



Climate Change in the Caribbean...

Climate Change has been a topic of intense discussion within the last couple months of 2009. It was a highly debated subject during the 21st Commonwealth Heads of Meeting Government (CHOGM), which stemmed as a precursor to the anticipated United Nations Climate Change Conference held in Copenhagen, Denmark. Climate change has become a cause for concern given the increased levels of greenhouse gases contributing to global warming. This poses serious problems to developing countries which have insufficient funding, which is necessary to combat these changes. In the case of the Caribbean, the effects of climate change create unique threats, given the location and economies of Caribbean countries.

Caribbean countries are located along the hurricane belt, and given the increased temperatures associated with global warming; the intensity and frequency of hurricanes can be expected. Hurricanes are formed over warm waters in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico. With increased temperatures, these waters become highly favorable for hurricane formation. This poses the potential of widespread devastation both to human and infrastructural development. Casualties from these ferocious storms can be numerous, and the damage they cause can be catastrophic. The combined effect of these calamities can result in major setbacks to the development of economies, as was the case with Haiti in 2008, where four major storms battered the island. Haiti, already impoverished, was setback further in its development as damages were estimated at USD 5 million, which accounted for 5% of its GDP. Another example was Grenada, which suffered from Hurricane Ivan in 2004. The storm resulted in the damage of 90% of houses on the island and the cost of the recovery was estimated to be almost twice that of its annual GDP. Moreover, its agriculture industry was seriously affected when its nutmeg trees were uprooted during the passage of Hurricane Ivan. To date, the nutmeg industry has not generated income at levels seen prior to the passage of the hurricane.

Climate change also impacts the agriculture industry of Caribbean countries. This however is twofold – destruction of crops through hurricanes and the ability to provide food for the population. As highlighted earlier, agricultural crops can be destroyed by hurricanes both by the sheer force of its winds and the amount of precipitation it deposits. Agriculture's contribution to GDP ranges from 2% to 38% for varying Caribbean economies. Therefore, a single disaster can cause an adverse shock to these economies. In addition to contributing to GDP, agriculture is also a significant part of the countries' exports. This is so for Grenada and Dominica which are major exporters of nutmeg and bananas respectively. Destruction of these crops can cripple their economies' exports which can translate to deteriorations in its balance of payments (BOP), thus leading to further economic woes.

Increased temperatures worldwide can result in lower harvests and the possibility of a shortage in food supply, and the Caribbean is no exception. Most if not all Caribbean countries produce some agricultural products to be consumed domestically. Therefore, if increased temperatures reduce the output harvested then Caribbean countries may have a shortage of food domestically. They may be forced to import food to feed its population, putting a strain on its BOP. Furthermore, given that there may sometimes be a shortage of food worldwide, chances are that food prices will be high. This puts a strain on Caribbean countries to source the funds needed to provide food for its population.

Tourism is arguably one of the largest contributors to GDP in the Caribbean. How then does climate change impact tourism one may ask? The connection stems from that of coral reefs. Coral reefs can be found across the Caribbean, with popular tourist destinations in Tobago, St. Lucia, Belize and Jamaica. Corals thrive in clear, warm waters with temperatures ideally between 23 – 25°C. Increased temperatures contribute to coral bleaching, which causes corals to die. With the death of the corals, tourist arrivals will dwindle resulting in a number of implications for tourism dependent economies. Tourism provides a means of employment for nationals of the receiving country, and unemployment will increase. Additionally, tourism is a means of earning foreign exchange, so with fewer arrivals, foreign exchange levels may decline.

Global warming also impacts on sea levels, which have risen approximately 2 to 3 mm per annum within the last decade. This has severe implications for Caribbean countries, most of which are at sea level. There is the increased probability of coastal flooding and erosion, particularly during stormy weather, causing surges to reach further inland. Coastal communities will be the ones most affected and may have to be relocated further within the island. However, Caribbean islands are quite small so one is limited by how far inland persons can be relocated. Relocation in itself poses challenges, both for the families moving and the authorities, who must provide adequate facilities for its domestic refugees. Additionally, rising sea levels has the potential of polluting the local water supply. Higher sea levels can cause saline intrusion into fresh water supplies, forcing authorities to seek alternative means of providing water supplies for its population.

Increased spending will have to be borne by regional governments. This will be needed to provide relief in the event of any extreme weather conditions and also to research preventative measures, for example infrastructural reinforcement. The impact of climate change in the Caribbean poses great implications for regional states. It should be noted however that mitigating measures have been put in place. One positive outcome of the recently concluded United Nations Conference on Climate Change was the agreement of major developed countries, along with Brazil and China, to curb greenhouse gas emissions. Additional funding was also pledged by developed countries to not just help the Caribbean, but other vulnerable developing countries as well. Measures are also being implemented for alternative energy sources to reduce air pollutants. This in itself is very costly, and with reference to the Caribbean, sourcing funds to implement or research these may be quite a challenge. With mitigating measures being put in place, one may wonder how timely these may be. Already there are signs of climate change worldwide, and the possible effects of it are real. For the Caribbean, the impacts can be both social and economic; therefore serious measures need to be put in place to prepare for possible negative outcomes.

FINANCIAL & ECONOMIC INDICATORS

As at 14 January, 2010

<u>Exchange Rate/US\$</u>	<u>Closing Value</u>	<u>Previous Week</u>
Yen	91.21	93.37
Euro	1.45	1.43
Jamaica	89.65	89.63
Guyana	204.70	204.40

<u>Commodity Prices</u>	<u>Closing Value</u>	<u>Previous Week</u>
Crude oil (US\$/bbl)	79.39	82.66
Natural Gas (US\$/mmbtu)	5.78	7.51
Gold (US\$/Troy Ounce)	1,142.85	1,131.60

Eurobond Indices (As at 14-01-10)

Lehman Brothers Global Aggregate Index (Return % YTD as at 15 Jan 10)	1.46
JP Morgan EMBI+ (Basis points)	276
JP Morgan Central America and Caribbean Index (CACI) (YTD return %)	0.90

<u>Policy Interest Rates (%)</u>	<u>Closing Value</u>	<u>Previous Week</u>
United States	0.11	0.12
Euro Zone	1.00	1.00
Japan	0.09	0.09
Brazil	8.75	8.75
Trinidad	5.25	5.25
Jamaica	12.50	12.50
Barbados	2.50	2.50

<u>Market Interest Rates (%)</u>	<u>Closing Value</u>	<u>Previous Week</u>
US 90-day T-Bill	0.06	0.05
US 10-Yr Treasury	3.74	3.83
3-month UK Libor	0.61	0.61
Japan 90-day T-Bill	0.28	0.28
Brazil 90-day T-Bill	9.12	8.65
TT 90-day T-Bill	1.34	1.34
Jamaica 90-day T-Bill	15.34	15.34
Barbados 90-day T-Bill	3.43	3.44

Sources: Bloomberg, J.P. Morgan, CMMB, Central Bank of Trinidad and Tobago, Bank of Jamaica, Central Bank of Barbados, www.lehman.com

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