

Tourism as a Development Tool in the Caribbean and the Environmental By-products: The Stresses on Small Island Resources and Viable Remedies

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In the Caribbean, land and coastal resources have sustained a relatively small population for centuries, but with an increase in modern economic activity the islands' ecosystems are under increasing pressure. Without viable policies that address the driving forces behind these pressures, sustainable development in the Caribbean islands is not possible. The environment is often compromised by the immediate need to generate foreign exchange, mostly through tourism. If tourism continues to be utilized as a development tool for small island nations with vulnerable ecosystems, government policymakers need to recognize the environmental vulnerabilities of these islands and pursue policies that emphasize the islands' holistic image, rather than an exotic idealized image.

Introduction

The Caribbean islands constitute a small portion of the world's land mass and population, but yet they contain some of the world's most productive and biologically complex tropical forests, lakes, rivers, and coastal ecosystems in the world (Ragster & Geoghegan, 1992). The land and coastal resources have sustained a relatively small population for centuries, but with the increase in population and modern economic activities the islands' ecosystems are under increasing pressure. Without viable policies that address the driving forces behind tourist activities, the Caribbean islands will be unable to pursue a development agenda that meets the needs of the present population and does not compromise the ability of future generations to meet their own needs.

Though the Caribbean environmental problems are not limited to land and coastal resources, the types of tourism pursued in most of the islands have primarily revolved around and affected their land and coastal areas. Beach tourism, the most predominant type in the Caribbean, is based exclusively on the climate and the beaches of these island nations. This has created a paradox: The sun, sand, and beach tourism marketed for the Caribbean can impair and even destroy the very qualities of the land and coastal environment that attract tourists in the first place (Sadler, 1988). Thus, there is a need to safeguard the environment for both the long-term welfare of the island population and the tourism industry. In the case of Caribbean, tourism development policy needs to formulate a win-win scenario, where positive links between the environment and development are forged and which can eventually lead to environmental improvements and income growth, a more holistic form of development (Cater, 1995).

Caribbean Development Policies

Most of the Caribbean is struggling with problems associated with development, and these have been particularly exacerbated by the tourism industry. At the

same time, however, international development agencies and experts argue that tourism will contribute to Caribbean development. The immediate need of Caribbean governments to generate foreign exchange, mainly through tourism, often leads to policies that compromise the environment, and which adversely affect the island populations, the supposed beneficiaries of these policies. The islands are struggling with pollution to coastal waters, the loss of productive reef and sea grass ecosystems, excessive erosion and sedimentation, overexploitation of coastal resources, and a reduction in drinking water quality and quantity (Ragster & Geoghegan, 1992). These problems are largely due to development policies that concentrate on the short-term economic gains and ignore the role that the environment plays in attracting tourist to the islands (Ragster & Geoghegan, 1992).

International development agencies have promoted the tourism industry as a development tool, particularly for small island nations like the Caribbean which have no "real" viable alternatives for economic development. The "production of tourism as a wage good" emerged in the 1950s with the growth of disposable income for wage laborers in industrial countries (Truong, 1990). The promotion of tourism as a development tool began in 1969 with a consulting report completed by Checchi and Company, a private international development consulting firm specializing in tourism and regional development. The report, *The Future of Tourism in the Eastern Caribbean*, was commissioned by the United States Agency of International Development. It stated that any desire to assist the people of the Eastern Caribbean could be achieved through the promotion of tourism (Truong, 1990). Tourism was promoted as having two main advantages: a source of income and a basis for greater international understanding. In effect, tourism became the means by which Third World countries with little to offer but nature could accumulate capital, and ultimately develop. Tourism as a development tool in the Caribbean emerged first in Puerto Rico, Bahamas and Jamaica in the late 1950s and early 1960s, and eventually spread

throughout most of the Caribbean islands. This led most of the islands to become tourism-dependent countries (Bloommestein, 1988).

In an effort to address its development challenges, the Caribbean islands have implemented several development strategies that ultimately led to the adoption of the tourism development strategy. In the 1950s, the islands moved to create a modern industrial sector through import substitution methods (Deere, 1990). Foreign investors were encouraged to invest in the countries through the use of cheap labor areas, tax exemptions, and other incentives. The import substitution policies failed to promote industrial development and economic growth, and did not address unemployment problems. These industries were usually capital-intensive, and depended on import of raw materials and machinery, developing few linkages to the local economy. Following the import-substitution experiment, Caribbean countries pursued, in varying degrees, policies where the state played a greater economic role. The new state enterprises and industries, oriented toward the regional market, depended on imported inputs and technology. The lack of diversified markets, low levels of domestic inter-industry linkages, and deficiencies in managerial and entrepreneurial skills limited the success of these initiatives (Deere, 1990).

During the 1960s and 1970s, many of the islands adopted more socialist policies to address income inequity. Fearing socialist movements in the region, the Regan administration became more involved in internal political and economic policies of the islands. One of the initiatives was the Caribbean Basin Initiative (CBI). It attempted to solve the Caribbean economic problems by integrating the region more closely to U.S. markets. The CBI led to a trade balance surplus for the U.S. in relation to the Caribbean islands. As result of this initiative, free trade or export-processing zones emerged throughout the Caribbean. In conjunction with the establishment of the CBI, the IMF's structural adjustment policies were promoted and implemented by the Caribbean governments with the endorsement of USAID, the World Bank, the IMF, and other development agencies. The structural adjustment policies included provisions that changed the economy to achieve balance of payment and export diversification, a movement away from primary goods exports. Efforts towards export diversification have generally led to the creation of assembly operations in free trade zones with few linkages to the local economy and with low, predominantly female wage workers (Deere, 1990). To lure foreign capital into free trade zones, Caribbean governments offered generous incentives, such as duty free import of raw materials and capital goods, exemptions from taxation or restrictions on profit repatriation, and waivers from labor legislation (Deere, 1990). As a byproduct of efforts to entice manufacturing companies to locate in the countries, the islands have often competed with one another by offering more and more advantageous conditions to foreign investors.

Tourism in the Caribbean

The Caribbean is recognized as one of the most tourism-dependent regions in the world. With the exception of Puerto Rico, Trinidad and Tobago and Haiti, the Caribbean islands are highly dependent on tourism as a source of foreign exchange (Bloommestein, 1995). Tourism is the single largest earner of foreign exchange in 16 out of the 28 countries in the Caribbean (Bryan, 2001). In 1999, tourism and the travel industry attracted 41% of all capital investment that entered the Caribbean (Bryan, 2001).

The great importance that tourism plays in the Caribbean economy is reflected in the number of people employed by and the income generated from the industry. It is estimated that the tourism industry directly and indirectly employs one in four people in the Caribbean and generates about \$2 billion a year in income for the region (Bryan, 2001). In land-based tourism, the total number of persons employed is often more than the total number of hotel rooms, leaving on average 1:3 employee room ratio. In Jamaica, for example, the industry directly employs more than 30,000 people and generates \$1.2 billion per year in income (Bryan, 2001).

Due to tourism, most of the Caribbean islands economies are export-oriented, making their economies and their expenditures dependent on external consumers, which hold a relatively high share of the regional GDP. Visitor expenditures in Anguilla, for example, represented 74.77 % of its GDP in 1998 (Bryan, 2001). Unlike other industries, the tourist industry products are consumed at the place of production (Bloommestein, 1995). As a result, marketing and consumption of such products is largely based on the perception and wants of the tourist, which do not always reflect the realities and availabilities of the islands. To attract tourists, the images of the islands are transformed into "exotic" and relatively unspoiled lands with a slower pace of life, thus allowing for tourism in the Caribbean to be based on sun, sea, sand and sex (Sadler, 1988; Patullo, 1996).

The Caribbean share of world tourism arrivals is less than two percent but it is triple that of South America and Western Asia (Patullo, 1996). Based on tourism receipts, Latin America and the Caribbean ranked eleventh in the world in 2000, and according to the Caribbean Tourism Organization (CTO) its 34 member states grossed US\$19 billion from tourism (CTO, 2002). Tourist arrivals in the Caribbean have increased by 58.4% between 1990 and 2000, an annual 4.7% growth rate. The Caribbean share of world tourism arrivals is 36.5% with growth rate of 9.3%. Cuba, Dominican Republic, and the Mexican Caribbean area have largely led growth (CTO, 2002).

Though tourism is present in most of the Caribbean islands, the level of tourism in each island varies. According to the R.W. Butler cycle of tourism, the first level or category of tourism comprises of countries where tourism is at its early stage and largely undeveloped. These countries are visited by a small number of "adventurous"

tourists. Generally, these are less accessible islands like St Vincent and Dominica. The second category is those islands that demonstrate a new level of growth in visitors and an increased presence of overseas operators. The tourism on these islands attracts the up-market, where the tourists consider the destinations as fashionable. The British Virgin Islands and Anguilla fall under this category. The third category comprises of the countries that have experienced rapidly growing tourist arrivals. Within these countries, multinational firms are largely involved in the construction, running, and the provisions of the hotels. Through tour operators, the mass market begins to discover the destination. Aruba, Martinique, St. Kitts and Nevis, and St. Lucia are representative of this category. The final group of tourism is categorized as the mature tourism destination. At these destinations there are large numbers of visitors, the existence of a well-organized industry, a range in the types of accommodations, and a large and diverse support sector. These destinations appeal to the mass market. Antigua, the Bahamas, Barbados, and Jamaica have had their tourism mature to this level (France & Wheeler, 1995).

Though all tourism levels adversely effect the Caribbean environment, the mass-market tourism generates the most adverse effects on the islands' environment. At the mass-market level of tourism "...to satisfy the overhead and profit criteria of international hotels, airlines, and tour operators, the tourist economy has its own built-in, long-run propensity to expand visitor densities irrespective of the social and ecological carrying capacity of any given island destination" (McElroy & de Albuquerque, 1991, p. 148). Due to high densities of visitors at the mature level tourism, declining growth in visitors and profits begin to manifest, ultimately leading to visitors searching for another "undiscovered" destination. In an attempt to stop the decline of visitor's stopovers, prices are reduced to attract more visitors to the islands, which keep visitor densities high but alter the visitor's experience and disturb the islands population. Additionally, manmade attractions are increased, which leads to further degradation of the natural environment, caused by the addition of visitors on the islands (McElroy & de Albuquerque, 1991).

Caribbean Environment

The Caribbean islands are one of the most intensively exploited regions in the Western Hemisphere (Ragster & Geoghegan, 1992). European settlement profoundly affected the ecology of the islands. Within a hundred years of Columbus' arrival, the forests were being cleared for plantation agriculture and virtually disappeared. On many of the islands, aquifers and streams dried up permanently and coral reefs began to suffer the effects of sedimentation from land based erosion runoff. By the end of the plantation era in the late 19th century much of the lands were no longer suitable for agriculture. Scrubs replaced the forest and fertile lands (Ragster & Geoghegan, 1992).

After Emancipation, the islands continued to suffer environmental degradation due to the pattern of settlement by former slaves on the islands. In Barbados, for example, the former slaves settled in the islands' mountainous interiors, which were unsuitable for sugar cane cultivation. These patterns of settlement led to a vicious cycle of deforestation, soil erosion, declining soil fertility, overcrowding, subdivision of holdings, and further deforestation (Girvan, 1991). This cycle has been dubbed the "Haitian syndrome." The Haitian syndrome is the direct consequence of land distribution inequality along with the neglect of land use, planning and conservation practices at the individual household and state level (Girvan, 1991). Today, the Haitian syndrome and the expansion of the commercial agriculture inland continue to contribute to rapid deforestation and soil erosion throughout the Caribbean. Soil erosion has continued despite numerous attempts at watershed rehabilitation. In addition to soil erosion watershed deforestation has led to increase deterioration in water supply, negative impacts on streams and marine biota, and the reduction of water-holding capacity of water supply reservoirs (Evans, McGregor & Barker, 1998).

The globalization of the region's economies has expanded trade and investment relationships, primarily in non-manufacturing exports such as agriculture, mining, and tourism. During the 1990s, primary products continued to dominate the mix of total merchandise exports in the majority of Latin American and Caribbean countries (Keeling, 2004). An emphasis on the export of natural resources has led to increasing use of land resources, with significant impacts on the environment. Growing social polarization, rural-urban migration, industrialized and mechanized farming, rapid urban expansion, and the ideologies of capitalist consumption have stretched the limits of environmental sustainability to a crisis point, particularly in large urban areas (Keeling, 2002). Globalization has accelerated the pace of environmental degradation, and raised new challenges for sustainable development for policymakers (Keeling, 2002).

Increased pollution in most countries was a result of a scale effect, the expansion of trade. The small countries of the Caribbean tended to specialize in primary-input-intensive goods, which meant greater pressure on their natural resources (Schatan, 2002). The lack of opportunities in the rural areas of the islands, and the availability of jobs in manufacturing, tourism and other services in urban centers caused a movement from rural to urban areas (Kingsley, 1990). The rapid urbanization has placed a strain on the financial resources and infrastructure of cities, hampering the ability of authorities to offer energy, clean water resources, and clean air. Most urban environmental problems are due to economic activities, such as manufacturing, power generation, transportation and waste disposal, including sewage and solid waste. Pollution is a result of the concentration of industrial plants, power stations, transportation and garbage burning

facilities in urban centers (Dixon, 1993; Kingsley, 1990). In addition to power plants and large industry pollution, cities tend to have a large number of boilers, engines and open fires in the commercial industry and informal sectors (Holdren & Smith, 2000). Some have argued that the rising incidences of environmental disaster at the end of the twentieth century are a consequence of the capitalist model of economic development pursued in the last 50 years (Blake, 2000). Phenomena such as global warming have affected the Caribbean through high exposure to environmental disasters like hurricanes, droughts, earthquakes and volcanoes.

On small islands, resources are limited and vulnerable to the impacts of human activity (Sadler, 1988). Profiling the environmental impacts of human activity in any one of the islands can provide evidence to the vulnerable state of resources in the Caribbean. In Jamaica, for example, the net conversion of 1315 squared km (324,805 acres) of forest to other uses over the 1981-1990 period led to an annual deforestation rate of 3.3% (Girvan, 1991). In this same period, 400 million tons of soil was lost from the surface watershed of the island. Most of the soil was washed out to sea where it damaged coral reefs and marine fisheries (Girvan, 1991). Average rainfall in the past thirty years has declined by 28%; "man-induced change" in the surface microclimate is the suspected cause of this decline. Temperatures in Jamaica have increased by an average of 2.3 degrees Celsius, attributed partly to global warming, deforestation and desertification in the island. Fifty identified rivers in Jamaica have lost constant flows since 1950. It is estimated that 409,000 tons of carbon are emitted every year into the atmosphere above Jamaica from forest burning, which contributes substantially to the greenhouse effect (Girvan, 1991).

Water is the single most important environmental resource on which all other natural resources depend (Watts, 1998). Yet, a great majority of the Caribbean islands are experiencing severe water storages and water pollution problems. Removal of forest has led to increased surface run-off, a drying out of the surface and subsurface soil, and as a result a lowering of water tables (Watts, 1998). The situation is now compounded by a growing demand for water by other groups of consumers in growing urban areas, the tourism and leisure industry along with others. In Antigua and Barbados the water levels are so severe that shortage of water is common. Much of the remaining ground water has been infiltrated by sea-salt water rendering the water unavailable for use (Watts, 1998). In Barbados, the total developable water resources are estimated at 249,000 cubic meters (54.79 million gallons) per day, which equals to only 350 cubic meters of renewable water resources per person per year (Watts, 1998). Barbados demand for water has grown about four percent per year. With an estimated annual average evaporation of 1662.5 mm per year it is believed that there is little chance that these resources will be replenished by existing rainfall patterns, except in the wettest parts of the island (Watts, 1998).

Excessive withdrawal of fresh water sources occurs when there is high demand of water and low supply to meet the needs. As a result, over extraction of water can pull pollutants more easily from landfills and other pollutant sources into aquifers (ground water lens) (Dowdeswell, 1995), ultimately, leading to the damaging of these aquifers. The holding capacities of the aquifers are lowered along with their replenishing capabilities. In addition to pollutants, salt-water can contaminate the groundwater. Once groundwater has been contaminated the water is no longer a potable source and fresh water supply is decreased (Dowdeswell, 1995). Also, if surface water is over extracted, this in itself can lead to pollution. Over extraction can lead to the discharge of dissolved effluents (liquid waste) into rivers, creating severe pollution problems. Generally, it is the poorest members of society who are affected the most by the pollution because often they are forced to live in most affected areas (Dowdeswell, 1995).

Caribbean Tourism and Environment

Due to tourism, the environment of the Caribbean has been made to conform to the picturesque beach, sand, sea, and sun view of the island, while the mountains, cities, rivers, and ruined battlements have melted into the background to accommodate this view (Patullo, 1996). The "well-being of the environment" has been overlooked for the sake of short-term economic profits. The greater number of tourists, the more pressure is exerted on the environment of the islands. The pursuit of economic profits leads to policies that do not take environmental concerns into account, and that do not seek to alleviate the pressures on the environment.

Though the Caribbean islands experienced environmental degradation prior to the development of tourism, tourism has exacerbated existing problems. In a number of Caribbean islands the total number of visitors exceeds the total population (Charles & Marshall, 1991), thus exponentially affecting the islands' ecosystems. Tourism in the islands has further contributed to environmental degradation in the form of erosion of beaches, breakdown of coral reefs, and marine and coastal pollution. These environmental degradations are caused by water sports, waste dumping, non-treatment of sewage, sand mining, destruction of wetlands, destruction of salt ponds, along with other activities (Patullo, 1996). The environmental degradation, especially for the mature markets, is in line with the R.W. Butler tourism cycle model; the last phase, where "as the place sinks under the weight of social friction and solid waste, all tourists exit leaving behind derelict tourism facilities, littered beaches and countryside, and a resident population that cannot return to its old way of life" (Patullo, 1996, p. 8). Evidence of this phase appears in Barbados. The island is densely populated with one sixth of the population living along the coastline and 400 thousand stopover visitors. Barbados has experienced severe costal erosion and sewage problems, which in turn has led to the decline of

tourism in the country (Patullo, 1996).

The tourist sector in the Caribbean uses nearly all the facets of the environments. Land is used for hotels and other tourism facilities. The beach sand is utilized for recreation and leisure, and for construction of the tourism facilities. The marine resources of the islands support swimming, sailing, diving, snorkeling, windsurfing, sewage wastes, and conversion of salt water into drinking water. Seafood is removed from the marine, as it represents a significant menu attraction and income earner for the tourism industry. The forest is utilized for nature tours, products for furniture and souvenirs, and charcoal for barbecues (Jackson, 1991).

Trends on the islands have leaned more and more towards environmental degradation rather than conservation. For example, sand is being used for construction in the eastern Caribbean at alarming rates. Sand mining has not, in large, been carefully regulated. It is estimated that 572,000 cubic yards are mined from St Lucia's beaches (Jackson, 1991). A study concluded that sand mining for hotel construction at the Dickenson Bay beach in Antigua led to the disappearance of a section of the beach (Jackson, 1991).

The Caribbean islands are also struggling with the management of a growing demand for water consumption and disposal of liquid and solid waste. These demands in the eastern Caribbean are estimated to be about 30.8 mgd, 27.7 mgd, and 559.6 tons per day for water, liquid and solid waste disposal respectively (Jackson, 1991). Though tourism demand is a fraction of the overall water demand, it is sufficient enough to aggravate water shortages (Jackson, 1991). On average, tourists consume twice as much water as the island populations. In St. Lucia, the average daily consumption of water by hotel guests was about 80 to 150 gallons per person versus 50 gallons per island resident (Dixon, Hamilton, Pagiola, & Segnestam, 2001). In Barbados, golf courses are utilizing 6,000 gallons of water per course per day. In Aruba, wetland destruction due to development has eliminated much of the natural habits for fish and birds and natural filters for water (Patullo, 1996). The situation of water quality and quantity is even more severe where small islands receive large numbers of tourists during particular seasons (Dowdeswell, 1995). Tourist visitation usually coincides with periods of lack of alternative sources to fresh water, mainly during dry season. As a result, there is a large seasonal variation in the demand of water, thus making it difficult for the islands to design adequate infrastructure for water diffusion (Dowdeswell, 1995).

Because the majority of tourism facilities are located in the coastal zone, the impact of sewage waste from these facilities is considerable. Tourists generate substantial amounts of solid waste, twice as much solid waste per capita than local residents (Dixon, Hamilton, Pagiola & Segnestam, 2001). According to a 1996 investigation, it is estimated that 75% of wastewater treatment operated by hotels and resorts in the Caribbean did not comply with basic effluent discharge guidelines (Dixon, Hamilton,

Pagiola, & Segnestam, 2001). In coastal zones like Grand Anse in Grenada, Mckinen's Pond and Dickenson Bay in Antigua, and Rodney Bay in St. Lucia levels of pollution measured constituted public health hazards for the island population and marine life (Jackson, 1988).

Policy Recommendations for Tourism and the Environment

The Caribbean is facing formidable challenges to achieving sustainable development. High population density, a changing world climate, environmental degradation, constrained water resource, and sector imbalances for available resources (Watts, 1998) all contribute the growing developmental challenges. According to David Watts, the limited amount of resources and space make it difficult for the island economies to adjust to rapid environmental change, in particular when these changes are induced by human activity (1998). It is therefore particularly important for Caribbean policymakers to be aware of the perverse effects of economic and human activities on the environment and to formulate policies that address these perverse effects.

The islands are fragmented politically and economically. Twelve countries are dependent territories of the four colonial powers: Britain, France, the Netherlands and the United States. The independent countries are divided into English (12), Spanish (2), French (1), and Dutch speaking (1) (Girvan, 2000). There is no single integration group that includes all Caribbean countries. Differences in production structures and external association have often led to contradictory short-term interests among countries and divergences in economic policies (Girvan, 2000). Caribbean economies are open. The economy is characterized as dependent with trade, as GDP ratio averages 112 per cent for 25 of 28 Caribbean countries and territories (Girvan, 2000). Production and exports are concentrated in a few activities. Agriculture and mining remain important parts of the economy but the structure of production has moved more towards the tourism service industry. Its export markets are primarily the United States, the European Union, and Russia.

Given the islands lack of economic diversity, international conditions can govern external economic relations and control or dominate the islands' economies (Ragster & Geoghegan, 1992). Therefore, due to economies of scale, relative homogeneity in size, and a heavy dependence on tourism, Caribbean nations should aggregate their resources to tackle both public and private sector problems and to achieve sustainable development in the region (Bryan, 2001). Yet, the tourist industry reliance on foreign capital to build and fuel the big hotels that sustain the industry, create unfavorable conditions to finding regional solutions. Since an existent hotel infrastructure is a precondition for attracting foreign airlines and tour operators to the market, islands compete amongst themselves (Patullo, 1996). This competition discourages collaboration on other issues.

Yet, several steps have been taken at the regional level to address environmental and tourism-related problems. The Association of Caribbean States has created a committee dedicated to addressing the issue of sustainable development in the Caribbean. It is currently in the process of ratifying the Convention on Sustainable Tourism Zone of the Caribbean (STZC). The objective of the Convention is to incorporate sustainable development criteria into tourism activities (ACS, 2002). It envisions the promotion of tourism as an industry, the expansion of intraregional tourism, a common tourist card, along with other cooperative measures (Bryan, 2001). On the issue of the environment specifically, its main goal is to research and design projects that promote the conservation, preservation, and sustainable use and management of natural resources in tourism development (ACS, 2002).

Another regional organization working towards achieving sustainable development in the region is the Caribbean Alliance for Sustainable Tourism. Its main goal is to collaborate with the hotel industry and tourist sector to promote effective management of the natural resources within the islands. The Caribbean Alliance for Sustainable Tourism most recent initiative has been to work with small hoteliers in the Eastern Caribbean and Barbados through funds provided by USAID. The main focus on this project was to provide environmental improvement assistance to the hoteliers and to increase environmental awareness among them (CAST, 2004). The project seeks to help the Caribbean establish a sustainable tourism zone by harmonizing ongoing national and regional initiatives (Bryan, 2001).

Along with these regional initiatives, certification programs have also been put in place to encourage sustainable development in the Caribbean. The Green Globe certification program provides an independent verification of environmental improvements within the Agenda 21 principle, which emerged at the 1992 Rio de Janeiro Conference on Sustainable Development (Bryan, 2001). Its primary objectives are to work with travel and tourism companies and communities to achieve and maintain good environmental and social practices, deliver maximum benefit to all interested parties, and provide choice for concerned consumers (CAST, 2004). The benefits that hotels may derive from receiving a Green Globe certification is a reduction in operational cost through the systematic management of resources, improved company image, and maintenance and improvement of the environmental quality of the hotel (Bryan, 2001). The Blue Flag program is an international voluntary certification that addresses environmental management for beaches and marinas. Under the Blue Flag award system, beaches that fulfill criteria for bathing water quality, cleanliness and safety are given the right to fly the Blue Flag. Currently, twenty-nine nations participate in the Blue Flag Campaign, including the Bahamas, Dominican Republic, Jamaica, and Puerto Rico (CAST, 2004).

Though these initiatives and certificate programs are working towards the harmonization of environmental standards throughout the Caribbean, governments seem to be one step behind environmental organizations. Caribbean governments need to establish regional standards at least at the same pace, if sustainable development is to be achieved in the region. Some efforts have been made at the state level, in particular in Barbados, to address the problems of environment and tourism, but regional standards have yet to be established. Barbados has addressed its severe water shortage problems through the use of market-based instruments, such as duty and tariff relief for environmentally equipment imports by hotels, water charge rebates for construction of water holding tanks, tax-deductibility for installing water-saving taps and showerheads, along with other measures (Dixon, Hamilton, Pagiola, & Segnestam, 2001). Efforts like these need to be replicated at the regional level.

One of first steps states can take to formulate sound tourism and environmental policies is to recruit qualified professionals to carry out comprehensive planning of tourism development schemes and to find techniques that mitigate the negative effects of tourism (Ragster & Geoghegan, 1992). Throughout the islands there is a dearth of planners, resource managers, forester and fisheries managers, and environmental technicians. A 1980 World Wide Life Fund study found that for Latin America and the Caribbean training in resource management and the environment was severely limited and many students who were trained tended to seek opportunities outside of the Caribbean (Ragster & Geoghegan, 1992). In addition the survey found that there were some internal obstacles to specialized training in the region, in particular with regards to the extent of training. Recommendations were made for universities and resource management programs to provide training through a variety of methods, from workshops to full academic programs (Ragster & Geoghegan, 1992). Though progress has been made towards addressing the lack of resource managers in the Caribbean, especially through academic programs at the tertiary level at Caribbean universities, training for resource managers is still needed. Programs at Caribbean universities are considered weak, as they lack a hands-on approach to problem-solving and team-oriented skills, and do not provide a multidisciplinary training in environmental management (Ragster, 1997). Improvements in these areas should lead to more effective resource managers.

The tourism policies of Caribbean governments should incorporate and uphold environmental codes in regards to the industry. These policies, for example, need to address regional zoning of tourism facilities (Holder, 1988). There is a need for stricter building codes in relation to construction and sewage disposal on beaches and costal areas. Governments must also consider restricting tourist consumption of water, since they consume on average twice as much water as the island population. Government policies, through tax measures,

should reward those facilities that take into account the sensitive ecosystems of the island and execute measures that minimize the adverse effects created by the presence of their tourism facilities. Environmental legislation in the Caribbean must create an investment climate that encourages environmental friendly practices by the tourism industry (Girvan, 1991). This type of legislation should be pursued at the regional rather than merely at the state level, thus avoiding current practices, where a lack of regulation harmonization among islands has undermined the effectiveness of individual countries' efforts (Girvan, 1991). Caribbean governments should also address their institutional weaknesses, such as inadequate staffing, poor coordination among responsible departments, lack of clearly defined responsibilities within departments, and absence of political will (Jackson, 1988). The Public Works Department of Caribbean governments, for example, are responsible for issuing sand extraction permits, but have no clear mandate for beach management (Jackson 1988).

Environmental and tourism policies should prioritize environmental resources' value based on their replenishing ability, in order to minimize the lost or damage of these resources (Jackson, 1991). According to Ivor Jackson, Caribbean governments tend to view environmental resources as free goods unless they can be exchanged for cash (1991). From this perspective, sand mined from a beach is likely to be valued but not the leisurely use of the beach. This leads to situations where governments receive revenue from sand used in hotel construction, but a flow of revenue is not generated from constant use of public beaches. When resources are undervalued and generate no direct revenue, governments fail to provide adequate management and supervision over these resources (Jackson, 1991). In the eastern Caribbean, governments have been reluctant to charge fees for diving reefs, visits to parks and protected areas or require developers to shoulder the cost of environmental impact assessments. Greater appreciation of environmental resources could lead the government and the private sector to minimize the environmental degradation created by the tourism industry, since the use value and non use value of the environment is quantified.

To avoid further environmental degradation, it is essential that the public is educated about certain damaging practices. Both the tourist community and the island population should be made aware of alternative activities that minimize these problems. Inadequate education at the primary and secondary school levels have led to a general lack of public awareness of environmental issues on the islands and as a consequence a lack of support for environmental protection and management (Dowdeswell, 1995). Promotion of alternative or conjunction uses of environmental resources by island populations can alleviate some of the pressures. For example, the islands could promote the use of rainwater for cooking and drinking and the use of seawater for bathing and sanitation (Dowdeswell, 1995). The citizens of the islands could also be encouraged and taught methods of conserving

surface water runoff during rainfall at an individual level, while at the state level water is stored from runoff from paved roads, airport runways, and roofs of buildings (Dowdeswell, 1995). State level conservation provides a positive example and therefore contributes to public awareness. Tourist information centers can hand out materials about area attractions along with information about island resources and conservation (Jackson, 1988). To educate the tourist population, government policies could require tourism facilities to post signs asking guests to preserve water, and install automatic shut-off showers, faucets, and monitor and fix dripping faucets.

Extensive efforts have been made towards providing industry incentives and means to conduct environmental friendly tourist businesses in the Caribbean, but little effort has been made towards raising public awareness among tourists. The Green Globe Certificate program targets tourists who are already environmentally aware, and who seek environmentally-friendly tourist experiences. These organizations are not addressing tourism marketing that allows a perception among tourists that Caribbean natural resources are plentiful, and that practices among tourists do not need to be changed. Along with efforts to upgrade hotel facilities to promote conservation, these certificate programs should also reward those within the industry that seek to alter visitor practices by public awareness efforts. Certificates should be awarded to hotels and tour operators that meet certain public awareness criteria. One of the criteria for a certification could include a policy of instructing tourists to reuse towels to avoid excessive laundry and conserve water. The Caribbean states have also faltered in terms of public awareness. Dominica is the only island throughout the Caribbean that designates a portion of the departure tax levied on tourists as an environmental tax (Dixon, Hamilton, Pagiola, & Segnestam, 2001). Although these taxes recapture some of cost associated with the use of resources, they are not public awareness measures. Taxing tourists is a viable way of charging for resources used, but it does not address the heart of the matter: the use of non-renewable resources. Public awareness is key to addressing this major problem.

Finally, to minimize the effects of tourism development on the island ecosystems, the marketing of tourism should be redirected and the Caribbean islands should pursue alternative forms of tourism. Planning for tourism has traditionally been oriented towards the needs of the tourist rather than the needs of the island population (Holder, 1988). To obtain sustainable development, it is crucial that the welfare of the population take priority. One of the first steps towards taking the island population welfare into account is to redirect the promotion of tourism towards vacation groups that are not completely focused on the beach resources of the islands. Instead the islands should court vacation groups that are interested in the cultural, historical and nature-based experiences that the islands have to offer (McElroy & de Albuquerque, 1991). These

tourists' stopovers tend to be longer and thus lead to more expenditure per tourist, ultimately leading to a lower average number of tourists visiting the islands and taxing the ecosystems.

Among tourists, historical sites rank second (52%) after ocean and beach sites (53%) for top travel motives. In 2003, studies revealed that 41% of travelers visited historical sites in the United States while 48% attended cultural events (TIA, 2005). In most Caribbean islands, the most noteworthy attractions are not the sand and beaches but rather the mountains, landscapes, forest, coastlines, and historical sites (OAS, 2004), therefore the Caribbean should be able to capitalize on tourist interest in historical and cultural destinations. In addition, the islands should move towards ecotourism, a style of tourism viewed as a responsible, alternative, caring or green tourism (Pattullo, 1996). Ecotourism focuses on small scale market tourism where visitors express interest in local natural history and culture. Ecotourism is regarded as promoting better linkages between the tourism industry and local businesses, reductions in leakages in the economy, increased financial returns, and local involvement, all of which lead to more sustainable development. While pursuing ecotourism, the islands must avoid "catering" to a new trend in mass-market tourism that is being disguised as ecotourism (Patullo, 1996). As ecotourism becomes more popular, there is a danger for continued pressure on sensitive environmental sites.

Organizations like the Organization of America States have recognized the potential in historical tourism and ecotourism and have recommended the Caribbean focus on alternative forms of tourism. While there is recognition of the potential of historical tourism and ecotourism, most investments are still earmarked for traditional tourism facilities, such as hotels, rather than historical and ecotourism sites (OAS, 2004). This is largely due to governments' lack of managerial capacity; financial institutions' concerns with investment risk; low accessibility to sites; NGOs lack of capital and public support; along with other factors (OAS, 2004). If these different sectors are able to coordinate among themselves and if the private sector is able to recognize the potential for historical and cultural tourism in the Caribbean, a movement away from the sun, sand, and sea tourism is possible.

The continual degradation of the islands' environments can be stymied and the adverse effects of tourism can be curtailed, if Caribbean governments pursue policy recommendations outlined above. Though tourism is not the root cause of the Caribbean's environmental problems, the form of tourism that has been promoted in the Caribbean has served to exacerbate the problem. This has curtailed the sustainable development of the islands rather than aided it. The tourism industry's short-term rewards have been in opposition with the long-term welfare of the islands. If tourism continues to be utilized as a development tool for small island nations with vulnerable ecosystems, it is

necessary for government policymakers to recognize the environmental vulnerabilities of these islands and pursue tourism policies that revolve around the islands' holistic image, rather than the exotic idealized image.

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