

**Conference Topic:** Climate Change

**Title of Paper:** Contending with Global Change: Climate Change, Strategic Trade Policy, the UNFCCC and the competitiveness of the Tourism Sector in the Caribbean.<sup>a</sup>

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## Caribbean Tourism

Tourism constitutes a major source of revenue and employment in the Caribbean. The role of the tourism sector in the region is critical as the sector represents CARICOM's largest export when compared to other forms of economic activity (see Figure 1).

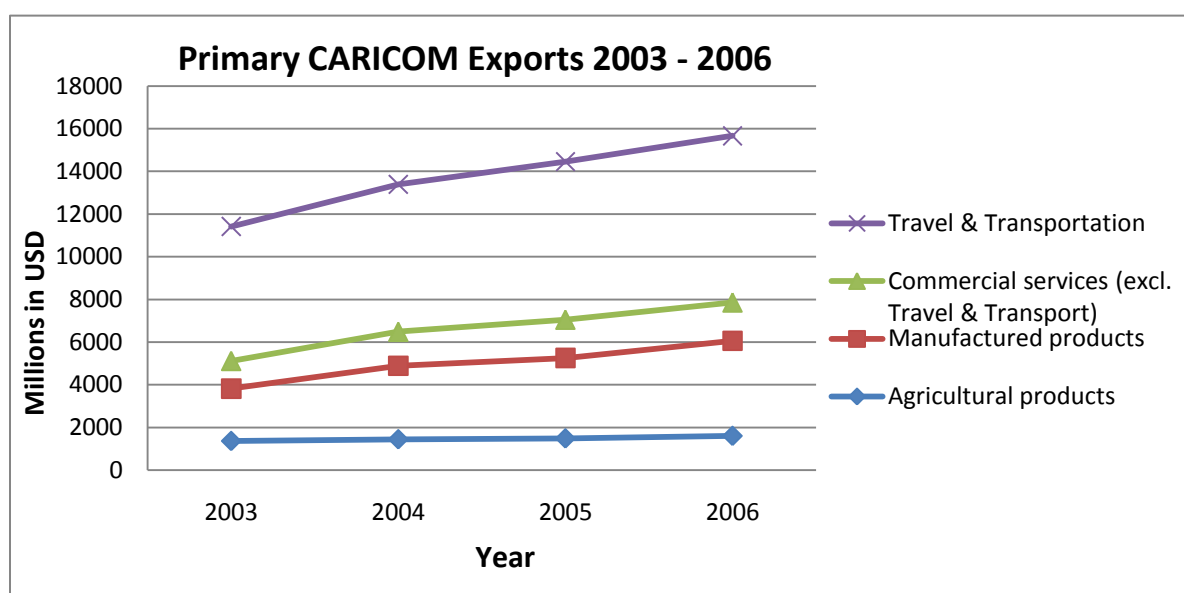


Figure 1: Primary CARICOM Exports: 2003 - 2006

Source: World Trade Organization

In 2007, in the nations that comprise the Organization of Eastern Caribbean States (OECS)<sup>1</sup>, 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>2</sup> Across the region, as illustrated in Figure 2, the Travel and tourism industry has contributed well over 10 percent of regional GDP since the turn of the millennium (and prior to that period as well). It is noteworthy to highlight at this point, 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

<sup>a</sup> This paper is largely based on the research published by the International Centre for Trade and Sustainable Development (ICTSD) and written by the same author in a more detailed paper entitled “Resilience Amidst Rising Tides: An Issue Paper on Trade, Climate Change and Competitiveness in the Tourism Sector in the Caribbean.”

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 a firm to conduct repairs and renovations on the same hotel would be seen as 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.

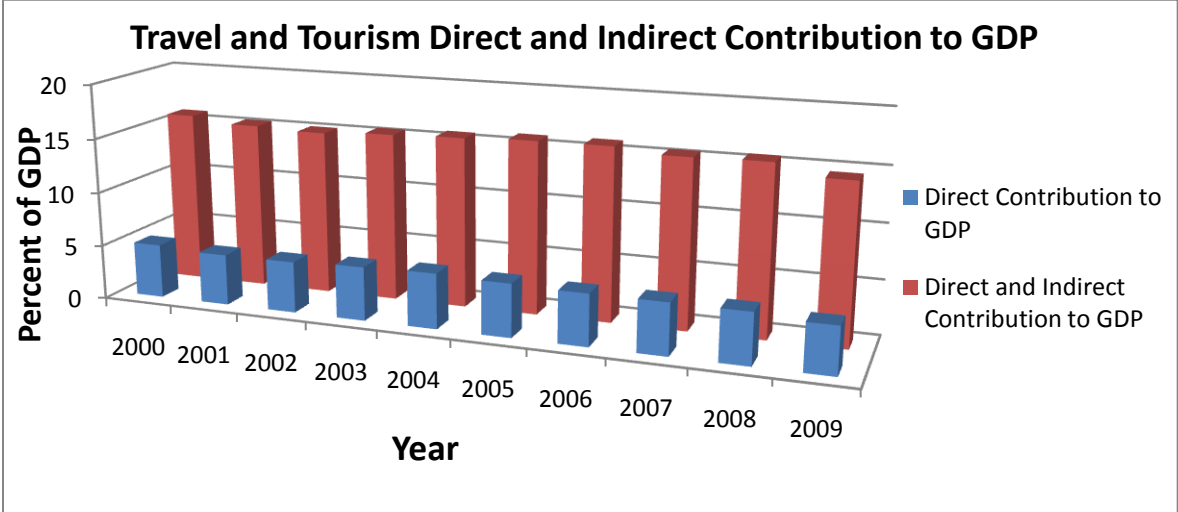


Figure 2: Travel and Tourism Direct and Indirect Contribution to GDP

Source: World Travel and Tourism Council

The economic reliance of the Caribbean on the tourism sector therefore points to the need for economic diversification. Even further, not only is the region overly reliant on tourism exports as for revenue, but it is heavily dependent on tourists from a handful of tourist markets. As illustrated in Figure 3, in 2008, 57 percent of tourist arrivals into the Caribbean emanated from the United States alone, while arrivals from Canada and Europe accounted for 10 and 19 percent of arrivals respectively. Only about 14 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 (perhaps emerging) tourist markets as well.

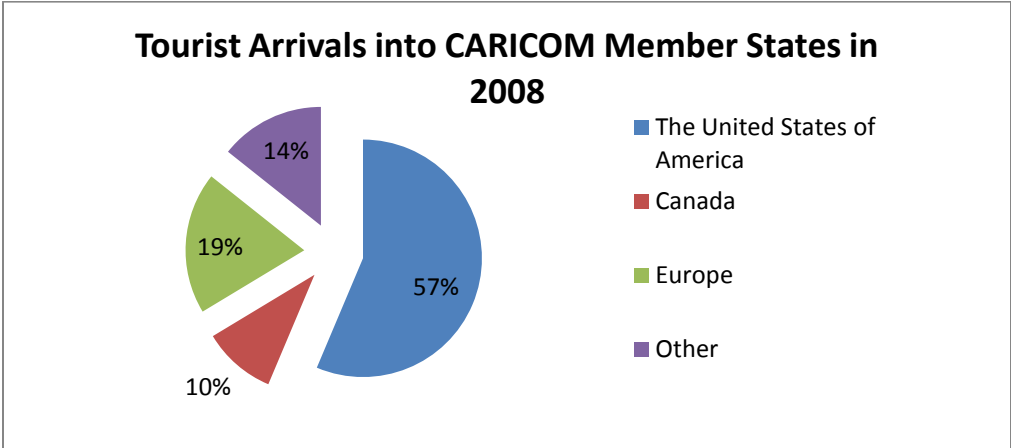


Figure 3: Tourist Arrivals into CARICOM Member States in 2008

Source: Caribbean Tourism Organization<sup>3</sup>

### **Caribbean Tourism and 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>4</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 in the Caribbean) and greater coastal hazards, the development of tourism linkages, which can serve to create new or alternative tourism products (such as agro-tourism, heritage tourism and community tourism) is critical to adaptation efforts within Small Island Developing States (SIDS) threatened by climate change impacts. Alternative tourism products 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 the ‘unique selling points’ (USP) of Caribbean tourism.

It is within this context of more intense and frequent climate change impacts in the Caribbean along with growing concerns about climate change (particularly within tourist markets) that the role of strategic trade policy becomes evident. Trade policy accompanied by appropriate government incentives (including capacity building initiatives as well as fiscal and investment incentives) can serve to facilitate the increased acquisition and application of adaptation and mitigation technologies within the region.

### **Strategic Trade Responses to the threat of Climate Change**

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, but 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.

Ideally, removing or reducing tariffs and other barriers on specific energy-conserving technologies can help to foster the growth of locally produced climate-friendly products (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 domestically. A trade regime that promotes local production of such technologies not only helps to support activities like the Caribbean Hotel Energy Efficiency Action Programme (CHENACT) - where the tourism sector actively seeks to enhance the usage of environmentally-friendly goods within hotels - but also increases the accessibility of climate-friendly goods and services to other sectors in the economy. It can also act as a platform for the development, growth and integration of Small and Medium sized Enterprises (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>5</sup>

Notwithstanding this, the acquisition and diffusion of climate-friendly goods and services 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. In the case of Barbados, fiscal incentives were made available to households and members of the private sector that wanted to acquire Solar Water Heaters. 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 strategic industrial policy that addresses investment, innovation and intellectual property be deployed to boost local

capacity to acquire energy conserving technologies and to support domestic 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.

### **Strategic Responses within the context of Global Policy: the UNFCCC**

As it pertains to the threat that increasing greenhouse gases (GHGs) such as carbon dioxide (CO<sub>2</sub>) emissions pose to the global environment, the United Nations Framework Convention on Climate Change (UNFCCC) aims to stabilize “greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”<sup>6</sup> In so doing, the convention lays the basic foundation, not for the reversal, but the stabilisation of greenhouse gases (GHGs) over a prolonged period - 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>7</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 emissions and to “formulate, implement, publish and regularly update national and where appropriate, regional programmes containing measures to mitigate climate change.”<sup>8</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>9</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>10</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 also 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>11</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 5 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

Notwithstanding the above, 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>12</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>13</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>14</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 I countries will be more than counterbalanced by an ongoing and strong rise in emissions in non-Annex 1 countries.”<sup>15</sup> Reducing GHG emissions from emerging economies should therefore be viewed as a priority in negotiating a new climate change agreement.

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>16</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 specific measures to deal with climate change.”<sup>17</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.

Negotiations at Copenhagen in December 2009 did yield some progress toward new mechanisms along with a new agreement. 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 2 degrees Celsius.”<sup>18</sup> It also stresses the need for “a comprehensive adaptation programme,”<sup>19</sup> inclusive of international support. In addition, it promises “scaled up, new and additional, predictable and adequate funding”<sup>20</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>21</sup>

That said, the Copenhagen Accord is not legally-binding. 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 nations 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

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>22</sup> are particularly vulnerable to the adverse effects of climate change, but stops 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.

The Clean Development Mechanism (CDM) is an initiative of the Kyoto Protocol that was engineered to reduce emissions, specifically in developing countries. The CDM 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

Unfortunately, however, the CDM does not focus on adaptation to climate change impacts (a major concern to small island states). In addition, CDM project developers are compensated based on the amount or degree of emissions that is avoided as a result of the project activity. For this reason, CDM projects must result in measurable and verifiable emission reductions, referred to as Certified Emission Reductions (CERs). These CERs can then be converted into carbon credits and placed on the carbon market and sold. In practice therefore, projects that result in larger emission reductions are likely to result in greater revenue or profit for developers (as a greater number of CERs can be sold on the carbon market as carbon credits). This market based system, by its very nature, favours larger developing countries that are greater emitters (and as a result can offer greater potential reductions, i.e. greater CERs). Additionally, as submitted by 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>23</sup>

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 19 May 2010, Dominica, Haiti, Montserrat<sup>b</sup>, 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>24</sup> If these nations are desirous of hosting CDM project activities, this situation will have to be rectified with urgency. Until then, however, having 5 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

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<sup>b</sup> Montserrat is mentioned here solely due to the fact that it is a full member of the Caribbean Community (CARICOM). That said, as a British Overseas Territory, it is possible and conceivable that CDM project activities may be administered through the central government in the United Kingdom.

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.

### **Concluding Remarks and Recommendations**

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 highly dependent on the tourism sector (which is already sensitive to climate change impacts), but also on tourists from a limited number of countries, thus identifying the need for diversification.

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.

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. As a result, the Caribbean must play its role in contributing to a stronger, legally-binding international climate change agreement. Even beyond this, though the region currently accounts for less than 1 percent of (absolute) 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>25</sup>

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.

The UNFCCC “has the potential to raise the bar in terms of the level of cooperation within the international community on environmental issues.”<sup>26</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, may need to be revised or refined, in order to attract more small-scale projects. 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 providing incentives for low-carbon economic growth

For the Caribbean, as 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 Caribbean Hotel Energy Efficiency Action Programme (CHENACT)<sup>c</sup> initiative (especially as it is specifically relevant to the tourism sector) may be a useful gauge of the ability of a region-wide energy efficiency and conservation project to attract funding under the CDM. Regardless of its ability to so do however, a greater degree of regional cooperation is imperative in order to safeguard the long-term viability of the tourism sector amidst a warming planet.

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<sup>c</sup> CHENACT is a region-wide initiative aimed at improving the competitiveness of small and medium-sized hotels (any hotel with less than four hundred rooms) in the Caribbean, by enhancing their use of available energy sources.

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<sup>1</sup> The Organization of Eastern Caribbean States (OECS) comprises Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.

<sup>2</sup> The World Bank, “The Organization of Eastern Caribbean States (OECS): Increasing Linkages of Tourism with the Agriculture, Manufacturing and Service Sectors.” Report No. 44060 – LAC, September 2008, p. 7

<sup>3</sup> Information reported to Caribbean Tourism Organization as of August 21 2009. Figures for Antigua and Barbuda constitute non-resident arrivals. Also, information collected does not include Tourist Arrivals into Haiti. Data available at <http://www.onecaribbean.org/statistics/2008stats/default.aspx>. Accessed on October 31, 2009.

<sup>4</sup> Mimura, N., L. Nurse, R.F. McLean, J. Agard, L. Briguglio, P. Lefale, R. Payet and G. Sem, “Small islands. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change,” M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 2007, p. 3.

<sup>5</sup> World Trade Organization and the United Nations Environment Programme, “Trade and Climate Change.” Available at [http://www.unep.ch/etb/pdf/UNEP%20WTO%20launch%20event%2026%20june%202009/Trade\\_&Climate\\_Publication\\_2289\\_09\\_E%20Final.pdf](http://www.unep.ch/etb/pdf/UNEP%20WTO%20launch%20event%2026%20june%202009/Trade_&Climate_Publication_2289_09_E%20Final.pdf). Accessed on August 13, 2009. p. 82.

<sup>6</sup> The United Nations Framework Convention on Climate Change, Article 2

<sup>7</sup> Ibid. Article 4 (2) a.

<sup>8</sup> Ibid. Article 4 (1) b.

<sup>9</sup> Ibid. Article 4 (1) c.

<sup>10</sup> Ibid. Article 4 (7).

<sup>11</sup> Ibid. Article 1

<sup>12</sup> Ibid.

<sup>13</sup> Carbon leakage as defined by the IPCC (with reference to the Kyoto Protocol), as the increase in emissions in non-Annex B countries due to implementation of reductions in Annex B, expressed as a percentage of Annex B reductions. For more on this see, the International Panel on Climate Change Synthesis Report 2001. Summary for Policymakers. Available at <http://www1.ipcc.ch/pdf/climate-changes-2001/synthesis-spm/synthesis-spm-en.pdf>. Accessed on December 8, 2009. p. 27.

<sup>14</sup> Will Catton, "Dynamic carbon caps. Splitting the bill: A fairer solution post-Kyoto." *Energy Policy*, 2009: 5636-5649. Catton's assertion is based on the IPCC's comments on *carbon leakage*. For more on this see, the International Panel on Climate Change Synthesis Report 2001. Summary for Policymakers. Available at <http://www1.ipcc.ch/pdf/climate-changes-2001/synthesis-spm/synthesis-spm-en.pdf>. Accessed on December 8, 2009.

<sup>15</sup> Michel den Elzen, Höhne, N., 2008. Reductions of greenhouse gas emissions in Annex I and non-Annex I countries for meeting concentration stabilisation targets. *Climatic Change* 91 (3–4), p. 261.

<sup>16</sup> Meinhard Doelle, “From Hot Air to Action? Climate Change, Compliance and the Future of International Environmental Law.” Thomson Carswell: Ontario, Canada, 2005.

<sup>17</sup> Patricia Birnie, Alan Boyle and Catherine Redgwell “International Law and the Environment”, Oxford University Press: Oxford, United Kingdom, 2009. p. 357

<sup>18</sup> United Nations Framework Convention on Climate Change (2009). Copenhagen Accord. [FCCC/CP/2009/L.7](http://www.unfccc.int/kyoto_protocol/items/2830.php). Copenhagen, United Nations Framework Convention on Climate Change.

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<sup>19</sup> Ibid.

<sup>20</sup> Ibid. p. 3.

<sup>21</sup> Ibid.

<sup>22</sup> See the United Nations Framework Convention on Climate Change, Article 4 (8).

<sup>23</sup> Bob Lloyd and Srikanth Subbarao, "Development challenges under the Clean Development Mechanism (CDM) – Can renewable energy initiatives be put in place before peak oil?" *Energy Policy* 37 (2009) 237-245

<sup>24</sup> Listing of Designated National Authorities available at <https://cdm.unfccc.int/DNA/index.html>. Accessed on October 31, 2009.

<sup>25</sup> Patricia Birnie, Alan Boyle and Catherine Redgwell in "International Law and the Environment", Oxford: Oxford University Press 2009. p. 372.

<sup>26</sup> Ibid. p. 314.

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