

ICTSD Series on Trade-Supported Strategies for Sustainable Development



# Resilience Amidst Rising Tides



An Issue Paper on Trade, Climate Change and Competitiveness  
in the Tourism Sector in the Caribbean

By **Keron Niles**  
Research Consultant



International Centre for Trade  
and Sustainable Development

Issue Paper No. 9

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## CONTENTS

LIST OF FIGURES, TABLES AND BOXES	v
ABBREVIATIONS AND ACRONYMS	vi
FOREWORD	viii
EXECUTIVE SUMMARY	ix
<b>1. TOURISM, TRADE AND DEVELOPMENT IN THE CARIBBEAN</b>	<b>1</b>
1.1 The Caribbean Tourism Sector	1
1.2 Tourism Linkages and Their Relevance to Climate Change Adaptation	5
1.3 Tourism and Trade	6
1.4 Tourism as a Mechanism to Raise Regional Concerns	8
<b>2. TOURISM AND CLIMATE CHANGE IN THE CARIBBEAN: ADAPTATION POLICIES AND STRATEGIES</b>	<b>9</b>
2.1. A Brief Introduction to Climate Change Adaptation in the Caribbean <sup>23</sup>	9
2.2. Adaptation Needs in the Tourism Sector	10
2.3. Opportunities for New Tourism Products	12
2.4. Complementarities with Other Sectors to Adapt to Climate Change	13
2.5. Case Studies	14
<b>3. IMPACT OF MITIGATION POLICIES AND STRATEGIC RESPONSES</b>	<b>17</b>
3.1 Potential Impacts of Mitigation Policies on the Tourism Sector in the Caribbean	18
3.2 Strategic Response to Threat Posed by the APD	19
<b>4. TRADE POLICY AND TOURISM</b>	<b>21</b>
4.1 The Role of Trade-related Measures in Promoting Adaptation to Climate Change in the Tourism Sector in the Caribbean	21
4.2 Use of Regional Trade Agreements (RTAs) to Increase Trade in EGS	23
4.3 Multilateral Environmental Agreements: The Prescribed Alternative	25
<b>5. KEY POLICY RECOMMENDATIONS</b>	<b>32</b>
5.1. Trade Policy Issues	32
5.2 The Air Passenger Duty	34
5.3 The United Nations Framework Convention on Climate Change	34

5.4 The Kyoto Protocol Clean Development Mechanism	35
CONCLUDING REMARKS	36
ENDNOTES	38
REFERENCES	47

## LIST OF FIGURES, TABLES AND BOXES

### LIST OF FIGURES

Figure 1:	Caribbean Share of World Tourism Exports	1
Figure 2:	Direct and Indirect Contribution of Tourism to GDP in CARICOM States in 2007	2
Figure 3:	Travel and Tourism Direct and Indirect Contribution to GDP in CARICOM: 2000-2009	2
Figure 4:	Primary CARICOM Exports: 2003-2006	3
Figure 5:	Travel and Tourism Contribution to Employment in the Caribbean	4
Figure 6:	Tourist Arrivals into CARICOM Member States in 2008	4
Figure 7:	Illustration of Tourism Linkages in the Local Economy	7
Figure 8:	Diagram illustrating Adaptive Capacity within the Tourism Sector	12
Figure 9:	Sectoral Use of Electricity in Barbados in 2004	16
Figure 10:	Liberalized Environmental Services under the CARIFORUM-EU EPA	25
Figure 11:	Simplified Illustration of CDM project cycle	30

### LIST OF TABLES

Table 1:	Cross-Section of Adaptation Needs relevant to the Tourism sector in the Caribbean	11
Table 2:	UK Air Passenger Duty 2009-2011	19
Table 3:	CDM Project Activities in Selected Countries as of October 29th 2009	31

### LIST OF BOXES

Box 1:	Sustainability of Sports Tourism Threatened by Climate Change?	5
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## ABBREVIATIONS AND ACRONYMS

ACCC	Adaptation to Climate Change in the Caribbean [Project]
AOSIS	Alliance of Small Island States
APEC	Asia-Pacific Economic Cooperation
CARICOM	The Caribbean Community
CARIFORUM	The Caribbean Forum of African, Caribbean and Pacific States
CAST	Caribbean Alliance for Sustainable Tourism
CCCCC	Caribbean Community Climate Change Centre
CDERA	Caribbean Disaster Emergency Response Agency
CDM	Clean Development Mechanism
CDM-EB	Clean Development Mechanism-Executive Board
CERs	Certified Emission Reductions
CHTA	Caribbean Hotel and Tourism Association
CHENACT	Caribbean Hotel Energy Efficiency Action
CPACC	Caribbean Planning for Adaptation to Global Climate Change
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CLDF	CARICOM Legislative Drafting Facility
CO <sub>2</sub>	Carbon dioxide
CTE	Committee on Trade and Environment (of the World Trade Organization)
CTO	Caribbean Tourism Organization
DFQF	Duty Free Quota Free
DNA	Designated National Authority
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GEF	Global Environment Facility
GNI	Gross National Income
GHG(s)	Greenhouse gas(es)
EGs	Environmental Goods
EGS	Environmental Goods and Services
EIA	Environmental Impact Assessment
EPA	Economic Partnership Agreement
ESCOs	Energy Service Companies
EVSL	Early Voluntary Sector Liberalization
FDI	Foreign Direct Investment
ICC	International Cricket Council
IHRA	International Hotel and Restaurant Association
IPCC	Intergovernmental Panel on Climate Change
IPPs	Independent Power Producers
LDCs	Less Developed Countries

MACC	Mainstreaming Adaptation to Climate Change [Project]
MDCs	More Developed Countries
MEA(s)	Multilateral Environmental Agreement(s)
MOU	Memorandum of Understanding
ODS	Ozone Depleting Substances
OECD	Organization for Economic Co-operation and Development
OECS	Organization of Eastern Caribbean States
PDD	Project Design Document
RTA(s)	Regional Trade Agreement(s)
SIDS	Small Island Developing States
SME(s)	Small and Medium Enterprises(s)
SWH(s)	Solar Water Heater(s)
TDA	Tourism Development Act (of Barbados)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-FI	United Nations Environment Programme-Finance Initiative
UNFCCC	United Nations Framework Convention on Climate Change
UNWTO	United Nations World Tourism Organization
USP	Unique Selling Point
WTO	World Trade Organization
WTTC	World Travel and Tourism Council



## FOREWORD

The Caribbean is the most tourism-dependent region in the world. The sector is the greatest contributor of employment and Gross Domestic Product throughout most of the islands that comprise the archipelago. For these nations, tourism provides a source of foreign exchange and helps to stimulate other areas of the economy. The high dependence of the Caribbean on the tourism sector makes these economies vulnerable to potential external shocks. Not only are these Small Island Developing States overly reliant on the income earned by the sector, but also on travellers from a limited number of countries (United States, the European Union and Canada). Thus, in order to safeguard the short and long term viability of this sector, Caribbean nations must delve into opportunities to encourage greater intra-regional travel, boost the demand for domestic vacations, seek for new tourism markets and develop alternative tourism products so as to mitigate or eliminate threats that can adversely affect the international competitiveness of the tourism sector.

Climate change forecasts suggest that the Caribbean is particularly vulnerable to the impact of global warming. Tourism and other key economic sectors such as fisheries and agriculture will be major impact-takers under climate change. To make those economies more resilient to climate change impacts and other exogenous shocks both mitigation and adaptation measures will have to be pursued in the tourism sector. Mitigation actions could reduce energy consumption by improving energy efficiency, increasing the use of renewable energy, and implementing carbon-offsetting strategies. Moreover, given the great interest and increasing demand for sustainable and eco-tourism, new business opportunities could emerge.

In the case of adaptation, large amounts of resources will need to be deployed in order to come up with strategies to deal with sea-level rise through shoreline protection, gradual replacement of infrastructure in non-threatened locations, mandatory building setbacks in coastal areas, geographic diversification of economic activities, and in many cases the resettlement of coastal populations. Likewise, in order to minimize hurricane damage, buildings and tourism infrastructure should be strengthened. However, adaptation measures cannot be undertaken in isolation. They need to be placed within the broader context of a country's sustainable development policies and strategies in order to be effective and coherent. Links between sectors could also be beneficial such as promoting beach and rural tourism together. Thus, possible complementarities among sectors could build climate change resilience in the Caribbean.

The present Issue Paper (No 10) "Resilience Amidst Rising Tides" by Keron Niles, a Research Consultant, aims to deepen our understanding of the key mitigation and adaptation challenges the tourism sector faces in the Caribbean. Moreover, the study explores the issues at the interface of trade, climate change, and sustainable development of concern and interests to Caribbean countries, with a focus on the competitiveness of the tourism sector. Indeed, trade policy has an important role to play in this context. Niles argues that through the potential liberalisation of environmental goods and services (EGS), a few climate friendly technologies could be made available to decrease the Caribbean's collective carbon footprint. Moreover, environmental services geared to reduce climate change vulnerability and foster resilience could be both imported and exported at the regional and international level.

Ultimately, the purpose of this paper is to foster an informed discussion among governments, private sector and civil society in order to search for plausible ways to address adaptation and mitigation challenges in the tourism sector and build resilience in the Caribbean.



Ricardo Meléndez-Ortiz  
Chief Executive, ICTSD

## EXECUTIVE SUMMARY

The Caribbean is the most tourism-dependent region in the world.<sup>1</sup> The tourism sector is the greatest contributor to employment and gross domestic product (GDP) throughout most of the islands that comprise the archipelago. It should be noted that for the purposes of this paper, the term Caribbean is used to refer to the primarily English-speaking islands nestled in the Caribbean Sea that form the regional grouping known as the Caribbean Community (CARICOM)<sup>2</sup>. For these nations, tourism not only provides a healthy source of foreign exchange, but also helps to stimulate other areas of the economy.

The extent to which the Caribbean is dependent on the tourism sector (which is already sensitive to climate change impacts) however, is unhealthy. Not only are these small island developing states (SIDS) overly reliant on the income earned from this sector, but the region is also dependent upon travellers from a limited number of markets. Thus, in order to safeguard the short- and long-term viability of the sector within the region, Caribbean nations must examine opportunities to help boost the demand for domestic vacations (also referred to as ‘staycations’), to encourage greater intra-regional travel, to seek new tourism markets and to develop new or alternative tourism products so as to mitigate or eliminate threats that can adversely affect the international competitiveness of the Caribbean tourism sector.

### *The Threat of Climate Change*

Climate Change is one such threat. That said, in seeking to present a balanced and honest account of this issue, it is also necessary to acknowledge the threat that continued growth of worldwide tourism poses to the environment. Simpson et al, in making reference to the UNWTO/UNEP/WMO report on climate change and tourism, note that “emissions from tourism, including transports, accommodation and activities (excluding the energy used for construction and facilities for example) account for about 5 percent of global CO<sub>2</sub> [i.e. carbon dioxide] emissions.”<sup>3</sup> The tourism sector’s contribution to global warming (particularly via the aviation industry) is expected to increase.<sup>4</sup> However, this paper will not explore the impact of the tourism sector on climate change; rather, it will seek to highlight the adverse effects climate change can have on Caribbean tourism – with a view to making the sector more resilient amidst the impacts of a warming planet. It is from this standpoint that a case will be made for reducing energy demand and increasing the use of climate-friendly goods and services. It is from this alternative context that recommendations will be made for the pursuit of low-carbon economic growth.

Increased environmental awareness and sensitivity to climate change can make potential travellers from traditional tourist markets (such as the Canada, Europe and the United States of America) more apprehensive about embarking on long-haul flights to the Caribbean. In addition, efforts by other nations to adopt mitigation policies to decrease emissions, such as by increasing environmental levies and duties – particularly on air travel, can increase the price of travel to the Caribbean. This, by extension, could stifle demand for travel to the region. In addition, increased global temperatures are expected to, *inter alia*, increase the occurrence of natural disasters (such as hurricanes) and bring about sea-level rise. These factors will “exacerbate inundation, storm surge, erosion and coastal hazards thereby threatening vital infrastructure, settlements and facilities that support the livelihood of island communities.”<sup>5</sup> Climate Change may, therefore, increase the likelihood of severe damage to tourist attractions, which could cripple the region’s ability to maintain attractive and competitive tourism products in the long-term.

### *Strategic Policy Responses*

At present, the Caribbean is a well-established tourist destination. This paper asserts that the following changes are needed to maintain or even enhance the region’s tourism competitiveness in the face of the threat of climate change:

- Enhanced use of climate-friendly goods and services along with increased energy efficiency can reduce costs to proprietors and help make the sector more attractive to environmentally-conscious travellers. In that regard, increased use of energy-conserving technologies not only

strengthens efforts to promote the region as a carbon neutral zone, but also helps to develop the enabling environment necessary to boost adaptation to climate change.

- Trade policies should support the local manufacture of climate-friendly technologies by, inter alia, decreasing or removing tariffs on inputs necessary for production and by shielding such goods from external competition for a measured period.
- Policies incentivising the acquisition, application and manufacture of climate-friendly goods are not (in and of themselves) likely to be effective if applied in a vacuum. Tourists and proprietors alike need to be engaged and informed (through education and re-training) of the importance of decreasing their carbon footprint in order to bring about the behavioural changes needed to reduce the sector's energy demand.
- The British Air Passenger Duty is a carbon tax meant to discourage long haul travel. Though meant to decrease CO<sub>2</sub> emissions accrued from air transport, the levy is unjustifiably discriminatory and disadvantageous to the Caribbean region and should be reformed or repealed immediately.
- Caribbean nations should lobby for a new, more robust, legally-binding climate change agreement in order to strengthen efforts made through the United Nations Framework Convention on Climate Change (UNFCCC). In addition, this treaty, while preserving the principle of 'common but differentiated responsibilities' thus, requiring industrial nations to lead in making GHG emission reductions – should also require binding commitments from developed and developing countries to lower their CO<sub>2</sub> outputs.
- A new climate change regime should provide sufficient incentives to promote low-carbon economic growth, so as not to stifle development in emerging economies. In addition, tying economic growth to national emissions targets (through an Emission Intensity approach) could provide an added impetus for the Caribbean tourism sector to lower its carbon footprint, in order to move the region further toward the achievement of a 'carbon neutral zone'. This approach is likely to be more effective if financial assistance is tied to low-carbon growth.
- National efforts to develop and implement projects that can attract funding through the Clean Development Mechanism (CDM) are still disjointed. A greater degree of regionalism should be encouraged in this regard, in particular as region-wide projects offer greater benefits to industrial nations utilising this scheme.

In seeking to safeguard the viability of the tourism sector in the context of a warming planet, this paper argues that increased use of climate-friendly goods, accompanied by public education efforts to reform attitudes and behaviour concerning energy usage should draw the Caribbean closer to becoming a carbon neutral zone. In addition, greater regional cooperation can serve to attract investment, particularly in the form of international development assistance that can then be used to execute programmes to build the capacity of the tourism sector to adapt to the adverse effects of climate change.

## 1. TOURISM, TRADE AND DEVELOPMENT IN THE CARIBBEAN

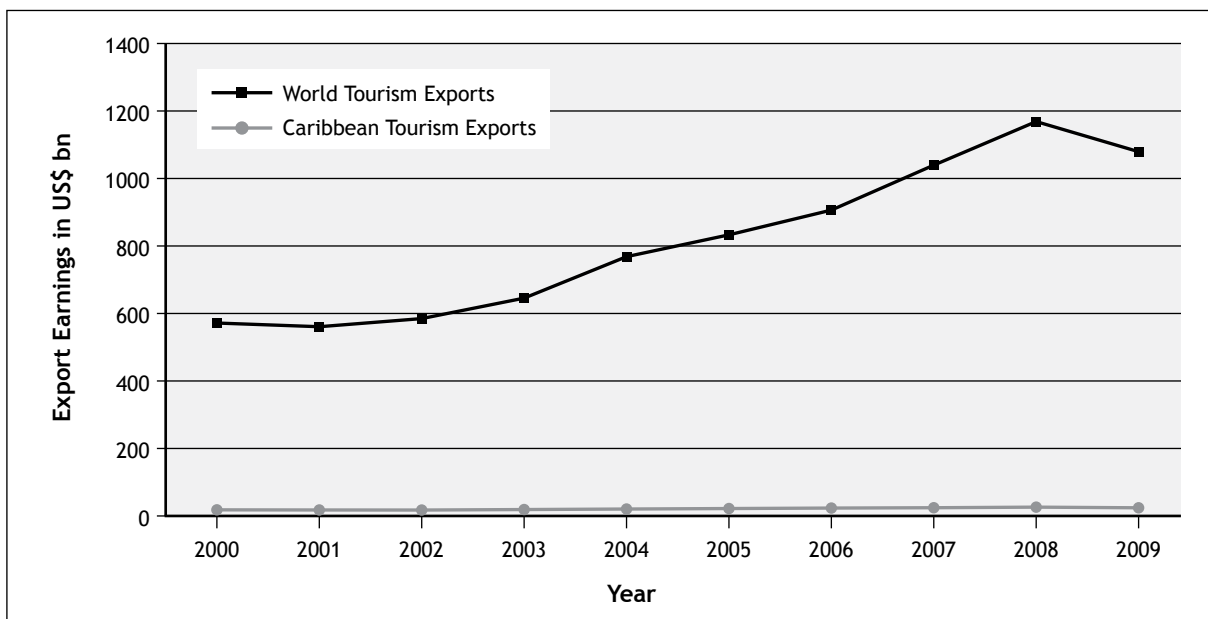
### 1.1 The Caribbean Tourism Sector

Ten years ago, in April 1999, a report prepared by the World Travel and Tourism Council (WTTTC) and the International Hotel and Restaurant Association (IHRA) entitled “Tourism and Sustainable Development: The Global Importance of Tourism” asserted that “Travel and Tourism is the world’s largest industry and creator of jobs across national and regional economies.”<sup>6</sup> This finding may have particular importance in the archipelago known as the Caribbean. For the purposes of this paper, the term Caribbean is used to refer to the primarily English-speaking islands nestled in the Caribbean Sea that form the regional grouping known as the Caribbean Community (CARICOM).<sup>7</sup> The island states that form this grouping share a similar socio-cultural heritage and constitute a cus-

toms union and single market of small-island developing states (SIDS).

Tourism constitutes a major source of revenue and employment in the region. Having said that, it is important to note that the Caribbean share of global tourism exports in absolute terms is low (see Figure 1). According to the WTTTC, in 2008, world tourism exports were valued at approximately USD 1169 billion. The Caribbean share for the same year was approximately USD twenty six billion. Nevertheless, the role of the tourism sector in the Caribbean is critical as the sector represents CARICOM’s largest export when compared to other forms of economic activity (see Figure 4). Indeed, the region may be overly dependent on its earnings.

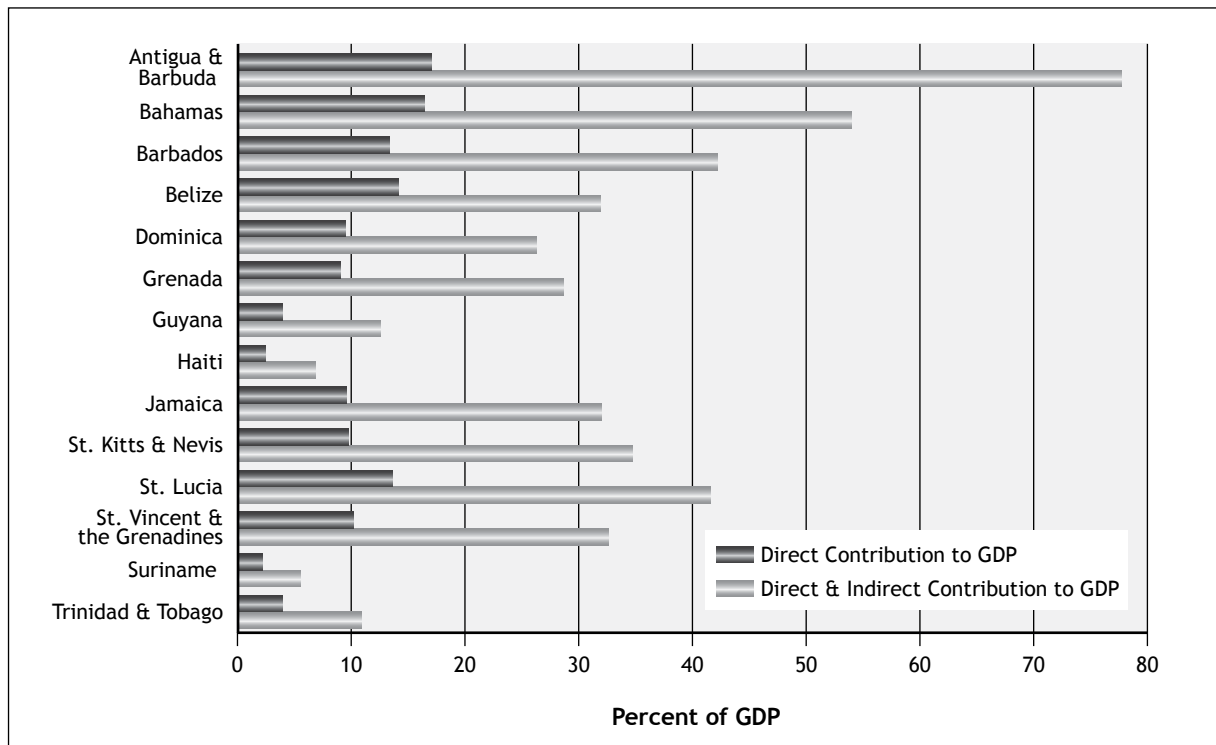
Figure 1. Caribbean Share of World Tourism Exports



Source: World Travel and Tourism Council.

As indicated by the head of the Caribbean Council, David Jessop, in 2009, the tourism industry is expected to provide “on average ten percent of government revenues, fourteen and a half percent of GDP and twelve percent of regional employment; [with] figures that are much higher in Caribbean states where tourism leads economic activity.”<sup>8</sup> In 2007, the direct and indirect economic activity generated by the Travel and tourism industry accounted for approximately 34.7 percent of GDP in St. Kitts and Nevis, 32 percent of GDP in Jamaica and a staggering 77.7 percent

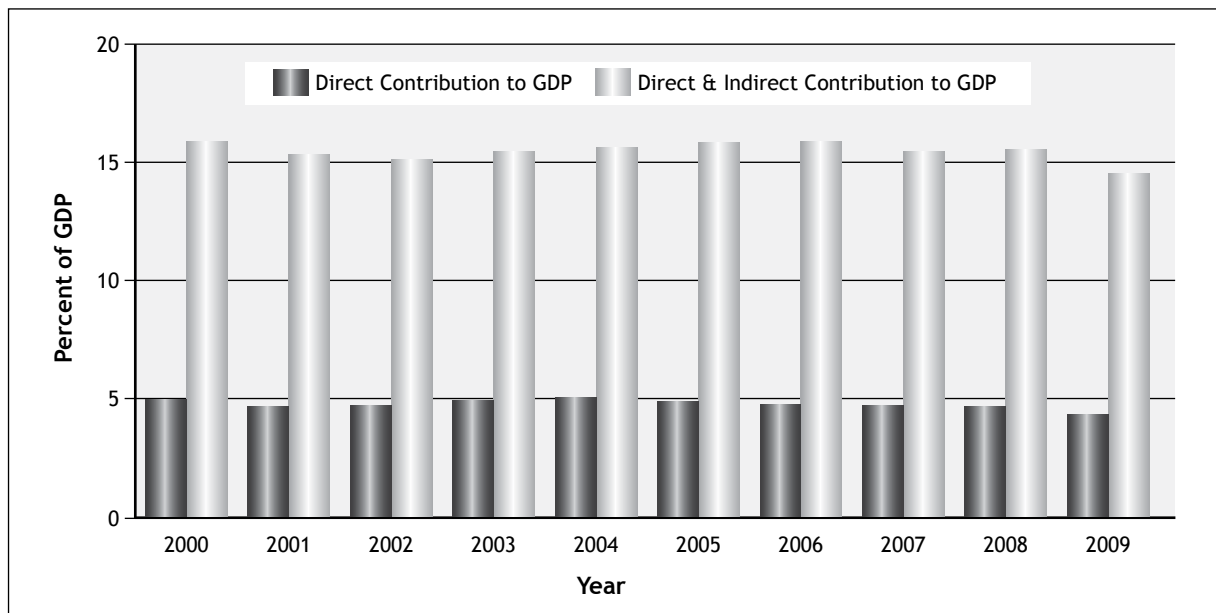
of GDP in Antigua and Barbuda (see figure 2). Collectively, in the nations that comprise the Organization of Eastern Caribbean States (OECS)<sup>9</sup>, in 2007, the tourism sector accounted for an “estimated 45 percent of GDP, and around 60 percent of foreign exchange earnings, as a result of the more than 2.6 million tourists that visited these islands.”<sup>10</sup> Across the region, as illustrated in Figure 3, the Travel and tourism industry has contributed well over ten percent of regional GDP since the turn of the millennium (and prior to that period as well).

**Figure 2. Direct and Indirect Contribution of Tourism to GDP in CARICOM States in 2007**

Source: World Travel and Tourism Council.<sup>11</sup>

Perhaps even more important is the indirect impact that the travel and tourism sector has on GDP. As is illustrated in Figure 3, from the year

2000 to the present (2009), the indirect contribution of the sector to GDP is approximately three times that of the sector's direct contribution.

**Figure 3. Travel and Tourism Direct and Indirect Contribution to GDP in CARICOM: 2000-2009**

Source: World Travel and Tourism Council.

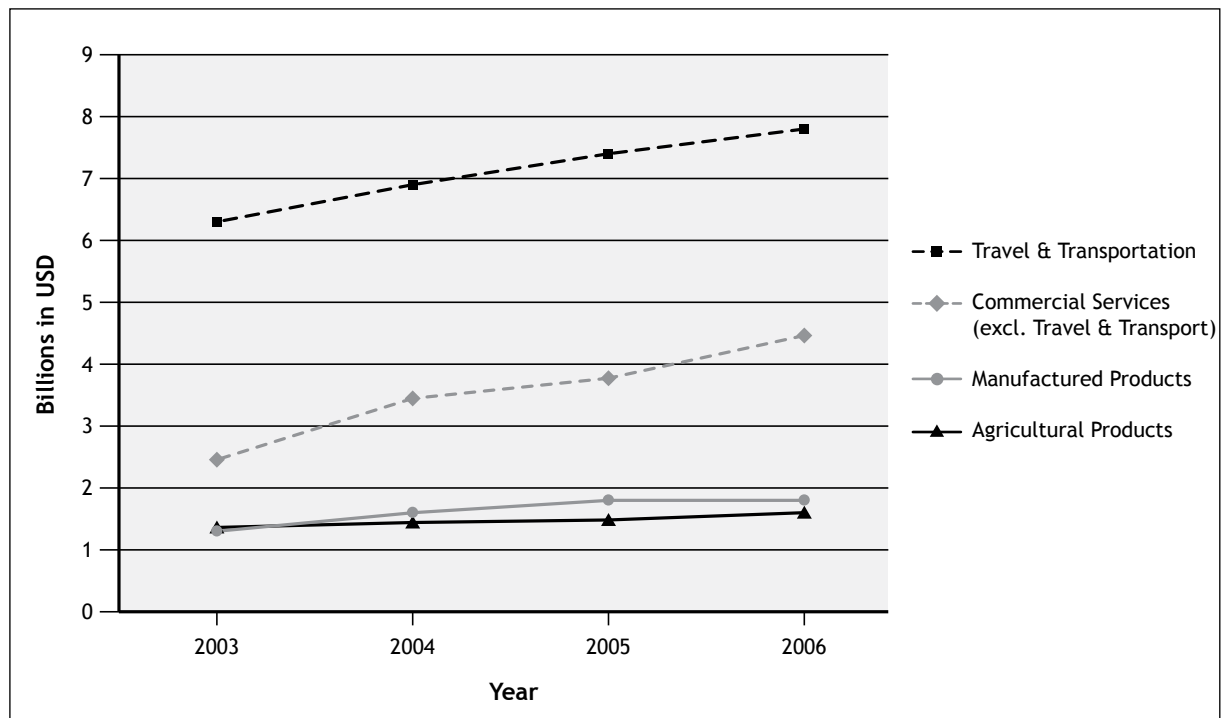
Earnings from the tourism sector also outstrip exports from other sectors in the region. As illustrated in Figure 4, exports related to travel and transportation surpass those from all other

sectors including manufacturing and agriculture. As the premier source of exports, the Caribbean is heavily reliant on tourism not only as a source of foreign exchange earnings but also as a source

of employment. This is primarily because the tourism sector is as diverse as it is far-reaching. Through hotels, tour operators, ground transportation providers and other direct tourism-based services the industry provides a healthy source of revenue and employment that spreads throughout economies. The industry also provides income for a much wider cross section of society as tourists often demand a large variety of goods and services, including through local clothing and variety retail outlets, banks and restaurants. The economy is stimulated even further when persons employed directly and indirectly by the tourism sector go on to spend their earnings on other goods and services.

That said, it is noteworthy to highlight that the primary difference between direct tourism-based services and supporting or indirect tourist services is that the latter do not usually require the tourist market to be viable. Instead, tourism simply provides an added source of revenue for firms. For example, this group would include construction companies, wine retailers and furniture manufacturing companies. Similarly, tourism is said to provide for direct and indirect employment. Thus, the individuals employed directly by a hotel would be said to be directly employed by the sector, while the construction worker who is employed by his firm to conduct repairs and renovations on the same hotel would be seen as

**Figure 4. Primary CARICOM Exports: 2003-2006**



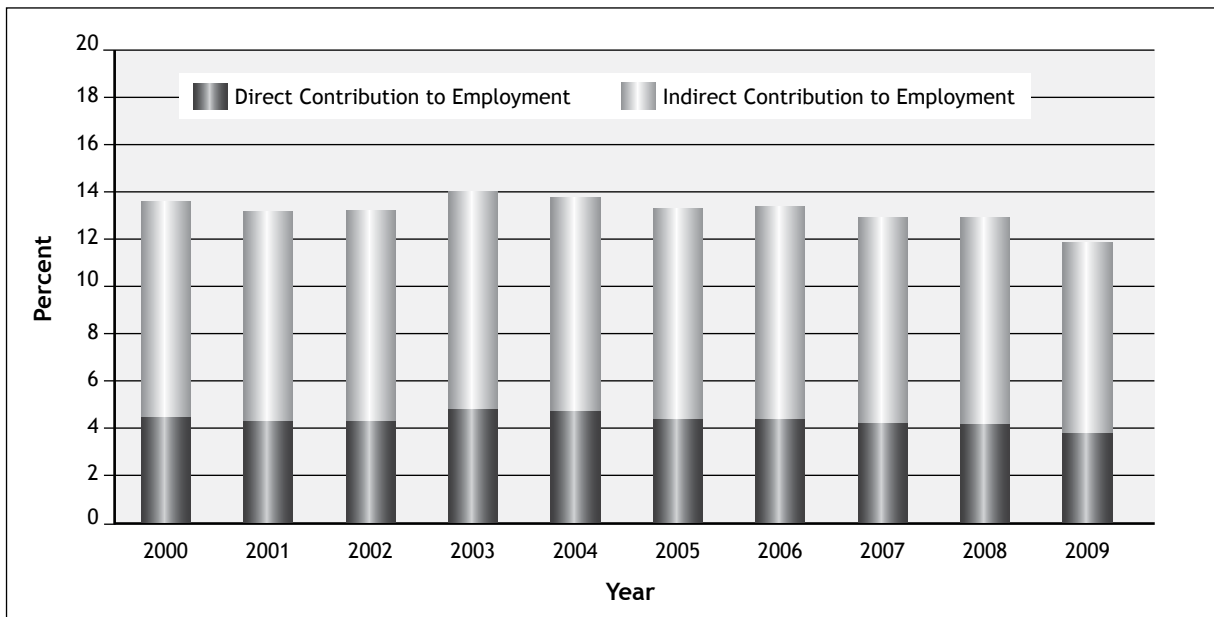
Source: World Trade Organization.

an example of indirect employment. Nevertheless, both variables (direct and indirect) should be measured to accurately capture the total contribution of tourism to employment and other socio-economic indicators.

As illustrated in Figure 5, and again, reflective of the very diverse nature of the tourism sector, the indirect employment gained greatly outpaced the degree of direct employment between 2000

and 2009. In mapping the sector, therefore, it is critical to note that the value of the tourism sector to the Caribbean is not simply bound to hotel occupancy rates, but rather, it is the total economic activity generated by visitors to the region. It is the linkages that are formed to satisfy the demand for goods and services generated by visitors to the region that provides the most diverse (and arguably the most valuable) forms of employment.

Figure 5. Travel and Tourism Contribution to Employment in the Caribbean

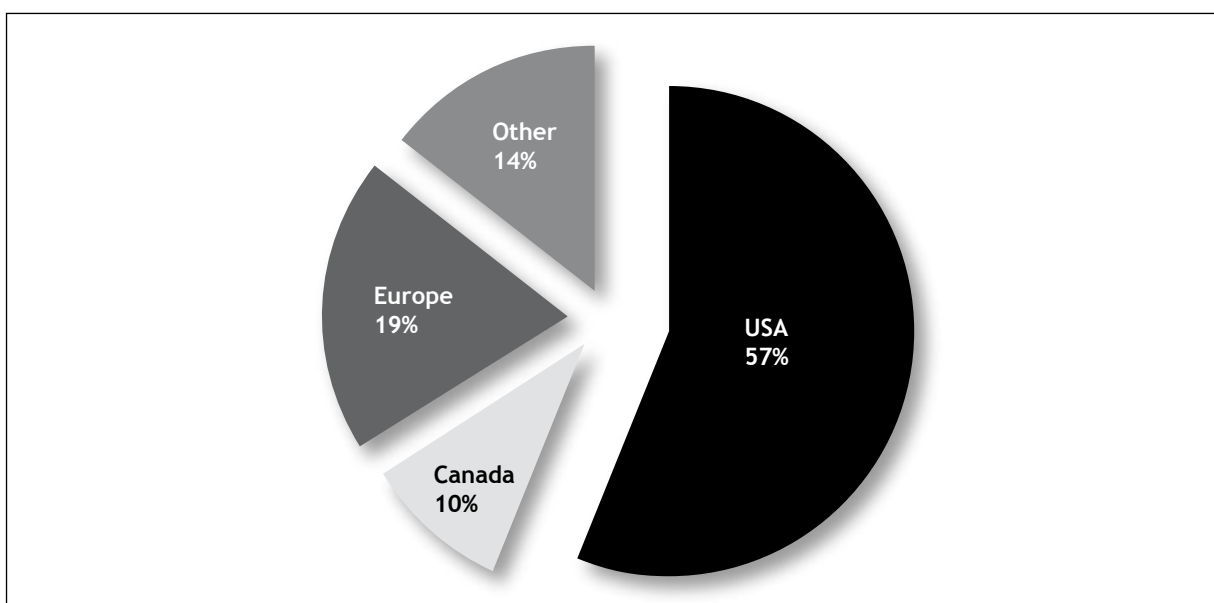


Source: World Travel and Tourism Council.

The reliance of the Caribbean on the tourism sector points to the need for economic diversification. Not only is the region overly reliant on tourism exports for income and employment, it is also heavily dependent on tourists from a handful of tourist markets. As illustrated in Figure 6, in 2008, 57 percent of tourist arrivals into the Caribbean emanated from the United States alone, while arrivals from Canada and Europe accounted for ten and nineteen percent of arrivals respectively. Only about fourteen percent of arrivals into the region were from other markets. Thus, quite apart from the need to diversify into new

economic activities (to ease dependence on the tourism sector), it is imperative for the Caribbean to target travellers from other markets as well. In this respect, programmes that provide incentives for intra-regional travel, accompanied by sustained public advertising are necessary. Support for and promotion of domestic vacations (also referred to as 'staycations') can help reduce dependence on tourist arrivals from other markets. It is important to note, however, that such 'staycations' alone will not generate the foreign revenue necessary for the economic survival of tourism-dependent regions, like the Caribbean.

Figure 6. Tourist Arrivals into CARICOM Member States in 2008



Source: Caribbean Tourism Organization.<sup>12</sup>

## 1.2 Tourism Linkages and Their Relevance to Climate Change Adaptation

The tourism sector is integral to Caribbean economies largely owing to the linkages that exist with other sectors domestically and at a regional level. As indicated earlier, the tourism industry promotes growth within a number of different sectors. One example of this is reflected in the efforts that have been made to formalize the relationship between the agricultural and the tourism sectors, particularly as this pertains to the supply of fresh produce to hotels and restaurants. This is important not merely because locally cultivated crops give visitors to the region an opportunity to sample indigenous food, but also because it helps to lessen the region's dependence on foreign produce while simultaneously reducing the Caribbean's (already high) food import bill. Increasing the supply of locally produced crops also helps to reduce GHG emissions accrued in transporting foreign produce to the Caribbean.

In addition, the tourism sector presents a viable market for processed agricultural goods which are packaged, portable and exportable to tourist markets.<sup>13</sup> Opportunities also exist through agro-tourism, as visitors to the region can choose to go on farm tours or tours of plantations and agricultural processing plants for sugar cane (in the case of Barbados and Guyana, for example) or nutmeg and cocoa (as exists in Grenada). For example, visitors to Grenada are able to tour the cocoa fermentary at 'the Belmont Estate' to witness the cultivation of the crop as it is prepared to make dark chocolate. Patrons are even given the opportunity to 'walk the cocoa' (a process which helps to dry the cocoa beans evenly). By offering tours of its gardens and plantation, the Belmont

Estate has assisted in enhancing Grenada's overall tourism product, and the Estate attracted approximately 4,500 visitors in 2008.<sup>14</sup> While such opportunities do exist, they remain somewhat under-explored within the region.

Indeed, opportunities of this nature that can help to build long-term resilience to climate change. According to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), small islands, akin to those found in the Caribbean, have specific "characteristics which make them especially vulnerable to the effects of climate change."<sup>15</sup> The report indicates that small islands are likely to face, *inter alia*, sea-level rise (which can bring about greater floods and coastal erosion) and more extreme and intense natural disasters, such as hurricanes, that can damage vital infrastructure. Thus, in the face of eroding beaches (which represent a major recreational tourist attraction) and greater coastal hazards, the development of tourism linkages, which can serve to create new or alternative tourism products (such as agro-tourism) is critical to adaptation efforts within SIDS threatened by climate change impacts. Alternative tourism products (which will be explored further in section 2.2.) help to diversify the tourism sector and reduce vulnerability to climate change impacts, particularly through developing new products in locations less susceptible to the aforementioned effects of a warming planet. Even further, diversification of the sector also serves to differentiate the Caribbean tourism product from that of competing destinations, thereby enhancing what is often referred to in the literature as the 'unique selling point' (USP) of the region.

### Box 1: Sustainability of Sports Tourism Threatened by Climate Change?

In the Caribbean, the link between sports and tourism is already established, particularly as it relates to cricket. Every year several international cricket teams tour the Caribbean region by playing matches in at least three Caribbean territories (against a single regional team from the Caribbean). This linkage is seen as beneficial to the Caribbean as fans and supporters often accompany their teams for the duration of the tour. In addition, these tours stimulate other forms of economic activity and help to promote the game of cricket. This became particularly evident during the recent International Cricket Council (ICC) Cricket World Cup. The event, which took place from 13 March to 28 April 2007, featured a total of 51 matches between teams from sixteen countries played in eight Caribbean nations. The occasion not only attracted thousands of visitors to the region, but nations hosting the matches were able to earn income from ticket sales, sponsorship deals, as well as from television and media rights to the event. In fact, an audited report of the tournament indicated that the tournament had an overall surplus of USD 53.9 million, believed to be the highest event surplus in the history



of the Cricket World Cup. Approximately half of the earnings were to be remitted to local organising committees across the Caribbean.<sup>16</sup> In addition, specifically for Grenada (which, it should be noted, is one of the less developed countries in the CARICOM<sup>17</sup>), “the Cricket World Cup had a very positive impact on the local travel and tourism market. Arrivals [into Grenada] increased strongly as a direct result of the World Cup in 2007, while the transportation, car rental and travel retail products all showed healthy growth.”<sup>18</sup> As such, this internationally august event was able to stimulate other areas of economic activity throughout the region.

However, the long-term growth and development of sports tourism in the region is threatened by increased occurrences of severe weather patterns associated with climate change. More intense hurricane seasons in the Caribbean (for example) may cripple the region’s ability to host major sporting events. Future planning for the expansion of international sporting activities should, therefore, include climate change adaptation strategies including but not limited to earthquake and high-wind resistant indoor facilities and infrastructure along with increased interaction with organizations that collect, collate and interpret meteorological data.

### 1.3 Tourism and Trade

#### 1.3.1. Tourism as a tool to strengthen internal linkages

Put simply, tourism creates a demand for other services and, in so doing, naturally fosters opportunities for other forms of trade and economic activity. Therefore, the industry can be used to forge creative and strategic trade linkages that could help to encourage investment, create job opportunities, stimulate new tourism products and promote business linkages within the economy (see Figure 4). However, achieving this would require a sustainable approach to satisfying local and export demand in a way that facilitates the enhanced output and sales of agro produce, crafts and art, along with increased opportunities for artisans to gain employment in the tourism sector to sell more of their products to tourists and other actors within the industry.<sup>19</sup>

If these opportunities are to be realized, innovation and industrial policy aimed at capacity building and development is crucial. For example,

tourism may boost the demand for specific goods and services (such as souvenirs and tour operator services) in an economic environment where domestic capacity is limited, probably due to small size (bringing about diseconomies of scale) or a lack of financial resources and investment necessary to expand operations. In response to such limitations, domestic capacity can be enhanced through training and/or financial injections through industrial development agencies. Factories or assembly plants may also need to be built to boost local production. In such a scenario, trade policy can also be utilised to protect local industry. Conversely however, the industry could be liberalized to promote competition. Opening various industries within the tourism sector may help to make those industries more competitive and create pressure for reduced prices and enhanced service quality, which by extension could help make the overall tourism product more attractive to potential tourists.

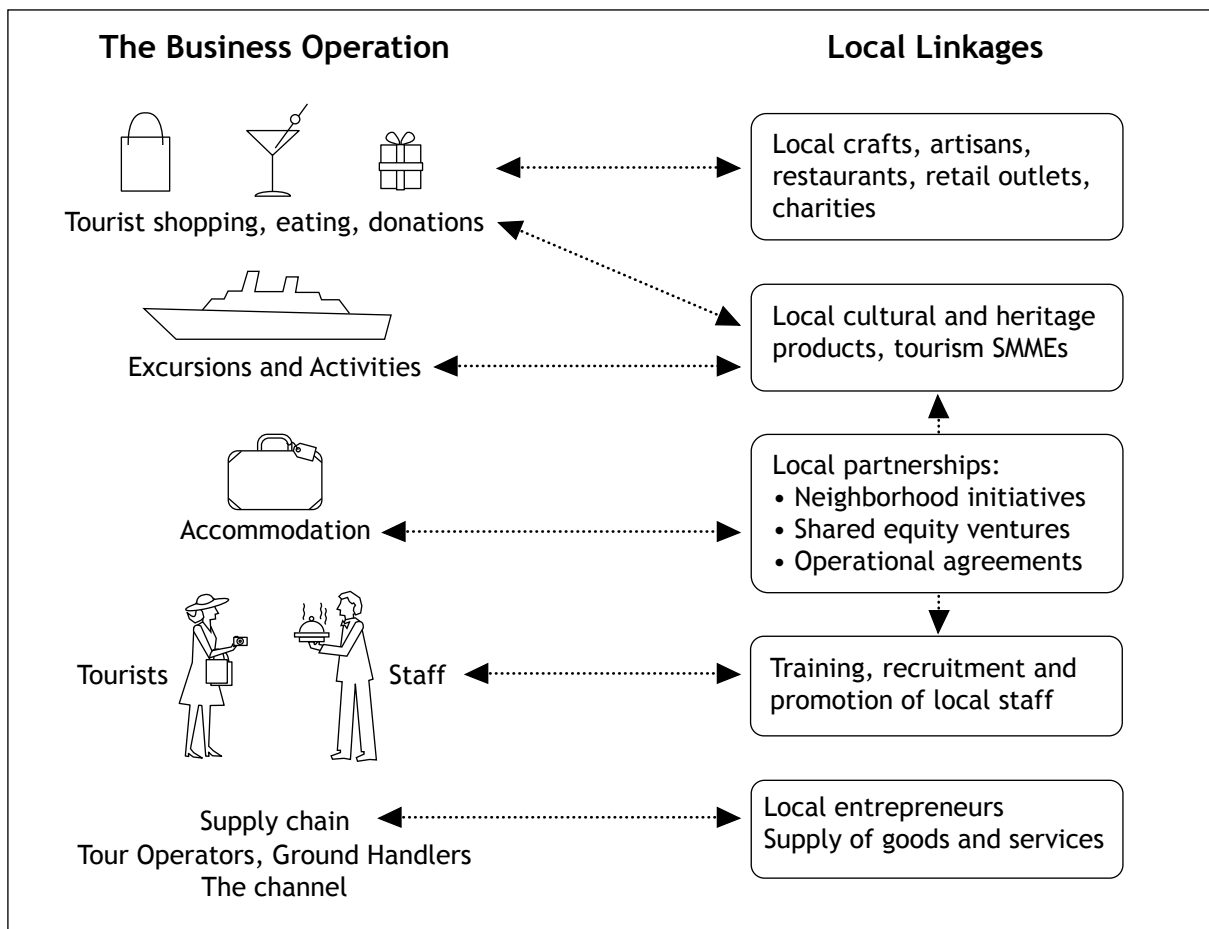
#### 1.3.2 Tourism and its fundamental link to international trade

It is important to note that the most fundamental linkage between trade and tourism lies in the fact that tourism is a form of services trade. It is an economic activity that is most often manifested through Mode 2 of international trade in services, also known as the ‘consumption abroad’ mode, where nationals of one country move to consume the service in another territory. In the case of the Caribbean (and in its simplest form), persons primarily from Canada, Europe and the

United States (as indicated earlier) travel to purchase hospitality as well as a range of other services in the Caribbean.

Were a potential visitor to stay in his or her home country and consume a Caribbean service via the Internet (such as paying for access to watch a jazz concert in a Caribbean island), this would be referred to as Mode 1 trade in services also referred to as cross-border trade. In such a case, neither

Figure 7. Illustration of Tourism Linkages in the Local Economy



Source: Overseas Development Institute, 2006.<sup>20</sup>

the consumer nor the supplier (service provider) moves for the service to be traded. In the case of Mode 2 services trade, it is the very movement of the consumer to another market that creates opportunities for trade. The entry of tourists into the Caribbean presents opportunities to promote local and regional goods and services to persons from other potential markets. This is particularly important as the movement of persons represents a unique opportunity to promote goods and services in which the Caribbean may hold a comparative advantage. Such goods range from arts and crafts to textiles to food and beverage products. The response of tourists to such products can at times also be used as a barometer of the exportability of products to those markets from which tourists emanate.

In addition to this, tourists also have the potential to become investors in local enterprises. Whether planned or not, international visitors may discover innovative uses of local products and technologies in their home market or may simply encounter an opportunity to capture niche markets in their home country by acquiring 'exotic' products or unique-service delivery tech-

niques from tourist destinations. To add to this, many tourist-based enterprises (primarily hotels) are able to offer services, such as conference and video-conferencing facilities, that cater directly to the needs of businesspersons. International investors are, therefore, able to make use of the wide network of resources that can be accessed through hotels. Thus, in practice, hotels often provide access to telecommunication (Internet, phone and fax) services, transportation services, translation services (for multi-lingual meetings) and even health and wellness services (through gyms and massage services, for example) that support the conduct of those engaged in business and trade in very pragmatic ways. This sort of linkage provides the necessary impetus for the growth of business and conference tourism, which can be a viable alternative tourist product for established tourist destinations, such as those within the Caribbean. It is perhaps for this reason that more Caribbean tourist destinations are attempting to market themselves as premier business/conference tourism destinations. Trinidad and Tobago has been acknowledged as having made pronounced efforts in this regard. According to the World Travel and Tourism Council, Trini-

dad and Tobago is expected to grow its exports in international business travel at a rate of nineteen point four percent in 2009, faster than any other country in the world.<sup>21</sup> As mentioned earlier, the

development of non-traditional tourist products (like business/conference tourism) does help to diversify and build resilience within the sector against external threats, such as climate change.

#### 1.4 Tourism as a Mechanism to Raise Regional Concerns

The Caribbean “is the most tourism-dependent region in the world, as the travel and tourism industry is the largest source of both foreign exchange and employment.”<sup>22</sup> In this regard, the industry is the largest contributor to economic stability within the region. This shared economic interest in tourism has often led to concerted efforts to safeguard the future of the sector. To begin, efforts have been made, through organizations like the Caribbean Tourism Organization (CTO) and other regional tourism bodies, including the Caribbean Hotel and Tourism Association (CHTA), to engage policy-makers to help prevent to societal ills and external threats like climate change that threaten the viability of the industry. Non-governmental regional organizations, such as these have in the past produced position papers and spearheaded independent projects to advance climate change adaptation and mitigation efforts in the Caribbean. The Caribbean Hotel Energy Efficiency Action (CHENACT) project, featured later in this paper, is one example of a collaborative effort by the CTO and the CHTA to reduce emissions from the tourism sector in the Caribbean.

It may also be useful to note that attempts have been made to promote Caribbean tourism as a single regional brand. Such a campaign helps to further the ideal of regional economic develop-

ment through functional cooperation. One may posit by extension that such joint action can serve to strengthen integration efforts within the region. Perhaps even more germane, however, is the (often indirect) contribution that tourism makes to the overall socio-economic and political stability of the region. In seeking to create a safe and comfortable environment for visitors, the tourism industry places pressure on governments (though to varying degrees) to minimise societal ills and negative externalities, including crime, political instability and severe environmental degradation. Thus, in order to secure the economic viability of the sector, governments often attempt to ensure that a relatively high level of socio-economic and political stability is maintained. It is, indeed, this dynamic that creates real opportunities for regional development, as it provides the platform for common approaches to common threats. In this regard, growing concerns about climate change (particularly within tourist markets) provide added incentives for governments within the region to create the legal and policy framework necessary to facilitate the increased use of adaptation and mitigation technologies, so as to become more marketable as a ‘carbon neutral’ region. As a result, policies that aim to enhance tourism competitiveness can also help to raise and highlight regional concerns, such as crime or climate change.

## 2. TOURISM AND CLIMATE CHANGE IN THE CARIBBEAN: ADAPTATION POLICIES AND STRATEGIES

### 2.1. A Brief Introduction to Climate Change Adaptation in the Caribbean<sup>23</sup>

As articulated by the IPCC (2007), adaptation is defined as “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.”<sup>24</sup> The countries of the Caribbean like other small island states, are particularly vulnerable to the effects of climatic change and as such do have adequate incentive to adopt policies and strategies geared toward preparing for adverse effects of global warming. Decisive steps were taken in 1994 at the Global Conference on the Sustainable Development of Small Island Developing States in Barbados, where calls for the development of a Caribbean-wide project addressing adaptation to climate change were made.

The resulting project, entitled Caribbean Planning for Adaptation to Climate Change (CPACC), was funded through the Global Environmental Facility (GEF). This project engaged the participation of a majority of CARICOM members<sup>25</sup> and was instituted from 1997 to 2001. The CPACC proved to be a landmark initiative within the Caribbean as it, among other things, increased awareness of the need for adaptation policies throughout the region, improved access to data pertaining to climate change and facilitated the establishment of coral reef monitoring protocols, which by extension could improve early warning mechanisms. In addition, “a total of eighteen sea-level and climate monitoring systems, along with the related data management and information networks, were installed in twelve countries”<sup>26</sup> in the Caribbean.

To build on the progress made via the CPACC, the Adaptation to Climate Change in the Caribbean (ACCC) project was initiated in 2001 and continued until 2004. The initiative led to the development of a “guide to assist environmental impact assessment (EIA) practitioners in CARICOM countries to integrate climate change in the EIA process”<sup>27</sup> as well as “risk management guidelines for climate change adaptation decision making.”<sup>28</sup> The ACCC project also produced the region’s first draft public education and outreach strategy that was specifically engineered to raise awareness about adaptation to climate change in the Caribbean.

In 2004, upon completion of the ACCC project, another scheme, known as the Mainstreaming Adaptation to Climate Change (MACC) project, was launched. This project was aimed at merging ad-

aptation strategies into the development agendas of small-island, low-lying CARICOM member states.<sup>29</sup> The MACC project therefore sought to ensure that climate change adaptation strategies and policies were infused into national (as well as sector-specific) policies and regulations. It, therefore, included a strong public education component geared toward engaging a wide cross section of stakeholders, including policy-makers and the media.<sup>30</sup> The MACC project lasted until 2007. However, in 2004, the Caribbean Community Climate Change Centre (CCCCC) was established and formally opened in August 2005 in Belmopan, Belize.

The CCCCC is meant to coordinate the region’s response to climate change while acting as the official repository and clearing house for climate change data in the Caribbean.<sup>31</sup> As the institution charged with offering policy advice and support to the public and private sector on issues pertaining to climate change in the Caribbean, the CCCCC has an on-going responsibility to monitor the region’s adaptation climate change impacts. The institution is also meant to provide “timely forecasts and analyses of potentially hazardous impacts of both natural and man-induced climatic changes on the environment.”<sup>32</sup> Accurate data documenting potential natural disasters is invaluable to stakeholders within the tourism sector, as this can create an avenue for officials to minimize personal injury, loss of life and damage to vital infrastructure due to natural hazards, such as hurricanes. Collaboration between officials of the tourism sector and those of the CCCCC, with a view to minimizing climate change impacts is therefore crucial. Understandably, therefore, the CTO has a seat on the organization’s Board of Governors.

It is noteworthy that there other initiatives within the Caribbean which aim to enhance the region’s ability to adapt to climate change. One example of such is the ‘CARIBSAVE’ project, which represents a partnership between the CCCCC and the University of Oxford, and it seeks to enhance the ability of the region’s tourism sector to reduce its contribution to global warming and to adapt to climate change impacts. The project will therefore, among other things, “assess the vulnerability, resilience and adaptive capacity of the tourism sector to climate change in the Caribbean region.”<sup>33</sup> Ultimately, CARIBSAVE aims to provide policy recommendations and practical strategies that can help the region to adapt to climate change.

## 2.2. Adaptation Needs in the Tourism Sector

Notwithstanding the above, as much as there is a centralized authority in the Caribbean charged with coordinating projects related to climate change adaptation, information gaps do exist within the region. The level of state engagement has not been uniform throughout the region. Therefore, interaction with the private sector and the level of public education as well as the integration and application of traditional knowledge with respect to climate change adaptation varies among Caribbean states. In addition, Haiti, Montserrat and Suriname did not participate in the aforementioned CPACC, ACCC and MACC projects. The progress made in integrating climate change measures into national legislation and regulations, therefore, differs from island to island. That said, it is important to note that since the majority of islands in the Caribbean are tourism-based economies, measures within national policies that address climate change adaptation will often be directly applicable to the tourism sector.

In addition, the viability of the tourism sector is influenced by wider national and regional adaptation technology and infrastructure. Of particular importance are technologies that allow for enhanced meteorological data and disaster-preparedness information. As alluded to earlier, such infrastructure could assist governments, service providers and tourists in preparing for potential catastrophic events. The application of such technologies across the region could help to contribute to a greater sense of safety and security for visitors and nationals alike, which, by extension, may assist in making the Caribbean a more attractive and resilient tourist destination. In this regard, it is useful to highlight that meteorological stations within the region were recently upgraded to enhance communication and networking capabilities.<sup>34</sup> At the time this paper was written, the stations were installed, although they were not yet transmitting to the Regional Archiving Centre, which is to be located in Belize.

It should also be noted that adaptation needs and technologies vary to a great degree, and

include construction engineering technologies (in erecting hurricane-resistant buildings), modifying water policies to cater to exacerbated water shortages associated with climate change as well as the transfer of skill and know-how to build long-term domestic capacity and support for adaptation activities (see Table 1). The formation of strong linkages between the private and public sector is imperative in order to facilitate the acquisition, utilization and efficient management of adaptation technologies to respond to the threats posed by a warming planet. More specifically, “there is a real need for effective communication between the climate change science community and tourism operators at the regional and local scale, particularly with respect to the development of climate change scenarios and indicators catered toward local tourism decision making.”<sup>35</sup> The formation and maintenance of linkages such as these can truly help to make the tourism sector more resilient and responsive to the threat of climate change.

Adaptation needs, even those specifically relevant to the tourism sector, though similar, are not identical in every Caribbean island. A simple illustration of this point can be made by making reference to coral reefs (which are vital to dive tourism in the region). Instruments to measure the level of salinity and water temperatures in Coral Reefs along with those used to monitor coral bleaching will largely be utilized (for that purpose) in islands where reefs are present, but they may not be necessary in other areas. As indicated earlier some adaptation technologies were diffused in the Caribbean between 1997 and 2007, during the process that eventually led to the formation of the CCCCC. Much of the technological adaptation needs in the tourism sector now also relate to the continuous upgrade, refurbishment or replacement of existing devices being used to monitor sea-level and climate changes—for example. Table 1 highlights some of the key adaptation needs in the region that are relevant to the tourism sector.

Table 1. Cross-Section of Adaptation Needs relevant to tourism sector in the Caribbean\*

ADAPTATION CATEGORISATION	ADAPTATION NEED	ADDITIONAL RELEVANT INFORMATION
Environmental	Meteorological services	Satellite and compiled in situ observations of sea surface temperatures
	Tidal gauges <sup>†</sup>	To measure sea level and detect tsunamis (future and continuous maintenance and upgrades).
Infrastructural	Sea Defences	In response to Sea Level Rise
	Hurricane Resistant Buildings	Natural disasters expected to become more frequent, more intense.
	Larger Water Storage Tanks	
Legislative and Regulatory	Revised Building Codes	Hurricane ready, perhaps with revised energy efficiency standards
	Land Zoning regulations	Particularly around rivers and coasts (e.g. to cater for long-term beach erosion)
	Modifying Water Policy	Adaptation to water shortages (e.g. water recycling regulations). Can help to ensure sustainability of hotels, resorts and golf courses that utilise sprinkler systems and may be water intensive.
Behavioural	Public/Tourist education campaign	
Human Resource Development	Training & Retraining of Staff	Sensitisation about need for greater energy efficiency, to lower energy demand from tourism
	Transfer of skill, know-how	

\*List not meant to be exhaustive, but rather exemplary, giving very key examples

<sup>†</sup>Tidal gauges last upgraded during MACC project, installations and upgrades may be necessary for CARICOM member states that did not participate in the MACC project (Haiti, Montserrat and Suriname)

It is also important to note that stakeholder interest in adaptation activities is likely to be greatly influenced by the extent to which they may be affected by somewhat foreseeable climate change impacts. For example, owners of beach-front hotels, villas and restaurants are more likely to be responsive to the need to install sea walls/defences and tidal gauges as sea levels rise. A recent study entitled “Climate Change and Tourism in Barbados”<sup>36</sup> by Cumberbatch et al, concluded that tourism stakeholders “had less knowledge and awareness of global climate change phenomenon and more of an appreciation for events that directly impact on their businesses and livelihoods.”<sup>37</sup> Cumberbatch also noted that stakeholders were reluctant to put preventative measures in place, even if they had been affected by inundation, since adaptation measures were viewed as costly, and because the number that had been seriously affected by direct climate change impacts

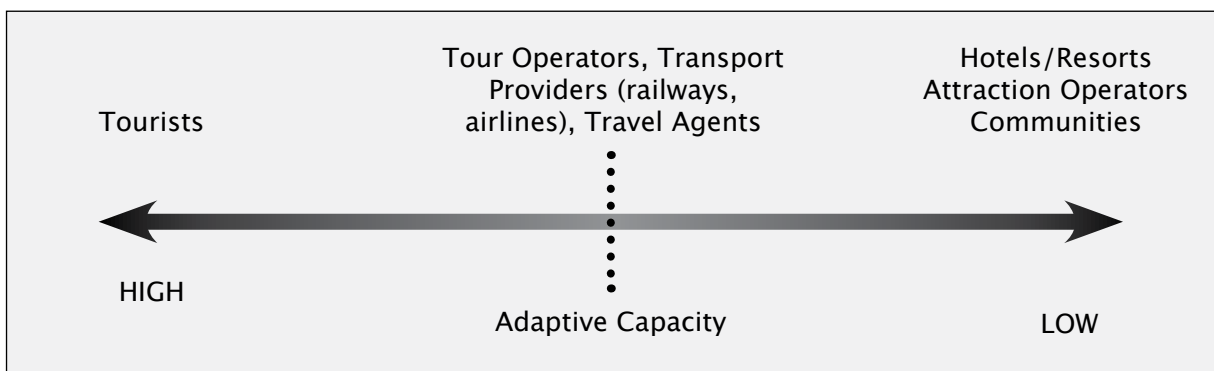
was relatively small. Climate change adaptation was also viewed as a government responsibility.<sup>38</sup> Therefore, stakeholder engagement and public education will need to be an important component of adaptation policies and strategies within the region, if support and participation from the sector is to be enhanced. It is not enough to acquire adaptation technologies. Tourism business owners must be educated on how climate change impacts will affect their operations. This may not only boost their willingness to be cooperative, but also give them a framework they can use to plan and prepare for such impacts.

However, the ability of individual tourism stakeholders to manoeuvre their operations to cater for climate change impacts differs within the sector. The concept, widely known as adaptive capacity, refers to “the ability or potential of a system [or enterprise] to respond successfully to climate

variability and change, and includes adjustments in both behaviour and in resources and technologies.”<sup>39</sup> The ability of tourism proprietors to respond to climate change impact depends *inter alia*, on the physical size, structure and nature of the operations, mobility (along with how quickly they can relocate their operational base), their location, the type of insurance (if any) they possess and their access to accurate and reliable information. As illustrated below, if the enterprise (as is in the case of a hotel) is in a fixed location and unable to move quickly in the event of a possible climate change impact such as inundation – due to sea level rise or a hurricane; then its adaptive capacity is

low. If, however, (as in the case of tour operators and cultural performers) the enterprise is not fixed to a particular location and can easily reschedule in the case of a natural disaster, it is said to have a higher adaptive capacity. The application of adaptation technology, therefore, should ultimately seek to boost the adaptive capacity of members of the tourism sector through the construction of infrastructure to dampen impacts, enhance access to information (about climate change and impending impacts), and should be accompanied by public education to influence behaviour and decision making, so that proprietors adopt preventative, adaptation measures and engage in long-term planning.

**Figure 8. Diagram Illustrating Adaptive Capacity within the Tourism Sector.**



Source: UNWTO-UNEP-WMO 2008.

### 2.3. Opportunities for New Tourism Products

The advent of climate change and other threats to the tourism sector has led nations within the Caribbean to explore alternatives to more traditional tourism products (sun, sea and sand) to which the region has become closely associated. As mentioned earlier, in the face of climate change impacts, such as beach loss due to coastal

erosion, new tourism products help to boost the competitiveness and resilience of the sector. The following provides a brief synopsis of a few examples of such alternative or new tourism products. It should however be noted that these categories of tourism products need not be (and are quite often not) mutually exclusive.

#### *Ecotourism*

Ecotourism often refers to travel to areas where people can observe, and even help to conserve, indigenous flora and fauna. The Caribbean region is home to a very diverse, serene and somewhat unexplored (particularly as it pertains to visitors) natural environment that ranges from the world’s tallest waterfall, to lush rainforests to volcanic plateaus. Increasing media attention and international awareness of environmental degradation and the threat of climate change, therefore, creates real opportunities to expand ecotourism within the Caribbean. Moreover, as the Caribbean region currently contributes less than one percent to global greenhouse gas emissions,<sup>40</sup> it can be marketed as a ‘carbon neutral zone’ which

could help make the region more attractive to potential eco-tourists. Becoming a ‘carbon neutral zone’ is particularly useful as there are concerns among tourism authorities within the Caribbean that as the climate change agenda becomes more accepted by the general public, that this might result in potential travellers from tourist markets choosing to remain within their own countries or regions during vacation periods, in lieu of travelling across the Atlantic to the Caribbean (in order to decrease their own carbon footprints).<sup>41</sup> Ecotourism therefore, represents a unique opportunity that can allow tourists to decrease their own carbon footprints and contribute to environmental sustainability while on vacation.

### *Heritage tourism*

Heritage tourism refers to tourist-based activities that promote an improved understanding of local history, culture and traditions. Such activities tend to afford visitors the opportunity to witness, experience and sometimes even participate in exercises performed or designed to recapture historical traditions and events. In the Caribbean, greater emphasis can be placed on promoting visits to historically significant communities, where ancient lifestyles and traditions have been preserved. In this regard, visits to Maroon communities<sup>42</sup> in Jamaica and Native Amerindian tribes in Guyana and Suriname definitely provide examples of opportunities for heritage tourism in the

Caribbean that can be further developed. This alternative to more conventional tourist activities is particularly useful, as it often facilitates the restoration and preservation of heritage sites and the natural environment. Heritage tourism may also be a particularly useful component of climate change adaptation planning, since the aforementioned sites tend to be situated within the hinterlands of Caribbean tourist destinations. As a result, this form of tourism may represent a potential for tourist activities to be located some distance away from low-lying coastal areas that may be adversely affected by climate change threats, such as sea-level rise.

### *Community tourism*

Community tourism refers to the involvement of a community in the offering and presentation of tourism products to visitors. The development of community tourism can afford members of the specific district in question (usually in rural areas) the opportunity to earn income directly through locally-owned enterprises and activities that can range from nature trail guides to the sale of artefacts and souvenirs. In this regard, this tourism product also has the potential to be used as a tool geared towards social empowerment. It is perhaps for this reason that the Tourism Development Act (TDA) of Barbados makes specific mention of the development of community tourism. The legislation offers a 150 percent tax rebate for *inter alia*,

*developing and operating nature trails throughout rural areas of Barbados to be used as tourist attractions, acquiring Green Globe*

*or similar certification; developing linkages between the tourism sector and other economic sectors; developing community tourism programmes, [or for] developing visitor exchange programmes between Barbados and other Caribbean countries.*<sup>43</sup>

Thus, whether realized through community festivals or through giving visitors the opportunity to stay with local families, community tourism presents an opportunity to offer unique indigenous experiences to visitors. It also provides natural incentives to preserve community traditions and to emphasize the development and promotion of community enterprises. Specific mention of developing tourist activities in rural areas also serves as a useful tool for climate change adaptation as it encourages movement away from low-lying coastal areas (as mentioned above).

## **2.4. Complementarities with Other Sectors to Adapt to Climate Change**

Increasing awareness of the threat of climate change (and associated risk reduction) has helped to bring to the fore a few of the complementarities and linkages with other sectors that can assist in adapting to a warmer planet. Such a relationship can certainly be observed within the renewable energy sector in Barbados. “Barbados has one of the world’s highest per capita rates of SWH penetration”<sup>44</sup> and is home to a thriving (though still relatively small) SWH industry. In addition, most hotels in Barbados are already fitted with SWH units and incentives exist for them to continue this progress under the TDA. As a result, there exists a

measure of partnership between the renewable energy sector and the tourism sector, primarily due to the savings that the former is able to offer the latter. The complementary nature of the two sectors is both financial and functional. Hotels, restaurants and other enterprises are able to enjoy energy savings (and by extension lower electricity charges) and SWH is also environmentally friendly. Use of SWH products can enhance tourism operators’ eligibility to gain environmental certification (including Green Globe certification<sup>45</sup>). That being said, the use of SWH technology will be discussed further in the case study on Barbados in this paper.



### *Financial services*

Small islands, such as those within the Caribbean archipelago are said to be especially vulnerable to climate change impacts.<sup>46</sup> Increased global temperatures are expected to, *inter alia*, increase the occurrence of natural disasters (such as hurricanes) and bring about sea-level rise, which by extension can “exacerbate inundation, storm surge, erosion and coastal hazards thereby threatening vital infrastructure, settlements and facilities that support the livelihood of island communities.”<sup>47</sup> The threat of damage to tourist attractions (especially beach-front hotels, villas and restaurants) therefore cannot be underestimated. Indeed, it is these threats that create the platform for the partnership between the tourism and the financial sectors, as this provides an opportunity for the latter to design an indemnification regime that is responsive to the risks associated with climate change. Unique insurance solutions that offer manageable premium payments and cater specifically for the tourism sector represent a niche market opportunity.

It is, however, important to note that there are insurance companies that offer Hotel and Resort Property Insurance,<sup>48</sup> which is specific to the tourism sector. Schemes of this nature tend to focus on offering coverage for natural disasters, such as hurricanes, as well as for fires and other unforeseen circumstances. As a result, such schemes often cater for physical damages to infrastructure, losses due to business interruption and other incidental costs. The damage due to Hurricane Ivan in 2004 amounted to approximately 200 percent of Grenada’s GDP and caused substantial losses in Jamaica and the Cayman Islands.<sup>49</sup> Should climate change impacts become more severe (and hurricanes become more intense and frequent), the need to build upon the already existing complementarities between the financial and tourism sectors to provide affordable and accessible insurance for hotels will become urgent.

In light of this, it is important to note that an indemnification scheme has been formulated for state entities in the region. The Caribbean Catastrophe Risk Insurance Facility (CCRIF), though still evolving in size and structure, was established through the coordinating assistance of the World Bank to provide participating governments from the Caribbean with immediate liquidity if hit by a hurricane or earthquake.<sup>50</sup> The Facility aims to afford members of CARICOM (thirteen [full] members and three associate members<sup>51</sup>) the opportunity to pool their resources allocated to risk management in order to reduce individual insurance premiums.

To add to this, in August 2009, CCRIF and the Caribbean Disaster Emergency Response Agency (CDERA) signed a memorandum of understanding (MOU) to “facilitate capacity building and to develop strategies for mitigating the physical and socio-economic impacts of natural disasters, such as hurricanes and earthquakes, on countries in the region.”<sup>52</sup> Essentially, the partnership between the two organizations is meant to “promote the use of catastrophe risk modelling tools, to introduce new products and initiatives to assist Caribbean governments in better understanding and financing catastrophe risk exposures and to share information on real-time hazard and impact information.”<sup>53</sup> Cooperation of this nature between a regional (though state-centred) insurance provider and its disaster management counterpart can indeed help to enhance long-term adaptation efforts by providing governments with the financial resources needed to respond to climate change impacts. The CCRIF (at the time of writing) is in the process of developing excess rainfall coverage,<sup>54</sup> perhaps to boost responses to weather formations, such as tropical depressions, that are associated with heavy showers and can have adverse effects, including inundation, but may not be covered by insurance for hurricanes.

## **2.5. Case Studies**

### **2.5.1. Caribbean Hotel Energy Efficiency Action (CHENACT)<sup>55</sup>**

CHENACT is a region-wide initiative aimed at improving the competitiveness of small and medium-sized hotels (which for the purposes of this initiative is any hotel with less than 400 rooms) in the Caribbean, by enhancing their use of available energy sources. The project is a collaborative effort of the Caribbean Hotel and Tourism Association (CHTA), the Caribbean Alliance for Sustainable Tourism (CAST) and the Caribbean Tourism Organization

(CTO) and is being funded by several international agencies along with the government of Barbados (where the project is based). This regional undertaking will cost approximately USD two million and will involve forty hotels across the Caribbean.<sup>56</sup>

The initiative will promote compliance with the Montreal Protocol (which has been acceded to by all of CARIFORUM<sup>57</sup>) to phase out ozone-depleting

substances. It will involve encouraging hoteliers to retrofit old, less environmentally friendly technologies with more modern forms of EGS. What is particularly distinct about this project, however, is that it will explore the possibility of the Caribbean region obtaining carbon credits through the Clean Development Mechanism (CDM), which was developed under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC). Through the CDM industrial nations that have made commitments to reduce their emissions of GHGs can support or invest in projects that reduce emissions in developing countries (as an alternative to more expensive emission reductions in their own countries). In addition, CHENACT will attempt to source funds from other donors, agencies and programmes to aid in the endeavour to reduce the emissions of GHGs from the Caribbean.

This project aims to facilitate a greater degree of energy efficiency on the part of hotels in the

Caribbean, particularly through the promotion of renewable energy and the removal of ODS. In addition, it will assess the current purchasing power of utility companies (primarily providers of electric power) to acquire energy from Independent Power Producers (IPPs) and examine the capacity of Caribbean Energy Service Companies (ESCOs) to adequately address the needs of the region's tourism sector. The CHENACT initiative is scheduled to run for up to two years and is expected to increase the tourism sector's use of renewable energy, reduce energy costs for hotels and decrease the emissions of GHGs and ODS, which should assist in making the region's already small carbon footprint even smaller. At the time this report was written the project was still in its preliminary stages. However, due to the potential of this project to decrease emissions and energy demand from the tourism sector, and also because of the regional scope of this initiative; the CHENACT project is likely to be the subject of future research in the Caribbean.

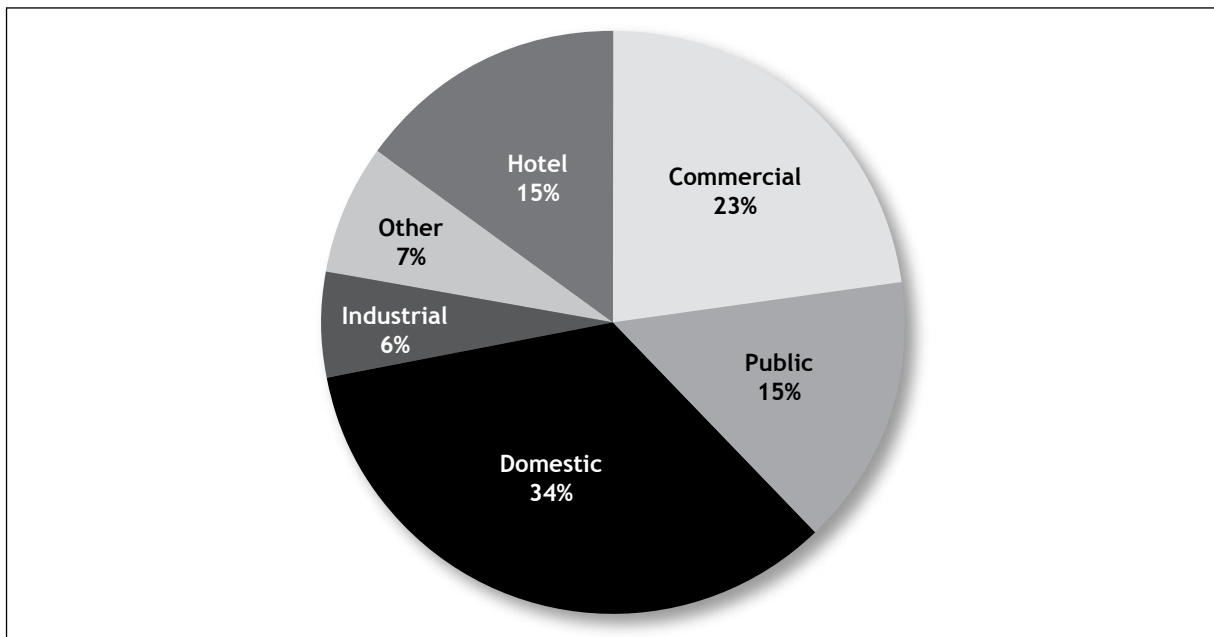
#### 2.5.2 Barbados: Competitiveness through energy efficiency – becoming a carbon neutral destination.

Barbados, an established tourist destination, is the most easterly state in the Caribbean. It is approximately 166 square miles (431 square kilometres) and has a population of roughly 272,000.<sup>58</sup> It is also home to the region's most active and largest SWH industry. Despite this, petroleum products service 75 percent of the nation's energy demand.<sup>59</sup> However, efforts are being made to increase the use of renewable energy in order to decrease Barbados's carbon footprint and, by extension, make the island more attractive to the environmentally conscious. By transforming Barbados into a carbon neutral location, visitors should be able to displace or nullify a percentage of the carbon footprint they might otherwise accrue via travelling to the Caribbean from well-known tourist markets (like Europe and the United States), which require long-haul (relatively carbon-expensive) flights. Promoting energy efficiency and renewable energy is, therefore, seen as an avenue for Barbados to become more competitive as a tourist destination. It is perhaps for this reason that the government offers SWH retailers "a preferential import regime and tax holidays and [also] gives local SWH manufacturers special rates for almost all materials that are used in the construction and repair of SWH systems."<sup>60</sup> For nationals wishing to acquire SWH, "the government offers a 100 percent rebate on the cost of the systems on their national income taxes."<sup>61</sup> As a result, in 2004, there were already "over 36,000 solar water heaters operating in the island."<sup>62</sup> Solar photovoltaic systems

are also being used for tourist attractions (such as the Harrison's Cave) and for public goods as in the case of the Combermere School.<sup>63</sup> The government also launched a Public Sector Energy Conservation Programme in April 2007 focussed on fleet management, procurement, retrofitting, training and capacity building and has increased its environmental levy from one to two percent. The additional funds retrieved from the levy are to be put toward environmental management.<sup>64</sup>

To add to this, further incentives are available for tourism operators under the TDA. Under the Act, hotels can import duty free computer-controlled systems to regulate energy use and save energy as well as electronic equipment to increase the safety, security and energy conservation of guest rooms and entire hotel properties.<sup>65</sup> Simultaneously, restaurants can import "electronic equipment to increase the safety, security and energy conservation of the rooms and the entire restaurant property"<sup>66</sup>. However, it is important to note that restaurants can import such items duty-free only once every five years. Interestingly, the Act does not make similar exemptions for energy conservation appliances for villas. Notwithstanding this, it is perhaps due to such incentives that most hotels in Barbados already use SWH systems.<sup>67</sup> It should be noted that despite the fact that many hotels are equipped with SWH, hotels use fifteen percent of the electricity generated in Barbados from petroleum (see Figure 5).

Figure 9. Sectoral use of Electricity in Barbados in 2004



Source: Ministry of Energy, Barbados, 2006.

The continued promotion of alternative energy (including solar for lighting) is therefore key to reducing the sector's energy demand. To add to this, in 2004 more than 60 percent of homes still lacked SWH units. This is said to be linked to the approximately fourteen percent of the population that lives in poverty.<sup>68</sup> Milton postulates that;

*Even with the generous government pro-SWH policies, buyers must still make an average up-front payment of [USD] 1,800 to purchase a system, which they will only recoup in the form of tax savings. However, because of the subsidy is linked to income taxes, households that do not earn enough to file income taxes are unable to take advantage of the government subsidy.*

Thus, in its move toward 'carbon neutral' sta-

tus, the government of Barbados must now find further innovative policy paths towards decreasing its reliance on conventional forms of energy. In spite of the preferential import regime that exists for SWH manufacturers and the range of fiscal incentives that exist to increase the use of energy-conserving technologies, finding means to decrease the energy demand of domestic households and hotels in particular is imperative. This may require increased public-private sector partnerships to facilitate investment in other forms of alternative energy (such as solar photovoltaic and wind energy) along with technology transfers from industrial nations. It is multidimensional, collaborative approaches of this nature that can serve to strengthen Barbados's already strong thrust to become a 'carbon neutral', energy efficient, tourist destination.

### 3. IMPACT OF MITIGATION POLICIES AND STRATEGIC RESPONSES

#### *Climate Change Mitigation and the Tourism Sector*

Climate change mitigation as defined by the IPCC (2007) refers to “technological, economic and social changes and substitutions that lead to emission reductions.”<sup>69</sup> The tourism sector contribution to global emissions tends to emanate from, *inter alia*, travel/transport to tourist destinations, from accommodation venues and from tourist activities. To reduce the negative impact on the environment, public and private sector entities usually attempt to increase the use of environmentally-friendly goods and services within the sector and to bring about behavioural changes among proprietors and tourists alike. Initiatives like CHENACT and the aforementioned incentives available via the TDA (for tourism service providers to acquire energy-conserving technologies) provide practical examples of climate change mitigation strategies utilised by the private and public sectors to decrease emissions. In addition, environmental levies are sometimes introduced or increased, as in the case of Barbados, usually to allow governments to collect funds necessary for climate change mitigation (and adaptation). The impact of such policies on other nations is the subject of the section that follows.

#### *Financing Climate Change Mitigation*

As explained previously with respect to the TDA, tourism service providers are able to acquire on a duty free basis energy-conserving technologies that help to decrease energy demand (and by extension, harmful emissions) from the sector. However, in seeking to develop effective mitigation strategies for the tourism sector, it is important to acknowledge that the inability of some service providers to finance ‘climate friendly’ technologies does, at times, create a barrier to access throughout the region. Even after tax incentives are applied, the cost of such technologies may be prohibitive, particularly for small- and medium-sized enterprises (SMEs). The willingness of financial institutions to loan money for the purchase of energy-conserving goods (especially when less environmentally friendly, less expensive alternatives are available) is therefore critical.

In this respect, programmes like the United Nations Environment Programme-Finance Initiative (UNEP-FI) are vital in order to increase awareness within the financial sector of its role in facilitating access to environmentally-friendly goods and services. The UNEP-FI is not a lending facility.

Environmentally-friendly technologies quite often help to decrease the release of CO<sub>2</sub> emissions into the atmosphere and also reduce dependence on conventional forms of energy. Nevertheless, such technologies tend to be attractive to the private sector primarily owing to the energy savings (particularly those that translate into lower electricity costs) that can be enjoyed in the short- and long-term by utilizing energy-conserving appliances. Thus, even if there are fiscal and other incentives that promote the use of environmentally-friendly goods and services (such as those available via the aforementioned TDA) the response from the private sector is unlikely to be overwhelmingly positive if the use of such technologies does not result in savings and reduced operating costs. In this regard, and particularly in the midst of a global economic downturn, the tourism sector is no different. Unless the application of mitigation technologies is likely to result in reduced costs; hoteliers, service providers and other stakeholders are unlikely to avail themselves of environmentally friendly technologies, even if such goods are liberalized and fiscal incentives are obtainable.

Rather, it is akin to a guild of financial institutions that seek to promote environmental awareness in the financial sector by, *inter alia*, promoting “best practices in environmental management, including energy efficiency, recycling and waste reduction.”<sup>70</sup> The initiative is also meant to encourage the development of products and services within the financial sector that promote environmental protection.<sup>71</sup> There is potential, however, for this programme to be integrated with efforts associated with the UNEP Green Economy initiative which is geared towards assisting governments to develop policies and mechanisms which encourage environmentally-sustainable investment in all sectors of the economy.<sup>72</sup>

That said, initiatives like the UNEP-FI, have the potential to enhance access to funds for tourism service providers to purchase energy-conserving goods by encouraging the development of innovative products and services and by raising awareness among financial institutions of the need to support investments that can decrease emissions. There is much room, however, for the expansion of such awareness-raising activities within the Caribbean. In practice, the ability of tourism ser-

vice operators to acquire mitigation and adaptation technologies may be curtailed, not by their ability to identify the necessary technology or by

prohibitive tariffs on such products, but by the willingness of lending institutions to finance such technologies.

### *The Importance of Public Education*

However, making energy conserving technologies more accessible will not guarantee decreases in emissions or energy demand from the tourism sector. Government incentives to facilitate and encourage the acquisition of ‘climate-friendly’ goods and services are unlikely to significantly reduce emissions from the tourism sector without substantial public education aimed at bringing about behavioural changes with respect to energy use. Energy efficient technology in and of itself will not decrease energy demand, if such technologies are utilised in an inefficient manner. Moreover, if increased energy efficiency results

in decreased costs for consumers, people may simply consume more of the good or service in question. For example, if cars become more fuel efficient, people may drive further or more often and consume more energy (than if their cars were less fuel efficient). This process, which is referred to as the ‘rebound effect’<sup>73</sup> illustrates why tourists, proprietors within the sector and the public at large need to be engaged and informed of the importance of decreasing their carbon footprint. Without such consultation, behavioural change is unlikely to occur and the sector’s energy demand may remain stagnant or even increase.

### **3.1 Potential Impacts of Mitigation Policies on the Tourism Sector in the Caribbean**

As a global phenomenon, climate change requires a multilateral response. Policy measures that promote reduction of emissions from industrial nations, which constitute the largest contributors of greenhouse gases to the atmosphere, are therefore critical. It is important to note, however, that policies designed to mitigate climate change impacts can have external effects on other countries. For example, increased environmental levies from goods produced in developed nations may increase the cost of purchasing such goods in other countries. The effect of mitigation policies is particularly important for developing economies as such taxes and duties can dramatically increase their import bill or stifle the growth of trade in goods and services. More specifically, “national or international mitigation policies – that is policies that seek to reduce GHG emissions – are likely to have an impact on tourist flows. They will lead to an increase in transport costs and may foster environmental attitudes that lead tourists to change their travel patterns (e.g., shift transport mode or destination choices).”<sup>74</sup> In this regard, the adverse impact that the Air Passenger Duty (APD), administered by the UK government, could have on the tourism sector in the Caribbean is a particular cause for concern.

The tax has been disaggregated into four tiers, known as ‘bands’, which are meant to take in account the distance travelled in addition to the class of travel. Each band represents a distance of 2000 miles, and duties increase in line with the distance of the final destination from London.

The APD is essentially a carbon tax that is meant to act as a toll for travellers (and thereby their emissions) based on the length of their journey. However, the bands for various destinations are determined based on the capital city of the country in question and not by the specific port of entry. It is this approach that is particularly disadvantageous to the Caribbean region, as the duty charged for destinations in the United States, like Hawaii, California and Florida all are calculated based on the distance between London and Washington DC. As a result, tickets for destinations like Hawaii, which are actually further from London than the Caribbean, are charged less duty than tickets for locations in the Caribbean.

The APD was introduced in 1994 as an environmental levy on air travel. In its original incarnation, it entailed “a flat rate tax on all passengers departing from UK airports at varying levels depending on the class of travel.”<sup>75</sup> However, the UK government has unveiled plans to reform the APD based on the distance of destinations from London.

Under the APD scheme (see Table 1 below), Caribbean destinations fall into ‘Band C’ and therefore attract higher tariffs than their US counterparts which are covered by ‘Band B’. In practice “this will mean that a tourist travelling in economy will pay twenty five percent more [USD 72] from 1 November 2009 and 87 percent more from 1 November 2010.”<sup>76</sup> Tariffs are higher (sometimes even doubled) for travellers in premium classes. This will, by extension, make a Caribbean vacation even more expensive for families travelling from London, as a family of four will

have to pay GBP 300 (USD 495), from November 2010, in APD alone, in addition to the price of an economy ticket to cross the Atlantic. The APD scheme not only makes travel to the Caribbean somewhat prohibitively expensive but also places the region at a significant competitive disadvantage compared with other regions. The duty in its current form can act as an incentive for British tourists to travel to less expensive destina-

tions, including those within Europe (which falls into 'Band A') or even those within the United States (which falls into 'Band B'). This measure therefore, as postulated by Jessop, "is particularly damaging to the region in economic terms at a time of dramatically falling visitor arrivals as a result of the global recession; especially as the UK is the leading tourist market for many Caribbean nations."<sup>77</sup>

**Table 2. UK Air Passenger Duty 2009-2011**

*Air Passenger Duty from Nov. 2009 (in USD)*

BAND (SHOWING APPROX. DISTANCE IN MILES FROM LONDON)	IN THE LOWEST CLASS OF TRAVEL (REDUCED RATE)		IN OTHER THAN THE LOWEST CLASS OF TRAVEL* (STANDARD RATE)	
	2009-10	2010-11	2009-10	2010-11
Band A (0-2000)	\$18	\$19	\$36	\$39
Band B (2001-4000)	\$74	\$99	\$148	\$198
Band C (4001-6000)	\$82	\$124	\$164	\$247
Band D (over 6000)	\$91	\$140	\$181	\$280

Source: Caribbean Tourism Organization<sup>78</sup>

*\*(However if only one class of travel is available and that class provides for seating in excess of 40" the standard (rather than the reduced rate of APD applies).*

### 3.2 Strategic Response to Threat Posed by the APD

The response from the Caribbean to the proposed APD has been diverse, as institutions and government representatives from the region have been engaged in lobbying the UK government to change the structure of the tax. In a statement to members of the UK parliament, the CTO Secretary General indicated that the APD "will erode the competitiveness of the Caribbean"<sup>79</sup> due to the fact that it is likely to have a negative effect on the price of airline tickets to the region. The CTO has gone even further, however, by issuing an official call for members of the Caribbean diaspora in the UK to contact their local parliamentary representatives and start petitions to protest the tax. Governments from the Caribbean also took action, as the Prime Ministers of Jamaica (along with the Minister responsible for tourism) and Barbados visited the United Kingdom to make direct representation to British officials on the issue. The overall campaign went beyond this however, and included

*letters from Caribbean Heads of Government... a high profile national media and lobbying campaign led by the Caribbean Tourism Organization with the support of the Caribbean Hotel and Tourism Associa-*

*tion [along with] representations from all of the Caribbean's diplomatic representatives [in Britain] including Cuba and the Dominican Republic.<sup>80</sup>*

The focus of advocacy efforts thus far has been on reform, rather than attempting to have the APD repealed, as Caribbean leaders have called for a greater degree of equity in terms of the definition and application of the categorization or 'band' system.<sup>81</sup> CTO representatives also met with industry officials in the United Kingdom to help garner support for their position and to develop strategic alliances through which they would be able to lobby for reform of the tax.

In addition, it is equally imperative to acknowledge that the approach adopted and linkages formed through lobbying activities did help to internationalize calls for reform of the APD as a mitigation policy. The head of the WTTC, Jean-Claude Baumgarten lamented that the UK "government's decision to increase the Air Passenger Duty (APD) for departures from UK airports... shows that it continues to underestimate the economic importance of travel and tourism."<sup>82</sup> It has been made clear that the WTTC is of the view

that the tax, in its entirety, is likely to stifle demand for international travel and should as such be abolished. However, Baumgarten has stated publicly that his organization does support “the [UK] government’s decision to review the level of duty proposed for air travel to the Caribbean... since this is particularly unfair.”<sup>83</sup>

Even further, the WTTC has indicated that the tax is likely to be ineffective as an environmental initiative to decrease emissions from aircraft, since travellers may choose to fly from London via another European nation (such as Belgium or the Netherlands ) where such levies do not exist, in order to make long-haul journeys across the Atlantic or Pacific oceans. In such cases, the APD would have the reverse effect of increasing emissions, since persons would in fact be travelling longer distances in total to avoid the extra charges to their airfare. Additional advocacy against the increase of the APD has come from industry representatives and civil society organizations as well as members of the private sector who are concerned about the potential impacts of the policy and who question the efficacy of and need for the increased tax.<sup>84</sup>

Nevertheless, the mobilization and partnership of the public and private sector to respond to the APD is an example of the practical steps taken to negotiate and engage other governments at the international level when proposed mitigation policies can have adverse trade effects. The approach adopted by the CTO and Caribbean government officials was far-reaching and included direct diplomatic visits, petitions from Caribbean diaspora as well as a sustained media campaign

in the United Kingdom. As asserted by Jessop, “the Caribbean dominated parts of the APD debate and was able to force its issue to be recognized, indicating that the Caribbean can cause its specific concerns to be taken notice of in a distinct way.”<sup>85</sup> It is this unified resilience that can be transferred to other international trade or climate change fora should proposed mitigation policies threaten the viability or competitiveness of Caribbean tourism. The region’s efforts were not entirely futile, as the UK government did agree to review the APD, and pay specific attention to the issues raised by Caribbean leaders and representatives. However, on 1 November 2009, the APD was implemented without any of the significant modifications requested by the Caribbean Community.

That said, in assessing the region’s response to the APD, it would be remiss to ignore the absence of a more technical response to the UK scheme. One could argue that a certain degree of technical cooperation was lacking in the development and promotion of a Caribbean alternative to the UK APD, one that afforded the UK government the ability to accrue revenue (that could then possibly be used to support mitigation and adaptation efforts) without adversely affecting demand for Caribbean vacations. As a result, too great a proportion of the region’s response may have been based on a political and diplomatic process aimed at having the scheme reformed or repealed. Should a similar scenario emerge in the future, more resources should perhaps be directed toward developing and promoting an alternative that is beneficial both to the environment and to the Caribbean tourism sector.

## 4. TRADE POLICY AND TOURISM

### 4.1 The Role of Trade-related Measures in Promoting Adaptation to Climate Change in the Tourism Sector in the Caribbean

#### *Contextualizing trade in environmentally-friendly goods*

It is essential to have a clear understanding of the role of trade policy in building a resilient and more competitive tourism sector in the Caribbean. Increased energy efficiency can reduce costs and help to make the sector more attractive to environmentally-conscious travellers. In addition, augmented usage of energy-conserving technologies not only strengthens efforts to promote the region as a carbon neutral zone, it also helps to develop the enabling environment necessary to boost adaptation to climate change. Reduced or eliminated-tariffs can help to reduce the cost of environmentally-friendly goods and improve access to mitigation and adaptation technologies.

Therefore, paragraph 31 (iii) of the WTO Doha Ministerial Declaration makes a specific call for negotiations on “the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services.”<sup>86</sup> There is, however, no internationally accepted definition for the term ‘environmental goods’ (EGs) and one is not included in the above-mentioned declaration. Hence, whichever items nations choose to be covered by this term is left to the discretion of individual governments. There have nonetheless been several attempts to define, or at the very least categorize, the nature of such goods. The greatest problem in arriving at agreed definitions lies in the fact that many products can be used for more than one purpose.<sup>87</sup> Thus, while a glass mirror may be used to generate solar energy (as part of a solar concentration system—which is preferable to other forms of energy generation, because it does not produce harmful emissions) it can also be used for cosmetic and other non-environmental purposes.

In addition, the overall benefit of a product to the environment is relative when compared with similar goods.<sup>88</sup> In explaining this dynamic, M. Sugathan outlined the importance of these issues and how they have weighed heavily on international trade negotiations at the WTO geared toward reducing tariffs on EGs internationally in an accelerated manner. There have been proposals that goods should be liberalized based on their end use in specific environmental projects (*a project approach*) or based on requests made by other nations for the liberalization of specific products

of interest to them (referred as the *request offer approach*).<sup>89</sup> A number of chiefly OECD nations, however, are in support of using a *list-approach*. This essentially allows a country, or a group of countries (as is in this case) to identify and submit lists to the WTO of what they “regard as environmental goods of interest for accelerated and permanent liberalization by reducing or eliminating bound tariffs.”<sup>90</sup> The grouping known as ‘Friends of Environmental Goods,’ has advanced a list of goods that it proposes should be considered as EGs and considered for accelerated and permanent liberalization.

Even before the Doha Round of negotiations, the Asia-Pacific Economic Cooperation (APEC) had produced a list of its own, as part of its ‘Early Voluntary Sector Liberalization’ (EVSL) initiative on environmental goods. The OECD also came up with an illustrative list, developed for research and analysis rather than for negotiating purposes. Altogether, the two lists have “233 entries identified with an HS code, covering 198 goods,”<sup>91</sup> but when combined, less than thirty percent of the proposed environmental goods are common to both lists.<sup>92</sup> This is illustrative of how different perceptions may be constructed concerning what constitutes an environmental good. It also shows why reaching agreement in international trade negotiations on how and which goods to liberalize is indeed a difficult task. Regional Trade Agreements (RTAs) do present one avenue through which such hurdles can be circumvented mainly because the ambition for RTAs is to liberalize trade in ‘substantially all’<sup>93</sup> goods irrespective of their end uses.

In this regard, the Economic Partnership Agreement (EPA) between the Caribbean Forum of African, Caribbean and Pacific States (CARIFORUM<sup>94</sup>) and the European Union (EU), rather than international negotiations, may have been the most prudent and convenient path to the liberalization of EGs for the Caribbean to have taken. In seeking to increase access to goods and services that can help the tourism sector decrease its emissions and prepare for climate change impacts, RTAs provide an opportunity to tailor one’s trade regime to suit the needs of local industries. One example of how this was attempted via the CARIFORUM-EU EPA will be showcased later in this paper.



*Using trade policies to increase access to climate-friendly goods and services*

Essentially, removing or reducing tariffs and other barriers on EGS can help to foster the growth of locally produced climate-friendly technologies (as inputs necessary for manufacturing may become more accessible and affordable). On the other hand, it should be noted that lowering import duties can serve to attract a level of external competition that may harm local production. It may, therefore, be appropriate to exclude certain items from liberalization or to gradually lower tariffs on specific products so that local manufacturers have a greater length of time to grow and become competitive. Conversely, particularly long exclusion or protection (via high tariffs for example) can also be harmful to the region's economies as this may promote the existence of local monopolies and may remove the incentive for local manufacturers to become globally competitive. In addition, protectionist policies can incubate poor-quality technologies or products for an extended period (until competitors are afforded the opportunity to supply superior alternatives). That said, it should be noted that trade policy should also be complemented by policies aimed at building the capacity of local producers. This includes human resource development initiatives such as training programmes and scholarships in order to boost the acquisition of skills and expertise in applying and maintaining energy-conserving and adaptation technologies. Financial injections through industrial development corporations may also be necessary along with efforts to facilitate technology transfers from developed nations.

Partnerships between local manufacturers of energy-conserving technologies, the tourism sector and state agencies are critical, as they can help to craft a liberalization regime that facilitates easier importation of inputs necessary to manufacture climate-friendly technologies (such as SWH— in the case of Barbados) domestically. A trade regime that promotes local production of such technologies not only helps to support activities like CHENACT (where the tourism sector actively seeks to enhance the usage of environmentally-friendly goods within the sector), it also increases the accessibility of EGS to other sectors in the economy. It can also act as a platform for the development, growth and integration of SMEs engaged in the diffusion of appliances of this nature. In this regard, boosting local production may create new avenues for employment and enhance the export potential of such goods and services. This is of particular economic interest, as niche market opportunities may indeed be

available internationally. According to a recent study conducted by the World Trade Organization (WTO) and the United Nations Environment Programme (UNEP):

*the trade of climate-friendly goods has seen a considerable increase in the past few years. . . . between 1997 and 2007 exports of goods contained in the product lines listed in the renewable energy category grew by 598 percent in developing countries and by 179 percent in developed countries, representing 62 percent and 29 percent of annual average growth respectively.*<sup>95</sup>

Notwithstanding this, the acquisition and diffusion of EGS is influenced by factors other than border tariffs, including the political will to promote energy conservation, the existing regulatory framework (for such products) as well as fiscal and other incentives available to households and companies that desire to utilize adaptation technologies. As mentioned earlier, in the case of Barbados, fiscal incentives were made available to households and members of the private sector that wanted to acquire SWHs. Similarly, in order to enhance the use of climate-friendly technologies across the Caribbean (and particularly in the tourism sector), policy instruments must go beyond trade regulations. It is crucial that a strategic industrial policy that addresses investment, innovation and intellectual property be deployed to boost local capacity to acquire EGS and to support production where possible. This may be accomplished by, *inter alia*, making venture capital available to support the growth of SMEs, the development of innovation grants and perhaps even through offering tax holidays and rebates for firms that integrate mitigation and adaptation technologies into their existing infrastructure and plans for operational expansion.

It is also important to highlight that the opportunities trade policy can create for technology transfer are critical to improving access for developing countries that may not possess the purchasing power to acquire energy conserving technologies. This is particularly the case for Haiti, (and perhaps for other LDCs within CARICOM, although to a lesser extent) the only member of CARICOM recognised as a least developed country by the World Bank. Poverty is widespread, and with a gross national income (GNI) per capita of USD 560, living standards are quite low. In this regard, approximately 54 percent of Haitians live on less than USD 1 a day and 78 percent on less than

USD 2 a day.<sup>96</sup> As indicated by the World Bank, “Haiti requires strong support from its international partners for relief, recovery, and rebuilding—and to safeguard the considerable progress made since 2004, when the country was swept by a wave of political conflict.”<sup>97</sup> Technology transfers, an attractive foreign direct investment (FDI) regime, fiscal and other incentives along with

other forms international development cooperation may truly aid efforts to enhance purchasing power, stimulate economic activity, and help to inject financial investment into Haiti’s fledging tourism sector. Such an approach may also be the one of the few viable means of improving the diffusion of environmentally friendly technologies into Haiti.

## 4.2 Use of Regional Trade Agreements (RTAs) to Increase Trade in EGS

RTAs can be used to craft or design a unique trading environment to support or enhance the exchange or transfer of energy-conserving goods or services. It is through such arrangements that selected trading partners can create a legally binding framework and can mould specific criteria to boost trade in EGS. Trade agreements also serve to facilitate negotiations on standards, non-tariff barriers, intellectual property rights, technology transfers and dispute settlement procedures. The provisions of the General Agreement on Tariffs and Trade (GATT) facilitate the formation of RTAs in order to foster the proliferation of trade between the parties of such an agreement. In this regard, Article XXIV of the GATT caters to the formation of trade agreements provided that ‘substantially all’ duties and other restrictive regulations of commerce are eliminated.<sup>98</sup> In addition, all duties and other regulations of commerce implemented via the formation of an RTA must not be higher or

more restrictive than they were prior to the institution of the agreement.<sup>99</sup> Simply put, RTAs should strive to remove all internal barriers to trade and should not make trade more difficult for countries that are not parties to the agreement. Therefore, in seeking to boost trade in EGS, RTAs can serve to remove internal barriers to trade that may have existed prior to the agreement. In addition, a regional approach to trade negotiations may be more conducive to discussing specific subjects like the environment. In sum, regional negotiations, between parties to a trade agreement may be a preferred, since RTAs are meant to liberalize all or most goods (regardless of their end-use). Furthermore, fora of this nature tend to be substantially smaller than international trade negotiations, making it easier to arrive at a consensus on the pace of liberalization (accelerated or gradual) for specific types of goods (such as environmental goods, for example).

### 4.2.1 A closer look at the CARIFORUM-EU Economic Partnership Agreement (EPA)

It is perhaps for this reason that parties to the recently signed CARIFORUM-EU EPA chose to tackle the issue of the environment within this forum. Via the EPA, all CARIFORUM goods which meet the Rules of Origin criteria, (with the exception of arms and ammunition, sugar and rice) will have duty free quota free (DFQF) access to the European market. As it pertains to trade in services, the EU has committed to “liberalize approximately 90 [percent] of their services sector. The More Developed Countries (MDCs) within CARICOM and the Dominican Republic have promised to liberalize at least 75 percent of their services sector while the Lesser Developed Countries (LDCs) within CARICOM have vowed to liberalize at least 65 [percent] of their services sector”<sup>100</sup>. As a comprehensive liberalization regime, the EPA therefore provides an avenue to increase trade in EGS. In this regard, Article 183 of the EPA affirms:

“The Parties and the Signatory CARIFORUM States are resolved to make efforts to facilitate trade in goods and services which the Parties consider to

be beneficial to the environment. Such products may include environmental technologies, renewable and energy-efficient products and services and eco-labelled goods.”<sup>101</sup>

The agreement goes further, adding that parties will aim to create an enabling environment for the transfer of technology, particularly through the use of incentives to afford CARIFORUM states the opportunity to establish a viable technological base.<sup>102</sup> The EPA also obliges parties to take measures to ensure that attempts are not made to attract international investment by lowering environmental (or labour) standards.<sup>103</sup> More specifically, as it relates to the tourism sector, Article 116 encourages compliance with environmental and quality standards applicable to tourism services without creating barriers to trade. Furthermore, in tandem with its provisions on development cooperation, the EPA also endeavours to support “capacity building for environmental management in tourism areas at the regional and local level”.<sup>104</sup> Under the agreement, parties

also committed to support the “promotion and facilitation of public awareness and education programmes in respect of environmental goods and services in order to foster trade in such products between the Parties.”<sup>105</sup> Thus, the afore-

mentioned provisions within the EPA along with the actual schedules for liberalization contained within the agreement can help to boost trade in and local production of mitigation and adaptation technologies within the Caribbean.

#### *Trade in environmental goods: The case of Solar Water Heaters*

Akin to negotiations at the level of the WTO, the EPA contains no definition of the term ‘environmental goods’. However, using the harmonised liberalization schedule of the agreement, it is possible to demonstrate how trade measures can be used to support the local production of energy-conserving technologies. Toward that end, this paper will look briefly at the treatment of Solar Water Heaters (SWHs) and related inputs under the CARIFORUM-EU EPA.

Barbados is home to a relatively small but mature SWH industry and is the largest exporter of SWH units within CARICOM.<sup>106</sup> In congruence with the preferential import regime offered by government to local SWH manufacturers, an overwhelming majority of the inputs necessary for production were scheduled for duty-free access into Barbados under the EPA, even in cases where CARIFORUM as a group had chosen to reduce their harmonized tariff rates gradually. For example, via the agreement, glass mirrors (*which are listed under HS Code 900290*) have been scheduled by CARIFORUM to be liberalized gradually, only to be

imported duty-free from January 2013. However, as this product is used for solar concentration systems, Barbados has scheduled an exception to the harmonized tariff by allowing immediate duty-free access into its market. Trade measures such as these can help boost local manufacture of climate-friendly technologies, like solar water heaters. Conversely, it is worthwhile to note that the product code covering the SWHs (listed under *HS Code 841919*) have been altogether excluded from liberalization throughout CARIFORUM (save the Dominican Republic and Haiti) and are thereby shielded from external competition. Thus, one could assert that the EPA seeks to support domestic production (by making inputs duty-free) while safeguarding the regional market for SWHs from larger producers in the European market. One criticism of this approach, however, (as alluded to earlier in this paper), is that complete exclusion of SWHs from liberalization for an indefinite period could reduce or remove the incentive for current manufacturers to invest in research and development in to order eventually become globally competitive.

#### *Trade in environmental services*

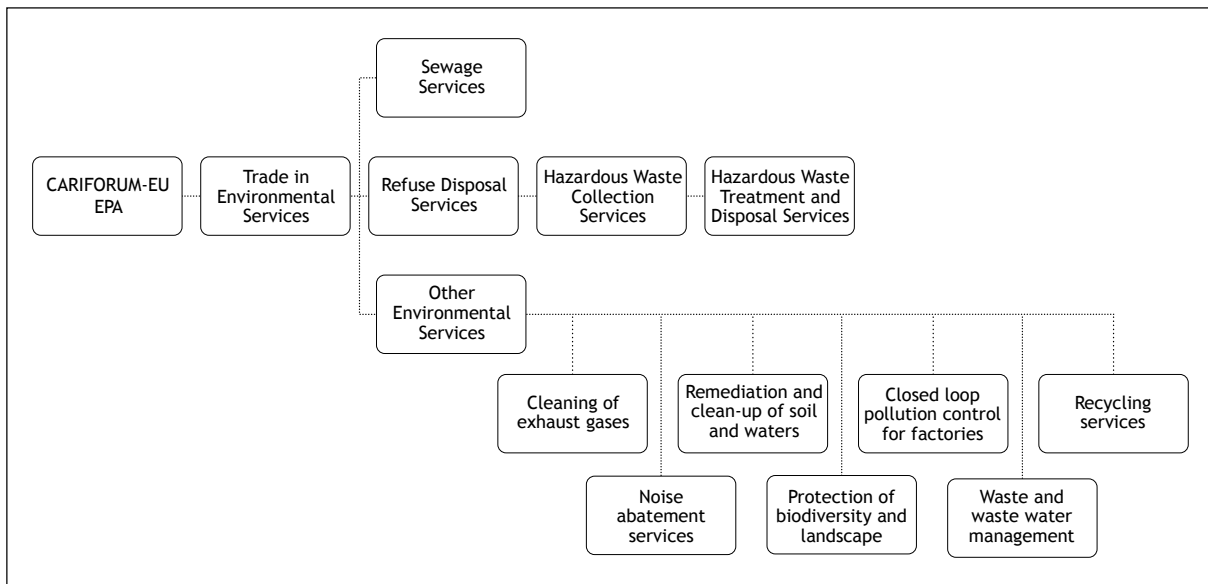
As it pertains to the provisions on trade in services, the EPA also contains commitments that deal exclusively with trade in environmental services. Within the schedules of the agreement, commitments have been made to liberalize trade in sewage services, refuse disposal services (including hazardous waste collection, treatment and disposal services) and a category referred to as ‘other environmental services,’ which ranges from cleaning of exhaust gases to recycling services (see Figure 6).

As mentioned previously, RTAs like the CARIFORUM-EU EPA afford parties to such agreements the opportunity to craft a trading regime tailored to their specific national and regional objectives. In this regard, the EPA is no different. Parties to the agreement have been able to base their commitments on local development needs and as such have been able to set conditions for entry into their respective markets that can help to build local capacity. For example, a European investor wishing to establish commercial presence in the

Caribbean to supply hazardous waste treatment services via the EPA would face different conditionalities in different territories. The investor would be required to commit to technology transfer in Belize and Suriname and to operate as a joint venture with a local company in Trinidad and Tobago.<sup>107</sup> Requirements of this nature are often inserted as a practical means to facilitate the transfer of knowledge, technology and skills in order to develop local capacity to supply such services at an international standard.

In this regard it may be useful to highlight that some of the scheduled services (seen above in Figure 6) may be particularly useful in adapting to climate change. For example, remediation and clean-up of soil and waters may be increasingly necessary should natural disasters become more severe, especially as such events may lead to flash flooding and mass movement of soil (including landslides). In addition, services that protect biodiversity and the landscape are like-

Figure 10. Liberalized Environmental Services under the CARIFORUM-EU EPA



ly to become increasingly necessary as climate change impacts become more intense. Loss of biodiversity can have not only adverse consequences for the natural environment, but also negative repercussions on tourism in the region. For example, sea-level rise along with beach and coastal erosion can result in the loss of sea turtle habitats, which constitute an essential tourist

attraction in some Caribbean destinations (like Trinidad and Tobago). Liberalizing environmental services (inclusive of necessary conditionalities that can help to build local capacity) can therefore enhance efforts to preserve biodiversity in the long-term, and may help to strengthen the tourism sector's resilience in the face of climate change impacts.

### 4.3 Multilateral Environmental Agreements: The Prescribed Alternative

While RTAs may be a useful platform to promote the utilization of EGS, efforts in the Caribbean to adapt and respond to the threat of climate change can also be aided through the negotiation and institution of multilateral environmental agreements (MEAs). Such agreements help to build international consensus and can decrease the likelihood of nations taking unilateral measures to combat climate change, which can have adverse external effects on other countries. Thus, in lieu of adopting strong trade measures

such as import restrictions to halt the inflow of environmentally-harmful goods into a particular country, policy makers can seek to establish widespread consensus on phasing-out harmful products and technologies (*as was done in the case of the Montreal Protocol to the Vienna Convention for the Protection of the Ozone Layer*). International agreements can also serve (and are often used) to safeguard the interests of specific elements of the natural environment or sectors of the economy.

#### 4.3.1 The UNFCCC: The climate change MEA

As it pertains to the threat that increasing CO<sub>2</sub> emissions pose to the global environment, the UNFCCC aims to stabilize "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."<sup>108</sup> In so doing, the convention lays the basic foundation not for the reversal, but for the stabilisation of GHGs over a prolonged period and in this case, a number of decades. The treaty aims to do this through the commitment of each signatory to "adopt national

policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs."<sup>109</sup> The convention also creates a reporting mechanism, under which parties to the treaty, developed and developing, communicate measures they have adopted to reduce GHG emissions from within their borders. In addition, the UNFCCC requires signatory states, *inter alia*; to maintain inventories of anthropogenic emis-

sions and to “formulate, implement, publish and regularly update national and where appropriate, regional programmes containing measures to mitigate climate change.”<sup>110</sup> Article 4 (1), paragraph (c) seeks to promote the “development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases.”<sup>111</sup>

In seeking to achieve these objectives, the treaty asserts that nations have a common but differentiated responsibility (based on different levels of development) to abate the effects of climate change. More specifically, Article 4(2) paragraph (a) of the UNFCCC makes it clear that developed nations should take the lead in mitigating climate change impacts by reducing their emissions. Even further, the treaty explicitly indicates that “the extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention.”<sup>112</sup> Thus, while the legal framework does aim to facilitate global action to mitigate climate change (including the mobilization of resources necessary to so do), it is clear that developed nations are meant to lead such efforts.

The treaty is particularly useful in building a common understanding of what is meant by the term ‘climate change’. For the purposes of the Convention it is defined as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to

natural climate variability observed over comparable time periods.”<sup>113</sup> Consensus on the nature of a problem is often invaluable in international negotiations when seeking to find mutually beneficial solutions.

The Kyoto Protocol to the UNFCCC is an optional Protocol to the treaty that affords its signatories the opportunity to make specific commitments to reduce their emissions of GHGs by a specific time. The Protocol broke new ground in international climate policy by establishing quantitative emission restrictions for industrial countries (listed in Annex B of the Protocol). This is attempted primarily through Article 3 (1) which seeks to ensure that emissions of greenhouse gases (listed in Annex A of the Protocol) from industrial countries are reduced to at least five percent below 1990 levels between 2008 and 2012. Once again, in congruence with the principle of common but differentiated responsibilities, developed countries are meant to take the lead in mitigating climate change and as such, the Kyoto Protocol does not require developing countries to make any binding commitments to reduce harmful emissions.

In sum, the UNFCCC, along with the Kyoto Protocol helps to build solidarity and consensus as it pertains to the nature of the threat of climate change. The treaty does provide a general framework within which international efforts to mitigate and abate the effects of climate change can take place. More importantly, the agreements, (the Kyoto Protocol in particular in this regard) represent a crucial step toward international, concerted action to stabilize emissions of GHGs in order to slow or halt global climate change.

#### 4.3.2 Limitations and shortcomings of the UNFCCC (including the Kyoto Protocol)

While consensus-building may be one of the greatest assets of utilizing MEAs to address environmental problems like climate change, it may also be one of the most notable weaknesses of such an approach. In order to gain widespread support for the provisions contained therein, multilateral agreements (environmental or otherwise) are often marked by a lack of strong, legally binding obligations due to divergent domestic interests or concerns and polarized perspectives on the nature of the problem faced as well as the solutions needed to address it. The UNFCCC is no different. Birnie, Boyle and Redgwell, referring to the UNFCCC state that the agreement was “negotiated by consensus and intended to attract universal participation, [and that] the Climate Change Convention reflects deep differences of opinion among the participating states as to the

measures needed and the allocation of responsibility for addressing the problem.”<sup>114</sup> Thus, while the UNFCCC goes some way toward establishing that climate change is a global problem worthy of an international response, it is less clear on its prescription of exactly how the problem should be solved.

Even though the treaty does establish the principle of ‘common but differentiated responsibilities,’ it stops short of assigning specific and sole responsibility to any country or group of countries for decreasing global GHG emissions. As mentioned earlier, the UNFCCC and the Kyoto protocol articulate this principle by underlining that industrial nations should lead in reducing harmful emissions. Nevertheless, the Kyoto protocol contains no stipulations for developing countries to

make any commitments to reduce their emissions. When applied, therefore, rather than 'leading the way' for developing nations to reduce their emissions, due to the nature of the legal framework, industrial countries may indeed find themselves 'alone in the race' to lower emissions. That said, while seeking to safeguard economic growth in burgeoning economies (by not requiring developing countries to commit to emission reductions) may be a noble objective, the complete exclusion of developing country commitments is one of the greatest shortcomings of the climate change regime in its current incarnation.

In practice, the absence of developing country obligations allows firms based in developed countries to outsource industrial processes and production to countries not subject to binding Kyoto emission reduction targets.<sup>115</sup> This has the overall effect of shifting the source of emissions, instead of decreasing them (an occurrence often referred to as *carbon leakage*).<sup>116</sup> As propounded by Catton, "the successful avoidance of binding commitments by the developing countries has virtually guaranteed *carbon leakage*, with larger than [business-as-usual] emissions in unregulated economies."<sup>117</sup> The result of this is that the environmental effectiveness of the UNFCCC and the Kyoto Protocol is greatly weakened. Without binding commitments on the part of developing countries to prevent carbon leakage, global emissions are likely to continue to increase. Even if the Kyoto protocol were to be fully implemented (with developed countries leading the way and decreasing their emissions) den Elzen and Höhne note that "the approximate stabilisation of emissions by Annex 1 countries will be more than counterbalanced by an ongoing and strong rise in emissions in non-Annex 1 countries."<sup>118</sup> Reducing GHG emissions from emerging economies should therefore be viewed as a priority in negotiating a new climate change agreement.

With regard to small island developing states (many of which are dependent on tourism earnings), the UNFCCC recognizes that small island countries and countries with low-lying coastal areas, among others,<sup>119</sup> are particularly vulnerable to the adverse effects of climate change, but falls short of establishing any mechanisms specifically geared toward such countries. In fact, the Clean Development Mechanism (CDM) is the only apparatus created by the Kyoto Protocol that is geared primarily toward mitigation in developing countries. Unfortunately, however, the CDM does not focus on adaptation to climate change impacts (a major concern to small island states). In addition, its very nature favours larger devel-

oping countries. The disadvantageous nature of the structure of the CDM towards small island developing states (SIDS) is the focus of the section that follows.

It is perhaps due to the absence of specific instruments, in either the UNFCCC or the Kyoto Protocol (financial or otherwise) to protect SIDS that the Alliance of Small Island States (AOSIS) has stated that it is "profoundly disappointed by the lack of apparent ambition within the international climate change negotiations to protect SIDS and other particularly vulnerable countries."<sup>120</sup> The AOSIS Declaration on Climate Change, released in September 2009, expresses concern that global emissions continue to increase, in spite of mitigation commitments (especially those of the developed countries) under the UNFCCC and more specifically, the Kyoto Protocol. Among other things, the declaration calls for adaptation to be afforded a much greater degree of priority and, for increased financial support. It also makes specific calls for UNFCCC negotiations (in Copenhagen in 2009) to result in 'a package of mitigation activities' that provide for:

*long-term stabilization of atmospheric greenhouse gas concentrations at well below 350 ppm CO<sub>2</sub>-equivalent levels... [for] global average surface temperature increases to be limited to well below 1.5° C above pre-industrial levels... [for] global greenhouse gas emissions to peak by 2015 and decline thereafter... [for] reductions in global greenhouse gas emissions by more than 85 percent below 1990 levels by 2050... [and for] Annex I parties to the UNFCCC to reduce their collective GHG emissions by more than 45 percent below 1990 levels by 2020, and more than 95 percent below 1990 levels by 2050, given their historical responsibility.<sup>121</sup>*

These prescriptions build on virtually identical recommendations made by CARICOM, through the Liliendaal Declaration on Climate Change and Development, which was signed in July 2009.<sup>122</sup> The Port of Spain Climate Change Consensus, released by the Commonwealth Heads of Government in November 2009 also calls for average global temperature to be reduced to below one and a half or no more than two degrees Celsius above pre-industrial levels.<sup>123</sup> Interestingly, while all of the above-mentioned declarations call for a greater sense of international urgency and action in mitigating climate change, they are far less specific in their demands of non-Annex 1 parties to the UNFCCC to reduce emissions. None of the aforementioned declarations suggest any targets for

developing nations, but instead simply note that such countries should make a substantial or significant deviation from 'business as usual' emissions through "measurable, reportable and verifiable nationally appropriate mitigation actions."<sup>124</sup>

Yet, as shown earlier, the absence of binding obligations (or at the very least targets) for developing countries does detract from the overall effectiveness of the UNFCCC and its associated instruments. This 'state-of-affairs' is exacerbated when one accounts for the withdrawal of the United States from the Kyoto Protocol. Without a doubt, as a major emitter of GHGs, the United States's participation in making binding commitments to lower carbon output is critical to global efforts to mitigate climate change. Den Elzen and de Moor conclude that the withdrawal of the United States "has had by far the greatest impact in reducing the environmental effectiveness of the [Kyoto Protocol]."<sup>125</sup> As the United States accounted for "roughly half of total Annex 1 reduction commitments,"<sup>126</sup> its withdrawal significantly reduced the scope of global emissions covered by the Protocol. The absence of participation by the United States has also decreased the (potential and actual) usage of the mechanisms created by the Kyoto Protocol, namely Joint Implementation (of mitigation projects by Annex 1 parties), international emissions trading and the CDM. This effectively translates into less mitigation activities worldwide, which according to den Elzen and de Moor has resulted in "total abatement [via the mechanisms of the Protocol being] reduced substantially to a level of only five percent below [business as usual] emissions, instead of seventeen percent with US participation."<sup>127</sup>

Nonetheless, in spite of the unwillingness of developing countries to make binding commitments to reduce emissions, the absence of mechanisms geared toward small and vulnerable economies (such as SIDS) along with the withdrawal of the United States from the Kyoto Protocol, the imperative for urgent action to mitigate climate change is growing. Regardless of existing divergent perspectives on the issue, "the reality is that science is telling us that we are running out of time to save the planet from irreversible harm."<sup>128</sup> At present, "the UNFCCC is neither a comprehensive 'law of the atmosphere' nor a fully formed and detailed regulatory regime, but a framework convention establishing a process for reaching further agreement on policies and spe-

cific measures to deal with climate change."<sup>129</sup> The present pace of mitigation and adaptation activities via the UNFCCC and the Kyoto Protocol does not reflect the urgent need for global action. Therefore, adopting the view that the current climate regime is a building block toward a more robust, legally-binding framework may be an appropriate and fair assessment of the UNFCCC at present.

While negotiations at Copenhagen in December 2009 may have yielded some progress toward new mechanisms along with a new agreement, much work remains to be done. The Copenhagen Accord preserves the legal status of the Kyoto Protocol and supports "the scientific view that the increase in global temperature should be [kept] below two degrees Celsius."<sup>130</sup> It also stresses the need for "a comprehensive adaptation programme,"<sup>131</sup> inclusive of international support. In addition, it promises "scaled up, new and additional, predictable and adequate funding"<sup>132</sup> for developing countries. In so doing the Accord establishes a Copenhagen Green Climate Fund and prioritises financial support for climate change adaptation activities in vulnerable developing countries (including SIDS and those in Africa). Quite notably, the Copenhagen Accord also underlines the decision to establish a "Technology Mechanism to accelerate technology development and transfer."<sup>133</sup>

That said, the Copenhagen Accord is not legally-binding. To add to this, even though greater financial support has been promised, the source of these funds, up to the time of writing, had not yet been identified. Moreover, it sets no specific time for the peaking of global emissions and does not contain emission reduction commitments by developing countries. Instead, it only creates a facility for developing countries to list the actions taken to reduce CO<sub>2</sub> output. Yet, as mentioned earlier, legally-binding commitments to lower GHG emissions from developed and developing is an essential component of any future climate change regime, if it is to be effective. Thus, while the Copenhagen Accord represents yet another building block in the progression toward a more robust legal framework to address the threat of climate change, there is a need for a greater sense of urgency to advance to an international agreement with binding commitments from developed and developing nations to reduce their emissions.

### 4.3.3 The Kyoto Clean Development Mechanism

The Clean Development Mechanism (CDM) is an initiative of the Kyoto Protocol that was engineered to reduce emissions, specifically in developing countries. The CDM, as mentioned earlier, affords industrial nations the opportunity to honour their commitments (to lower their emissions of GHGs) under the Protocol by supporting or investing in projects that reduce emissions in developing countries (as an alternative to more expensive emission reductions in their own countries). The mechanism is meant to serve as a win-win system, where industrial nations enjoy savings from investing in cheaper projects in developing economies, which benefit from being able to attract investors to environmentally-friendly projects.

In order to qualify as a CDM project activity however, initiatives detailed in a Project Design Document (PDD) must meet requirements established by the Treaty and administered by the CDM Executive Board. Projects must therefore fulfil, *inter alia*, the ‘additionality’ and ‘sustainable development’ requirements. The additionality provision stipulates that

*A CDM project must lead to real and measurable reductions in the host country’s total greenhouse gas emissions, which can be achieved either by real emissions reductions at the source, or through absorption – or sequestration – of greenhouse gases.*<sup>134</sup>

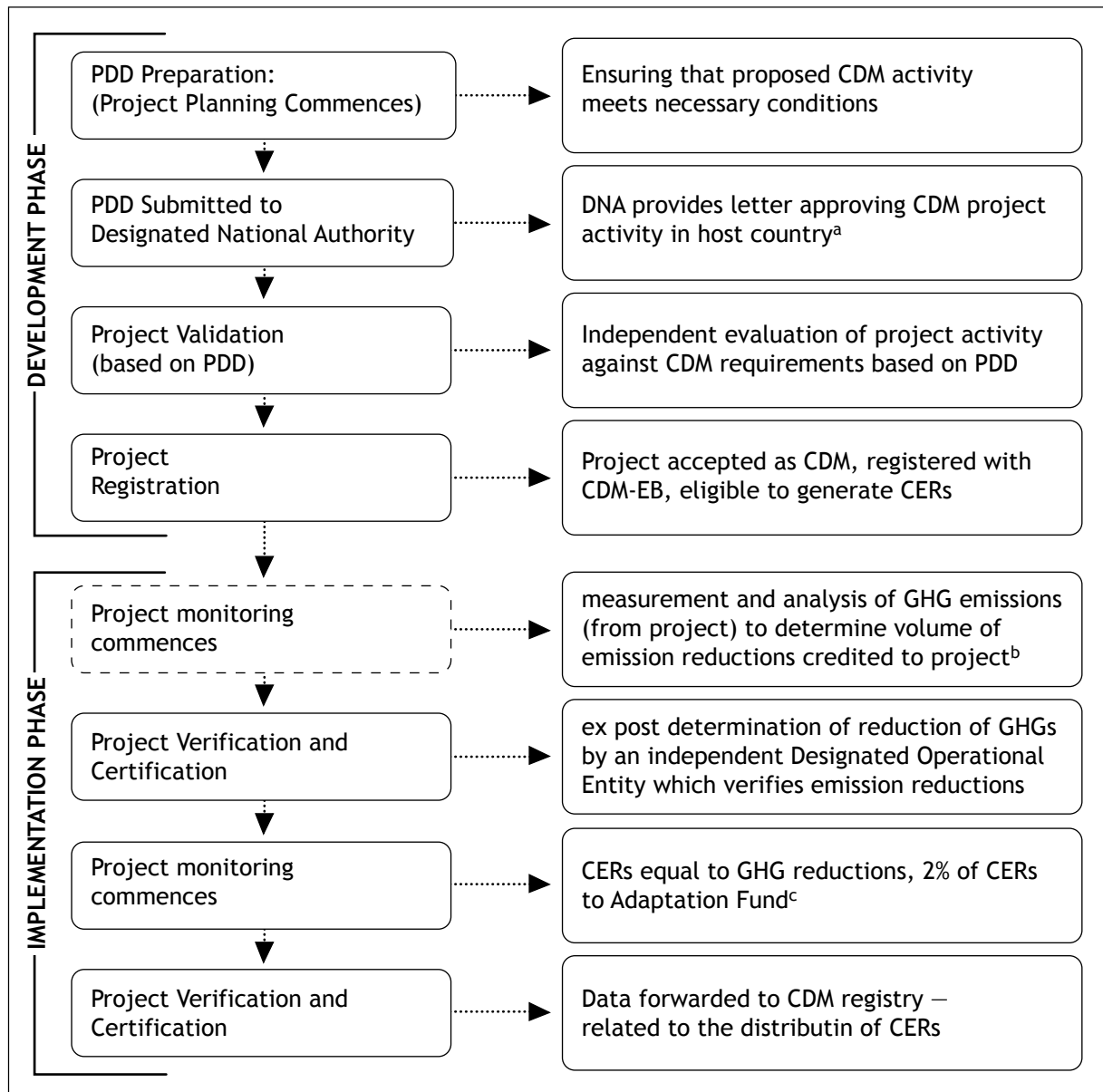
Thus, as indicated within the Kyoto Protocol, CDM project activities must result in ‘Certified Emission Reductions’ (CERs). Moreover, initiatives should be approved on the basis of “reductions in emissions that are additional to any that would occur in the absence of the certified project activity.”<sup>135</sup>

The sustainable development provision obliges stakeholders to minimize or eliminate negative social, economic or environmental externalities that may be brought about by project activities. This principle, therefore, requires all parties

to the CDM to initiate and engage in consultation with those that are likely to be affected by project activities. In this regard, CDM project activities should aim to improve the quality of life experienced by persons in the host country. To add to this, however, parties to the Kyoto Protocol (especially developing nations) have also noted that project activities should lead to the transfer of environmentally-safe technologies, that projects be distributed equitably at regional and sub-regional levels throughout the developing world and that funding received for CDM project activities not be used to justify or lead to the diversion of official development assistance.<sup>136</sup>

The process by which a CDM project activity is converted from an initial idea or proposal to CERs is rather long and onerous (see Figure 11); although it should be added that a simplified process is available for small-scale projects.<sup>137</sup> However, as of 29 October 2009, 1,872 CDM projects were registered.<sup>138</sup> Interestingly, 73.77 percent of these project activities are registered to Asia and the Pacific and 1.92 percent are registered to Africa, while Latin America and the Caribbean accounts for 23.72 percent of CDM project activities.<sup>139</sup> The worldwide distribution of CDM projects is noteworthy, as the development of projects aimed at enhancing energy efficiency within the tourism sector (like CHENACT, as discussed earlier) can serve to boost the short-and long-term viability of the sector. Increased use of energy-conserving technologies can result in direct energy savings and can help to move the Caribbean region further toward carbon-neutral status. To this end, the prospect of technology transfers and the injection of financial resources through CDM project activities can not only facilitate the direct acquisition of climate-friendly technologies, but also create opportunities for knowledge, skills and technologies to be transferred. Increasing the Caribbean share of global CDM project activities, for example, can by extension, add to the competitiveness of the tourism sector in the region.



Figure 11. Simplified Illustration of CDM Project Cycle<sup>140</sup>

<sup>a</sup>Letter from DNA indicating voluntary participation in project and confirms that project meets the local requirements set by DNA (e.g. contributes to sustainable development in host country).

<sup>b</sup>This is done in accordance with Monitoring plan in PDD, though this plan can be revised.

<sup>c</sup>A levy on the overall CDM transaction to assist countries particularly vulnerable to climate change in meeting the costs of adaptation.

#### 4.3.4. Limitations and shortcomings of the CDM

In spite of the great potential of the CDM to contribute to global mitigation efforts, it is important to note that the very nature of the mechanism is discriminatory to small and vulnerable economies (like SIDS). To begin with, the CDM is primarily focused on emissions reduction and, as such, was not created to focus on long-term adaptation to climate change impacts. This is particularly useful to note as the Caribbean region (an archipelago of SIDS) contributes less than one percent to global emissions (as mentioned earlier), despite its widespread fossil fuel use. As a

result however, the volume of CERs to be gained from CDM project activities in Caribbean islands will be relatively small and because of the substantial transaction costs invoked by the long bureaucratic process involved, the region's ability to attract funding via the mechanism is curtailed. According to Lloyd and Subbarao,

*There are several arguments indicating that the high transaction costs involved are making [the] CDM market increasingly favour large, high CER volume projects. Small*

*community-based projects, on the other hand are often not economically viable under the CDM, due to high transaction costs and complex bureaucratic procedures.”<sup>141</sup>*

This perspective is supported by the work of Boyd et al, which showcases the uneven distribution of CDM projects to larger economies in transition (that are also relatively large emitters), primarily China and India from Asia and the Pacific along with Brazil and Mexico.<sup>142</sup> As can be seen below in Table 3, current evidence supports this assertion as the great majority of CDM project activities continue to emanate from larger economies where a greater volume of CERs can be gained (even if they are accrued from

an amalgamation of emission reductions from a number of small-scale projects). CARICOM, due to Jamaica’s wind energy project and Guyana’s bagasse cogeneration (biofuel) project, accounts for only two CDM project activities. This suggests that the CDM may be in need of reform away from being so heavily market-driven in favour of larger emitters. The mechanism should include a facility that specifically seeks to improve support for projects in countries that are not large emitters, (perhaps through the provision of incentives for investment in project activities in such countries). Because of this, regions of the world (like the Caribbean) that are not large emitters may be assisted in their efforts to become more carbon neutral.

**Table 3. CDM Project Activities in Selected Countries as of 29 October 2009.**

COUNTRY	NUMBER OF CDM PROJECTS
India	462
China	652
Mexico	119
Brazil	164
Jamaica	1
Guyana	1

Source: UNFCCC, 2009

It is equally important to acknowledge that there is a greater need for unified action and technical cooperation within the Caribbean in order to attract more CDM project activities to the region. As of 1 October 2009, Dominica, Haiti, Montserrat, St. Kitts and Nevis and St. Vincent and the

Grenadines still did not have a Designated National Authority (DNA) to register or administer CDM project activities.<sup>143</sup> If these nations are desirous of hosting CDM project activities, this situation will have to be rectified with urgency. Until then, however, having five Caribbean territories without a DNA effectively limits the scope of regional cooperation and makes it virtually impossible to have CARICOM-wide projects. Among the countries that have set up such bodies (Antigua and Barbuda, Belize, The Bahamas, Barbados, Grenada, Jamaica, Guyana, St. Lucia, Suriname and Trinidad and Tobago), efforts to initiate CDM project activities have been disjointed and based only on national renewable energy objectives and programmes. There have been no explicit indications that a region-wide CDM project is even being considered. At present therefore, the Caribbean is not strategically positioned to take advantage of the CDM.

## 5. KEY POLICY RECOMMENDATIONS

The Caribbean is not only overly reliant on its tourism sector, but also dependent on arrivals from a few markets. As travellers become more aware of the need to lower their carbon footprint and as climate change impacts become more severe, the need for economic diversification will become more pronounced. In this regard, while opportunities to develop new or alternative tourism products should be explored, trade policies should also be utilised to facilitate and encourage the production and provision of goods and services hitherto not supplied from within the region. Enhancing the use of energy-conserving technologies can help to decrease the energy demand of the tourism sector, and move the region closer to becoming a carbon-neutral zone. In this regard, policies similar to the Tourism Development Act (TDA) in Barbados can provide appropriate incentives for the acquisition of climate-friendly goods and services, which, by extension, can serve to reduce energy consumption within the tourism sector throughout the Caribbean.

Strengthening the ability of the tourism sector to adapt to climate change impacts is critical. A comprehensive programme geared toward addressing adaptation needs within the sector (which are very diverse, as illustrated in Table 1) is therefore necessary. In practice, this will require increased financial and technical assistance to build the capacity of the CCCCC as the centralized body responsible for climate change adaptation within the region. It is through this body that a Caribbean Climate Change Adaptation Strategy can be developed and implemented. Indeed, a region-wide interface through which tourism stakeholders can receive detailed information about acquiring adaptation technologies and/or environmental services ranging from sea defences and hurricane-resistant structures to environmental engineering is likely to be very useful. Trade policies, however, can also be used to enhance the accessibility of climate-friendly technologies to tourism stakeholders. Key policy recommendations, as pertains to trade policy, along with the other major themes examined in this paper, are assessed in the following section and in the conclusion.

### 5.1. Trade Policy Issues

#### 5.1.1. Environmental goods and services

It may be beneficial for CARICOM to reach agreement on a definition of the term “environmental goods and services” (and consequently advance similar agreement within the WTO). However, it is equally (if not more) important for the region to examine in detail, perhaps through commissioned research, which goods and services are of strategic importance to the Caribbean in the effort to mitigate and adapt to climate change. In this way, goods and services that are particularly important to mitigation and adaptation efforts within the tourism sector (as well as other key sectors) in the Caribbean, can be identified. In this respect,

compiling a list of key climate-friendly goods and services can help negotiators differentiate between those products that need to be liberalized (in an accelerated or gradual manner) and those that may need to be shielded from external competition. Thus, a CARICOM list of such products that can perhaps be referred to as environmental goods and services, should be pursued. If resources are spent on such an activity it should ultimately serve to facilitate the formulation of sound negotiating positions based on an analysis of climate change mitigation and adaptation needs in the Caribbean (and within specific key sectors, such as tourism).

#### *Environmental goods*

As mentioned previously, sound trade policy can help to increase access to energy-conserving technologies in order to help move the Caribbean towards being viewed as a ‘carbon neutral zone. Increasing the usage of climate-friendly products could help to phase out more environmentally-harmful alternatives from within the tourism industry. Reducing the carbon footprint of stakeholders within the industry is critical not only because it contributes positively to

climate change mitigation but also because it results in energy savings. It is, therefore, imperative that CARICOM’s trade policy be geared toward reducing the cost of climate-friendly technologies not produced within the region. Pertaining to energy-conserving products that are manufactured (or have great potential to be manufactured) within the region, Caribbean governments should aim to liberalize (in an accelerated manner) the inputs necessary for pro-

duction. Simultaneously, however, it would be prudent to maintain relatively high tariffs (at least temporarily) on climate-friendly products being manufactured within the region (like SW H, as illustrated earlier). At the same time, using border tariffs (and other non-tariff measures) to shield local products from external competition

is one means of ensuring that the region has an opportunity to develop its ability to produce energy conserving goods. Excessively long periods of protection should nonetheless be avoided, as this often removes the incentive for manufacturers to become globally competitive and can even incubate inferior products.

### *Environmental services*

Fostering increased trade in environmental services can also serve to increase the Caribbean's resilience to withstand climate change impacts. Liberalization in this regard essentially serves to widen the skilled labour force available to assist in protecting local habitats, prevent biodiversity loss and minimize damage to infrastructure as well as the natural environment in the face of increasing climate change impacts. Needless to say, opening environmental service sectors through a trade agreement can also increase

the degree of competition faced by established local service providers. As a result, liberalization commitments to schedule environmental services should be done in accordance with development needs and priorities. Thus, conditions requiring the transfer of technology, skill and know-how along with provisions requiring the service to be rendered in the form of a joint venture project (with a local counterpart) assists in building local capacity and should be applied as required.

#### 5.1.2 Regional trade agreements (with specific reference to the CARIFORUM-EU EPA)

The recently signed CARIFORUM-EU Economic Partnership Agreement (EPA) extends to both goods and services. The agreement liberalizes trade in 'substantially all' goods (in congruence with GATT Article XXIV) and creates opportunities for trade in services. As it pertains to climate-friendly goods and services, however, and their application to climate change mitigation and adaptation, the emphasis should now be placed on ensuring that the Caribbean is able to benefit from this liberalization. In practice, this means that the acquisition of energy-conserving goods that were made duty-free via the EPA should be encouraged. In addition, manufacturers (along with the wider private sector) need to be educated and informed on how to utilise the provisions of the agreement so as to boost local production of environmentally-friendly goods through the duty-free import of inputs necessary for production. Capacity-building and private-sector sensitisation in light of increased competition due to the EPA is also critical. To add to this, the EPA has highlighted the need for industrial development corporations throughout the Caribbean to engage the private sector in order to determine which climate-friendly goods should be targeted for production within the region. As a wide range of items have been liberalized by the agreement, this may be an ideal time to seek new opportunities to manufacture different products locally. Based, *inter alia*, on niche market opportunities, perceived comparative advantage, along with the availability and price of necessary inputs

(which may have changed due to liberalization via the EPA), industrial development corporations (along with other business support organizations) can support, perhaps through venture capital or grants, the local manufacture of climate-friendly goods that may not have been produced within the region before.

Many of the same principles can be applied to services, as the EPA does create opportunities for the export of environmental services by CARIFORUM nationals to the EU. However, as it relates to services, the task at hand (aside from the need to engage in capacity building) now relates primarily to ensuring that CARIFORUM nationals can meet the conditions necessary to enter the EU market, particularly through Mode 4 (movement of natural persons). In order for this to occur, a number of procedural matters, such as the mutual recognition of professional qualifications, need to be addressed. Nevertheless, before CARIFORUM nationals can export their labour to external markets, the issue of movement of professional service providers within the region must be addressed. As has been highlighted by Nurse et al, "There is no harmonized regime for temporary entry under Mode 4 in CARICOM let alone by extension to the wider CARIFORUM to include the Dominican Republic."<sup>144</sup> Hence, the passage of professional services bills, which have already been drafted through the CARICOM Legislative Drafting Facility (CLDF), along with the formation of professional and administrative bodies re-

quired to oversee their implementation, should now be viewed as a regional priority. Thus, while the inflow of environmental service providers from the EU (via the EPA) can contribute positively to the region's ability to mitigate and adapt to climate change, regional leaders must first take steps to enhance and promote the intra-regional movement of CARIFORUM nationals that are capable of providing similar or identical services.

Ultimately, if trade policy is to have a pronounced impact on the ability of the tourism sector to

lower its carbon footprint and adapt to climate change, efforts should seek to boost the circulation or provision of climate-friendly goods and services within the region. Such policies should aim to make environmental services and energy-conserving technologies as accessible and affordable as possible. Toward this end, trade policy ought to include measures that encourage technology transfers and should be accompanied by domestic policies and programmes to build the capacity of local manufacturers and service providers.

## 5.2 The Air Passenger Duty

The UK Air Passenger Duty, which was introduced on 1 November 2009 is a carbon tax meant ultimately to discourage long-haul travel and its associated emissions. This levy on air travel is meant to mitigate climate change by influencing travel patterns so that flights to destinations closer to London are more affordable. By encouraging potential travellers to journey shorter distances, the APD is effectively meant to decrease the carbon footprint of individual travellers by making longer flights more expensive. That said, this policy, at its best, is poorly implemented (and not well-thought through) and at its worst, can be viewed as irresponsible. The APD is unjustifiably discriminatory and disadvantageous to the Caribbean region and can have direct adverse impacts on the competitiveness

of the Caribbean tourism sector. It is a glaring example showing why a multilateral approach is best suited to efforts to tackle the issue of climate change mitigation.

Without a doubt, the APD should be immediately repealed in its entirety, or reformed for duties to be calculated based on individual ports of entry, rather than capital cities as is currently the case. However, the APD, (along with other carbon taxes) should perhaps be administered based on the principle of 'common but differentiated responsibilities', which is embedded in the UNFCCC. In this way, ports of entry in developing (or non-Annex 1) countries would ultimately attract a lower tax relative to industrial (or Annex 1) countries that are in the same band, tier or region.

## 5.3 The United Nations Framework Convention on Climate Change

The UNFCCC is a useful building block, upon which specific instruments (such as the CDM under the Kyoto Protocol and the Copenhagen Accord) have been developed. It is through this framework convention that new mechanisms and a more robust and legally-binding agreement are now needed to ensure urgent global action is taken to mitigate climate change. While it is important that the principle of 'common but differentiated responsibilities' be left intact, (thus requiring industrial nations to once again 'take the lead'), any new agreement should ideally require emission reduction commitments from both developed and developing countries. A comprehensive approach toward addressing mitigation in developing countries is particularly important as such countries possess great potential for mitigation activities in terms of not only lowering current emissions but also avoiding future emissions through low carbon, energy efficient economic growth. That said, a new climate change regime should do more than limit CO<sub>2</sub> emissions, it should ultimately provide

appropriate incentives for low-carbon economic growth, so as not to stifle development in the non-Annex 1 parties to the UNFCCC.

Simply put, a new binding agreement, facilitated by the legal and administrative infrastructure established by the UNFCCC, should institute emission limitations and seek to reward low-carbon economic growth. One way of attempting to achieve this is to weigh or measure a country's emissions against the rate of GDP growth. A mechanism of this nature would relate emission reductions to improvements in GHG emissions-per unit output of GDP.<sup>145</sup> Thus, a country's commitment to lower its carbon footprint, inclusive of national emissions targets, would be related to the rate of economic growth (using GDP per capita as a measure of economic growth). This model, referred to as an emission intensity approach, aims to discourage increasing emissions while simultaneously promoting low-carbon economic growth. Such a policy would help to address fears (on the part of

developing countries) that committing to emission reductions would adversely affect their ability to industrialize and grow their economies.

Under such a model, financial assistance from developed countries for climate change mitigation and adaptation can also be tied to commitments to a low emissions development path. This approach could favour countries that are already low emitters, such as those in Caribbean, and help to avoid future increases in emissions in small and larger developing countries. Adequate and transparent financial support for developing countries, however, is vital, as such nations generally have a great capacity to avoid future emissions, but significantly less capacity to engage in adaptation and mitigation activities.<sup>146</sup> As a result, additional, preferably grant-based financing, especially for states that are particularly vulnerable to climate change impacts, (such as those in the Caribbean) should be an essential component of any new agreement.

More specifically, an emission intensity approach could act as an added impetus for the Caribbean tourism sector to lower its carbon footprint so that the region could be viewed as a 'carbon neutral zone'. Such a status would help to sustain and grow the tourism sector by making the region

more attractive to the environmentally-conscious (as mentioned earlier). Incentives for low-carbon growth could also encourage the development of more projects, like CHENACT, that serve to increase the use of energy-conserving technologies within the tourism sector which can, by extension, help to improve the CO<sub>2</sub> emission-per GDP output of the tourism sector in the Caribbean.

The UNFCCC "has the potential to raise the bar in terms of the level of cooperation within the international community on environmental issues."<sup>147</sup> However, for this to occur, binding commitments need to be made and adhered to by developed and developing countries. In addition, the CDM, as the only mechanism formed by the Protocol that is geared towards developing countries, needs to be revised. The United States also needs to be fully re-engaged in the continued development and implementation of existing and future agreements and mechanisms under the UNFCCC. Even further, full compliance with the first commitment targets set under the Kyoto Protocol is necessary. Most important, a new international and legally binding climate treaty should ultimately restrict or at the very least discourage increases in emissions while simultaneously provide incentives for economic growth.

#### 5.4 The Kyoto Protocol Clean Development Mechanism

Allowances should be made for small nations to have a regional or joint DNA to process CDM applications and look for opportunities for investment via the mechanism. In practice, having to establish a DNA—and train staff to function in that capacity—may require resources that small countries may not possess. SIDS, often due to their small size, tend to have technical, financial and human resource constraints. The establishment of a regional or joint DNA in lieu of national DNAs may be a viable means for small countries to effectively manage the long bureaucratic process associated with CDM projects. In this way, region-wide projects can be promoted and this creates the opportunity for SIDS to share the administrative burden associated with project activities.

Specifically as it pertains to the Caribbean, region-wide projects can serve to make the archipelago a more viable location for CDM projects as the region as a whole should be able to offer a greater volume of CERs to industrial nations. This may be able to give the region a competitive edge especially if the present market-driven system does not change. As a suggestion, CDM project activities can be channelled through the Caribbean Renewable Energy Development Pro-

gramme (CREDP)<sup>148</sup> or the CCCCC, based on the existing capacity of these organizations and on how regional leaders choose to structure and prioritize CDM project activities, although the latter of the two institutions may be able to facilitate a greater degree of diversity of project activities. Regardless of the institution selected, it is essential that the region coordinates its efforts to attract CDM project activities to a greater extent so that the investment and financial assistance that the scheme is meant to provide (for developing countries to lower their GHG emissions) is acquired and applied where it is most needed.

Finally, the tourism sector's attempt to benefit from the CDM should not be limited to the CHENACT project. As the Caribbean pursues carbon neutrality, the tourism sector should actively seek out opportunities for nation- or region-wide CDM projects (so long as the countries selected have DNAs). In fact, the CDM represents a commercially-viable means for the tourism sector to acquire energy-conserving technologies. In this way, a private sector approach, motivated by savings associated with reduced energy consumption can be viewed as an additional way of reducing the tourism sector's carbon footprint.

## CONCLUDING REMARKS

Tourism represents the largest, most diverse economic activity in the Caribbean region. The sector stimulates other segments of the economy and is the largest employer and the greatest contributor to GDP (directly and indirectly). Therefore, the viability of the sector is critical to the development of the archipelago of SIDS. The region is not only too dependent upon the tourism sector (which is already sensitive to climate change impacts), but also overly dependent on travellers from a limited number of markets to sustain their demand for Caribbean vacations. Indeed, it is this dependence on a handful of tourist markets that makes the region particularly vulnerable to unilateral climate change measures by other governments, such as the APD, which could adversely affect the Caribbean tourism sector by raising the cost of travel to the region.

Simultaneously, projected and current climate change impacts (including beach erosion), are expected to curtail the region's ability to offer traditional tourism products (associated with sun, sea and sand). Thus, in addition to the need to boost the demand for domestic vacations (also referred to as 'staycations'), to encourage greater intra-regional travel and to seek new tourism markets, Caribbean nations must delve into opportunities to develop new or alternative tourism products in ways that will boost the sector's resilience to climate change.

In tandem, increased energy efficiency can reduce costs and also help to make the sector more attractive to environmentally-conscious travellers. In this respect, increased use of energy-conserving technologies not only strengthens efforts to promote the region as a carbon neutral zone, but also helps to develop an enabling environment necessary to boost adaptation to climate change. Trade policies should therefore serve to support the local manufacture of energy-conserving technologies by decreasing or removing tariffs on inputs necessary for production and by shielding such goods from external competition, for a measured period of time. While fiscal incentives and trade policy – to support the acquisition and application of climate-friendly technologies – may be helpful in increasing energy efficiency and reducing the energy demand of the tourism sector, such policies are not (in and of themselves) likely to be effective if applied in a vacuum. Tourists and proprietors need to be engaged and informed (through education and re-training) about the importance of decreasing their carbon footprint in order to bring about the

behavioural changes needed to reduce the sector's energy demand.

The threat of climate change is global. Therefore, national policy responses, however aggressive, will be insufficient. A greater degree of regional policy harmonization and technical cooperation is necessary. Thus, while the CCCCC, CDERA, CREDP and CCRIF all represent regional initiatives that are useful in developing mitigation and adaptation strategies in the region, a great deal of inter-agency cooperation (along with political and institutional responsiveness at the national level) is necessary to ensure the uniform application of policies and projects throughout CARICOM.

Even beyond this, the Caribbean must play its role in contributing to a stronger, legally-binding international climate change agreement. Though the region currently accounts for less than one percent of global emissions, the Caribbean can do its part to avoid increasing its CO<sub>2</sub> output in the future by committing to a low-carbon development path. Larger developing countries, along with developed nations need to do the same. Current scientific evidence makes it clear that "a future [climate change] regime which does not engage the major developing states in GHG reductions will not be successful."<sup>149</sup> The UNFCCC should, therefore, be strengthened through the institution of a new climate change agreement under which developed and developing nations make binding commitments to decrease their emissions through low-carbon economic growth. The negotiations, though complex, are of seminal importance to the future of MEAs. Essentially, "the message would be that if the MEA approach can work for climate change, it can work for other, less complex, global environmental challenges."<sup>150</sup>

Specifically as it relates to the Caribbean, for nations already inhibited by small size, associated with limited financial, human and natural resources, regional cooperation is perhaps the archipelago's greatest asset. This needs to be capitalized upon to a greater extent through the development of projects that can attract investment via the CDM. Currently, efforts to attract CDM projects to the region are still disjointed. Regional projects can offer greater benefits to industrial nations utilizing the CDM. In tandem therefore, the CHENACT initiative (especially as it is specifically relevant to the tourism sector) may be a useful gauge of the ability of a region-

wide energy-conservation project to attract funding under the CDM. Regardless of its ability to do so, however, a greater degree of regional coop-

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