbed character	
Unit C, Ridgeland, Coppice depression, dense vegetation, hot microclimate	
Unit D, Ridgeland, Coppice disturbed vegetation	
Unit E, Ridgeland, Coppice shrub cover, saline soil, spectacular view	
Unit F, Ridgeland, Coppice spectacular view of beach and ocean	
Unit G, Inland Wetland seagrape, cocoplum, gum-elemi	
Unit H, Ridgeland, Coppice undulating topography, dense vegetation	
Unit I, Primary Dunes, Beach grasses, railroad vine, sea grape	

