

## **Delivering a CARICOM Climate Change Plan for the Caribbean**

*John Firth*

Acclimatise, FarnsfieldNewark, Nottinghamshire

United Kingdom

j.firth@acclimatise.uk.com

In July 2009 the CARICOM Heads of Government at their meeting approved the Regional Framework for Achieving Development Resilient to Climate Change (the Framework) which defines the regional strategy for coping with climate change. The Heads of Government also mandated the Caribbean Community Climate Change Centre to embark on a process to develop a comprehensive regional plan for the implementation of that strategy. This will identify and prioritize activities under each strategic element and goal area of the Framework, allocate responsibilities and outline functional co-operation between regional and national agencies, develop an investment programme, and propose a governance regime and a monitoring and evaluation system. The overall objective is to create a workable CARICOM action plan that has full support and endorsement from all CARICOM national governments, regional bodies and funding organizations.

A consulting team includes the climate risk management firm, Acclimatise, UK. The team will consult with national, regional and international stakeholders and seek views on the key components of the IP. Through this extensive and inclusive consultative process, we hope to ensure that the IP captures the priority issues for CARICOM members reflecting both national and regional concerns. It is planned to present the IP to the Heads of Government at their meeting in July 2011 and seek their formal approval.

Keywords: CARICOM, Climate Change, Investment Programme,

## **Climate policy and political ecology in Guyana: Torn between multiple lovers and rising above the gathered storm of competing natural resource interests.\***

*John Cartey Caesar*

Department of Biology, Faculty of Natural Sciences, University of Guyana, Box 10-1110, Georgetown,  
Guyana –

email: [jccaesar@yahoo.com](mailto:jccaesar@yahoo.com)

In the age of the Anthropocene, humanity's global interdependence must provide a unique opportunity for efforts to mitigate and adapt to the looming catastrophic climate change and its consequence. Devastating impact of flash floods potentially induced by the changing global climate, has enjoined Guyana's policymakers in crafting a climate policy framework which recognizes the nation's major natural resource assets – neotropical Amazonian rain forest. The prime importance of avoided deforestation in a national menu of measures for mitigating and adapting to climate change has since been evolving. The policy capitalizes on the opportunities to advance an ecosystem approach acknowledging the provision of a plethora of forest ecosystem services that support and sustain the wellbeing of its citizens and more so its indigenous peoples who are more culturally-dependent on forest biodiversity and related services. The basis for this policy framework for adapting to and mitigating climate change is rooted in a Constitutional environmental ethos enjoining citizens to care for the environment. With a government white paper entitled "Creating incentives for avoided deforestation" subsequently articulated, a draft national Low Carbon Development Strategy has been launched with extensive public consultations as the nation's blueprint for climatefriendly sustainability supportive development. Guyana's avoided deforestation blueprint seeks to provide a model economic valuation construct for rewarding developing countries endowed with large pristine rain forests with the requisite economic returns on ecological services provided for climate change mitigation. In facilitating this global ecological ethic for climate change adaptation and mitigation, Norway has partnered with Guyana by committing to provide monetary rewards for the latter's avoided deforestation programme for sustaining neotropical forest ecosystem services for global common good. In tandem, this climate-friendly sustainability supportive policy partnership will provide additional resources alongside others to be leveraged for implementing a number of adaptation measures including sea defenses against sea-level rise and imminent threat to the very vulnerable and predominantly coastal population, infrastructure and economic activities. The concept engenders other types of sustainable economic development, minimizing deforestation and devolving to the well-being of local communities and indigenous peoples of both countries. Seemingly "blinkered" by business interest and an apparent lack of better appreciation for humanity's global interdependence and a national constitutional obligation to maintain the nation's ecological integrity, segments of the mining and forestry sectors appear temporarily oblivious to stringent regulatory oversight beyond pre-low carbon development strategy status quo. Extensive national consultations notwithstanding, the emerging political ecology landscape appears somewhat temporarily resistant to stringent enforcement of environmental and forestry regulations. Policymakers are intent on ensuring sustainable mining with minimal impact on forest ecological integrity including phasing out mercury use. Against this background we propose a biologist's perspective on the leveraging of best-practices in natural resource management conflict mitigation/resolution, aggressive, sustained public education and awareness. Better understanding of the negative impacts of unregulated mining on the environment and human and ecosystem health and well-being, institutional re-engineering, advocacy programme for climate change and conservation psychology and behavioural change within the context of socio-ecological governance are suggested as a national framework to weather the rising storm.

\*Versions of this were accepted for presentations at the IUFRO World Congress 2010, Seoul, Korea and the NCCARF2010 Climate Adaptations Futures Conference, Gold Coast, Queensland, Australia; but unfortunately the author could not attend either.

## **Caribbean Water Management – Does Climate Change Matter?**

*A. Cashman*

Centre for Resource Management and Environmental Studies, University of the West Indies, Cave Hill  
Campus, Barbados

[adrian.cashman@cavehill.uwi.edu](mailto:adrian.cashman@cavehill.uwi.edu)

For at least the last 30 years there have been some form of concern expressed over the status of freshwater availability in the Caribbean Region and in particular the Eastern Caribbean States. Whilst the Region as a whole exhibits high levels of coverage for access to water supplies and basic sanitation services there are increasing challenges in maintaining access, coverage and quality standards. In the face of population pressures, urbanisation, economic development and growth in tourism, pressures on water resources have increased significantly. Over the last several years there have been a number of reports that have identified the main water related issues facing the Caribbean. Some of the most frequently cited issues include (among others) the following: aging infrastructure, inadequate monitoring and data gathering, high levels of non-revenue water, poor governance frameworks, inadequate financing, poor cost recovery, pollution, flooding & droughts, intermittent supplies. A glance at the papers presented at the recent Caribbean Water and Wastewater Association Conference in Grenada confirms that many of these issues are indeed current and serious. It is interesting to note that although climate change is mentioned it does not feature to the same extent or indeed convey the same level of immediacy as those mentioned above. This is not because there is not an appreciation of the likely effects of climate change on the Region. Indeed the general regional effects have been identified. In spite of the focus of water sector professionals and managers appears to be on the here and now with little attention being paid to future planning, though there are some exceptions. Given the scale and range of challenges facing the water sector in terms of both service provision and resource management asking if climate change is that much of an issue is a fair question. This is especially the case given that hard decisions have to be made as to where to allocate scarce resources. However, the key to addressing the impact of climate change lies in tackling the exactly those issues facing the water sector. In this respect climate change represents an opportunity. There is a need to embed adaptation to climate change more explicitly within existing sector reform efforts. At the same time there is also a need for scientists and researchers to look at what the information needs of the sector are and to work together to ensure that the information is made available. Much more work needs to be done to identify, at the territorial scale, what the impacts of climate change are likely to be on water resources, on water service providers and on water users. Climate change does matter, but only if we can show that it does.

## **Net Zero Energy Building – a solution to energy inefficiency in the Caribbean**

*Professor Tara Dasgupta, President, CAS and Professor Anthony Clayton, FCAS*

The University of the West Indies, Mona, Jamaica

Buildings account for over a third of world total energy use and associated greenhouse gas emissions. Some 10-20% (depending on building type) of the total life-cycle energy consumed is used for the manufacturing and assembly of building materials, construction, maintenance, refurbishment and demolition. Some 80- 90% is used, over the life of the building, for heating, cooling, lighting and ventilation, house appliances and so on. It is therefore important to focus primarily on making buildings more efficient, so that they are easier and cheaper to heat, cool, light, ventilate and so on. The main demands in tropical and sub-tropical regions are generated by air conditioning, lighting, water heating and appliances. Highly energy-efficient solutions that can help to make houses more self-sufficient can be developed.

There are numerous opportunities for reducing energy consumption in buildings. Many of these have short payback periods, with both economic and environmental advantages. This raises important questions as to why standards of energy efficiency in buildings are still so low in developing countries. Some of the main reasons are as follows:

- There is an economic disconnect between architects, builders and purchasers. For example, builders have little incentive to construct efficient buildings if the benefits largely accrue to the occupants
- There is a parallel fragmentation of the building process. There is little incentive to integrate different building functions (planning, engineering, architecture, energy systems, use patterns and so on), even though the greatest efficiency gains require such integration.
- There are low levels of awareness and technical knowledge as to opportunities for cost-effective improvements.

As a result, architects under-specify and builders under-invest in energy-saving designs and materials. This market failure can be solved; the solution will require a comprehensive set of building solutions and incentives for innovation, awareness-raising measures, proper standards and rating systems, and various forms of market suasion, such as energy pricing and tax incentives for relevant investments. Recent research has established that it is now technically feasible to construct buildings with net zero energy demand. This involves a combination of very high levels of energy efficiency with photovoltaics and other energy-generating technologies used to meet residual demand, using smart grid (with a reversible meter) as back-up. Very significant efficiency gains can be made by introducing LED lighting and the use of wall coatings to control humidity, advanced appliances can now reduce consumption by over 90%, and solar-powered air conditioning units offer a highly cost-effective solution to humid, tropical climates.

## **THE NEED FOR PUBLIC EDUCATION IN COMBATING CLIMATE CHANGE**

*Joanne Chin Sang*

NIHERST, Trinidad and Tobago

It has been established that while climate change is a natural process, human activity has significantly accelerated the process during the last century. The implications for the Caribbean can be devastating, owing to a number of vulnerability factors such as developing status, heavy dependence on the coast and low adaptive capacity. Education has been identified as a key measure in combating climate change, and research in Trinidad and Tobago has shown that there is a deficiency in knowledge regarding climate change among the general public. It has been shown that responsibility for the environment increases with higher educational attainment. There is need therefore for public education and awareness so that people are able to better understand the reality of the climate change situation and actively contribute to efforts at mitigation and adaptation where possible. Education through the use of multimedia tools has been proven to be highly effective. The National Institute of Higher Education (NIHERST) in Trinidad and Tobago has therefore sought to impart such critical knowledge through the development of learning resources in the form of video documentaries, hands-on exhibits and an interactive DVD-ROM. Their aim is to make these tools available throughout the Caribbean region in an effort to empower citizens and transform their minds towards sustainable actions to combat climate change.

## **Patterns of biodiversity in Trinidadian spiders**

*J. N. Sewlal and A. Hailey*

Dept of Life Sciences, University of the West Indies, St. Augustine, Trinidad, West Indies.

[joannesewlal@gmail.com](mailto:joannesewlal@gmail.com)

Trinidad is a continental island, which was isolated from South America about 10,000 years ago. Habitat types on Trinidad and the fauna they contain are therefore representative of the northeastern part of the neighbouring continent. Trinidad's small size makes studies of its biodiversity more manageable which can be used to infer results about South American biodiversity, which is little-known for most taxonomic groups. For this study I looked at the biodiversity of three orb-weaving spider families, Araneidae, Nephilidae and Tetragnathidae, in natural habitats. This study also looked at how factors such as habitat classification and geographic location affected spider biodiversity. According to Beard (1946), the natural vegetation of Trinidad can be classified into six formations containing 16 habitat types. Data was collected using the visual search and sweep-netting methods at 46 localities throughout the island. Biodiversity was determined by examining the observed and estimated species richness, species distribution, distribution models and diversity indices between the formations and habitat types. It was found there was a high proportion of rare species, and species of intermediate abundance were also frequent. Spider communities found in Trinidad were simple in nature and their ecology governed by a single factor, canopy cover, which seemed to have an effect on biodiversity with respect to species richness, diversity, evenness and dominance. Formation had influence on observed species richness, species diversity and dominance but neither formation nor habitat influenced evenness. Geographic factors such as latitude, longitude and altitude did not influence diversity. It is unlikely that climate change will affect species diversity but it may have some influence on species composition; this analysis is in progress.