

## **Climate Change and the Caribbean – The Take Away Messages**

**Speech prepared for the Climate Engineering Conference (CEC17) by Prof. Michael Taylor, University of the West Indies**

The conversation about climate change in the Caribbean has in the past few weeks become significantly louder. This, after the passage of not one, but two category 5 hurricanes (Irma and Maria) through the tiny islands of the eastern Caribbean. It is not that the conversation was not happening before, however, Irma and Maria and the indescribable scenes of destruction left in their wake, have greatly amplified the discussions, making them audible alongside other conversations of immediate and pressing relevance to Caribbean existence.

There are two things that are striking about the ongoing climate change conversations in the Caribbean, post Irma and Maria. The first is the range of conversationalists. It's not just the regional climate scientist (like me) who would normally fight to get climate change mentioned as an issue for national consideration; rather the current voices include prime ministers and other government actors, the private sector, financiers, planners, disaster responders, sector decision makers, the media, public sector workers, children, adults, male, female and just ordinary people like you and me. That climate change has the sustained attention of so many is perhaps one 'good' thing that has emerged from a very bad situation. The second noteworthy thing is the range of topics being covered in the conversation. The conversation is not just limited to a description of the two storms themselves and their unusual features (e.g. ferocity, ability to maintain their intensity days on end, notable poleward tracks) or the devastation they have caused; rather the conversation has been extended to include past climates, future projections of climate, attribution (are humans really the root cause of the 'new breed of hurricanes'), losses, damages, recovery, global financing, restitution, adaptation, prevention (if possible), culpability, sustainable existence and goals, resilience and survival (to name a few). The range of the discussion is notable because it confirms that climate change is as much a science issue as it is a human one – at least in the Caribbean.

The challenge, then, is to see if there are key messages that can be distilled from the din of voices and range of themes which, perhaps after this hurricane season has lost its topicality, can later be drawn on as important lessons. Here are three simple '*Take Away*' messages, which I think the Caribbean and the wider global community can take away from the post Irma and Maria conversations about climate change i.e. when climate change is viewed through the lens of the Caribbean and considered in the context of the Caribbean reality.

### ***Take Away Message One: Take Notice – Our climate is changing***

One of the common threads of the conversation is the notion that our climate is just not behaving in the ways we are used to it doing. In the Caribbean, the available historical records support the intuitive conclusion. On the one hand, the number of very hot days in a year (days in excess of the 90<sup>th</sup> percentile) have steadily increased since the 1950s, as have the number of very hot nights, with the latter increase occurring at a faster rate than the former. Though rainfall records do not suggest an

overall drying or wetter trend, the character of rain is changing with an increase in both consecutive dry days and heavy rainfall events - so there are longer dry spells but when it rains it rains! Sea levels are rising at roughly the global average, taking with them valuable shorelines and beautiful beaches which are important to the tourism product of the region; and there has seemingly been an increase in extreme events including prolonged droughts, tropical storms and intense hurricane activity (though climate change may not be entirely to blame in the latter instance). In tandem, there seems indeed to be a strong case that there is something *unfamiliar* about climate today in the Caribbean.

The problem with '*Unfamiliarity*' in the Caribbean context is that daily existence is very sensitive to climate variations and as such is strongly dependent on '*familiar*' patterns of climate. It is fair to say that life in the Caribbean revolves around climate. On the one hand, daily existence is structured to take advantage of ambient climate conditions, so much of life by design or by default occurs outdoor. This makes the typical Caribbean farmer or tourism worker, sportsman, security personnel or even student among an emerging class of climate vulnerable in the new '*unfamiliar and unexpected*' environment of hotter temperatures. On the other hand, the economies of the region are premised on industries and sectors (e.g. tourism and agriculture) which are extremely sensitive to climate variations; as also are the regional quality of life indicators such as water availability and health and wellbeing. In a '*good*' climate year which follows expected mean patterns and pulls no surprises, there is favourable economic growth and noticeable improvements in standards of living (e.g. no water rationing and manageable dengue outbreaks). And even when the weather is '*bad*' there has up until now been a familiarity with the limits of how '*bad*' it can become, which is then accounted for. For example, as predominantly island states, most major infrastructure and population centres are inevitably sited only a few kilometres from the shore, making them highly vulnerable to extreme weather events. Up until now, especially newer regional infrastructure have largely withstood the ravages of hurricanes and tropical storms, as their design accounted for the upper boundaries of unfavourable climate deduced from past events.

The point is that as climate change seems to be quickly heralding in an era characterised by the *unfamiliar*, the strong '*sensitivity*' of a region like the Caribbean to climate (which in part defines the '*Caribbean*' way of life) is quickly being transformed into a '*vulnerability*'. If we allow this to go unnoticed it has the clear potential to significantly erode both Caribbean way of life and Caribbean quality of life. It is for this reason that I think the first simple *take away message* about climate change when considered in the context of the Caribbean reality is simply this: Stop. Take Notice - our climate is changing - and with that change comes the challenge of the '*Unfamiliar*'.

### ***Take Away Message Two: Take Account – Of the fact that our climate will continue to change***

The second *take away message* hinges on the scientific projections for the Caribbean under unabated greenhouse gas emissions which do not paint a pretty picture. In the absence of global action to drastically limit greenhouse gas emissions, the business-as-usual scenario suggests the following for the Caribbean by the end of the current century: The Caribbean region will warm a further 2 or 3 degrees C over the 1 C warming already seen over the last century, with up to 98% of all days being '*hot*' by current standards. Annual rainfall amounts will decrease by up to 40% and during the months when rainfall is normally expected, posing a significant challenge to already water stressed islands. Sea levels

will rise by 1-2 meters thereby far exceeding rise already recorded. And (frighteningly!) the frequency of tropical Atlantic hurricanes of the highest intensities will increase (though not necessarily the frequency of hurricanes overall). Cumulatively the science of projections suggests that the region's climate will be so significantly altered it will look nothing like anything we are currently used to, as it will be outside of the bounds of our lived experience to date. It will not just then be *Unfamiliar*, it is likely to be *Unprecedented*.

The problem with *Unprecedented* climate are the unprecedented resulting impacts which have the potential to not just erode Caribbean way of life, but rather to setback or defer Caribbean development dreams. With every facet of Caribbean life being so climate sensitive, every facet will also likely be impacted in significant ways. Perhaps this is the major climate change lesson from hurricanes Irma and Maria. Though the stocktaking is hardly complete, at least for Barbuda, Dominica and Puerto Rico the set back to their economies will likely be measured in years, as initial estimates for rebuilding are of staggering proportions. Perhaps even more heart-breaking is, however, the loss of those things that are economically unquantifiable – the drastic reductions in standards of living especially for the most vulnerable; the loss of irreplaceable culture and cultural assets; the mental anguish and loss of lives; the loss of biodiversity, and the undermining of achievements already made in the pursuit of sustainable development. Does this portend the future challenge that unprecedented climate change represents for the Caribbean region? Otherwise put, to not account for future climate change is to make mockery of the region's commitment to achieving the sustainable development goals, by making them unattainable as climate will keep pushing the goal post further away.

The point is that with climate change comes the potential heralding in of an era characterised by not just the *unfamiliar* but by the *unprecedented*. For the Caribbean, the need to account for the coming climate challenge becomes more acute if the rate at which the era of the *unprecedented* is being ushered in outstrips the rate at which the region can prepare for its onset. In that context, the dilemma becomes figuring out how to contend with the '*Unfamiliar*' now while preparing for the '*Unprecedented*' to come. The second take away message about climate change when viewed through the lens of the Caribbean and considered in light in the context of the Caribbean reality is pretty clear and is simply this: Take Account - of the fact that our climate will continue changing – for with it comes the challenge of the '*Unprecedented*'.

### ***Take Away Message Three: Take Action - Our climate demands change***

Finally, in light of the other two messages, the third *take away message* seems embarrassingly obvious. The *unfamiliar* demands we change our current attitude to climate (we must take notice of what climate is already doing), while the potential for the *unprecedented* demands we change our approach to development planning (we must take account for what climate can do). The third message demands, then, that the climate conversation moves beyond acknowledgement and consideration to action which is characterized by '*urgency*'. The need is for action and action now!

In the Caribbean, the action that needs to be taken becomes clearer with each climate change manifestation. There is the need to explore now mitigation - options to reduce greenhouse gas

concentrations - including the use of renewable energy, targeting forests reserves and tackling waste. These all represent win-win considerations for the Caribbean even if there were no climate change. There is the need to implement appropriate adaptation strategies aimed at reducing the climate sensitivity of critical sectors and areas of life - in particular targeting water availability in a future of less rainfall, sustainable agriculture in harsher physical environments, tourism which benefits from but is not entirely dependent on natural assets, health which is more resistant to climate variations, and coastal infrastructure which can withstand unprecedented weather extremes. There is also an immediate need for enhanced public education about climate change and its impacts which targets knowledge sharing and behavioural change and which uses all fora possible to reach all ages possible. In tandem it is these actions which will lead to a climate resilient Caribbean.

Yet, even if the region had all the necessary resources to take all these actions, in the end its future viability will be, to a large extent, premised on collective global action which drastically and quickly reduces greenhouse gas emissions thereby delaying the worst impacts of climate change. It is here that the challenge of *urgency* comes into play. It is for this reason that the Caribbean and other small island and developing states have argued for 1.5 degrees to be the limit of mean global warming in this current century (using the slogan 1.5 to Stay Alive). There is need to act on this now if it is to be at all achievable. Of course, whatever global action is taken in this regard, must bear in mind the inequities of the past that have gotten us to this point, and so must be guided by some principles including (but not limited to) being: impactful but sensitive, transformative but just, acknowledging both responsibility and responsibilities, being inclusive and not prescriptive, and being timely but not imposed. It is within these boundaries that the discussions of this conference must take place.

When climate change is, however, considered in the context of the Caribbean reality, the third take away message is simple and it is this: Take Action – our climate demands change. We must respond to the challenges posed with '*urgency*'.

In closing, I note that what is driving the conversations of climate change in the Caribbean presently, now that Irma and Maria have passed, is a regional sense of unease because there are still two months to go in the current hurricane season and therefore the capacity exists for it to be even more record breaking than it has already been. When climate change is viewed from the lens of the Caribbean and in the context of the Caribbean reality, the lessons seem pretty clear. For the Caribbean, it is that the *unfamiliar* is already a challenge, the *unprecedented* will likely be too much of a challenge, and so global *urgency* in purpose and action (that goes even beyond the Paris Agreement) is our only real hope.

Here are three take away messages about climate change emerging from Caribbean contemplations on the issue, which I think have relevance for everybody: Take Notice – our climate is changing; Take Account – of the fact that our climate will continue to change; and Take Action – our climate demands change.