

**ADDRESS
AT THE GRADUATION CEREMONIES
UNIVERSITY OF BELIZE
JANUARY 26, 2013**

By

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Today I have been asked to address you on the challenges of Climate Change for Belize. In noting the Theme for your Commencement Exercise - "*Get Involved ... UB is for all of us*", I hope that at the end of my address you would have been sufficiently inspired to make a decision to become involved in finding solutions to the increasing problems Climate Change will exact on businesses, infrastructure and communities as a whole in Belize, since Belize is for all of us.

We are all aware that Belize is not isolated and what goes on around us will influence what we do and how we respond to these challenges. It is, therefore, fitting that I start with the global environment of which Belize is a part.

Over the last few years the world, and certainly our region, has been faced with one crisis after the other. Economies are in trouble. Confidence in business, in markets and in governance systems has eroded. People everywhere worry about their jobs and struggle to survive. Yet amid these difficulties, we face another crisis – Climate Change. Signs of the change in the climate have become increasingly evident, and are global in scope and yet after twenty years of negotiations little has been achieved in implementing actions that would make a difference globally. Climate Change and its adverse effects threaten all our goals for development and social progress. Indeed, it seems to threaten the very existence of the planet as we know it. On the other hand, it also presents us with a golden opportunity. By tackling Climate Change head-on we can reduce or eliminate many of our current problems, including the threat of economic stagnation.

Climate Change is a complex phenomenon, which, although environmental in nature, has consequences for all spheres of existence on our planet. It either impacts on-- or is impacted by-- the social, physical, economic and political environments. It is, therefore, not surprising, that possible solutions must come from all disciplines and fields of research and development.

Graduands you stand at a crossroad. You can choose the easy path of doing nothing and follow the business as usual approach, or you can seek ways of

using your training and newly acquired knowledge in supporting and enhancing sustainable development through cooperation and partnership with your community and the country at large.

If you and the University of Belize are to make a difference in helping Belize in its quest to address the impacts of Climate Change and Climate Variability, it is incumbent that you familiarize yourself, if you have not already done so, with some of the critical issues of, and threats posed by, Climate Change to our society.

For those of you already familiar with the issues I beg your indulgence. For the others I will take this opportunity of highlighting a few of the numerous issues. In pursuit of our well-being, humankind influences and at the same time responds to climate variations. The influence of people on our climate started with the industrial revolution some two hundred years ago through the burning of fossil fuel for the provision of energy. The burning of fossil fuel results in the emission of greenhouse gases such as carbon dioxide and methane into the atmosphere. There is a strong correlation between the equilibrium temperature of the atmosphere and the concentration of carbon dioxide (CO₂) found there. Since the start of the industrial revolution the CO₂ concentration has been steadily increasing.

As a result, at the very heart of the ensuing minimal rise in the atmospheric temperature above the pre-industrial level lies the need to reduce carbon dioxide emissions. In 2010 at the United Nations Framework Convention on Climate Change (UNFCCC) Meeting in Cancun, governments agreed that emissions need to be reduced to a level that would cap global temperature increases to below 2 degrees Celsius. At that time the Alliance of Small Island States, of which Belize is a member advised that any rise in temperature above 1.5°C would seriously affect our survival. The latest scientific reports support this view as well.

During the past decade the increase in carbon dioxide concentration in the atmosphere has accelerated, and the science suggests that by the year 2100 there can be a global temperature rise in excess of 3°C if the business as usual trend continues. During the past one hundred years the global average temperature has already increased by almost 1°C.

Let's look at how a less than 1°C rise in temperature is already impacting the world. Globally, Climate Change has been manifesting its impacts in a number of ways. The following list is not exhaustive but is indicative of some key impacts:

1. Increased frequency of extreme events such as floods, droughts, changing weather patterns, more frequent and out-of-season tornadoes and tropical cyclones. These events are all consistent with predictions of the warming of the atmosphere.
2. Salinization of coastal aquifers due to sea level rise

3. Increasing loss of biodiversity including extinction of species at an ever increasing rate
4. Increasing threat to global food security and water availability
5. Phenological changes

There are also three very important points that must also be considered when addressing Climate Change:

Firstly, It should be noted that once CO₂ is emitted into the atmosphere it resides for about 200 years. Hence the observed rise in temperature today is a consequence of CO₂ emitted at least 100 years ago. It is unlikely people my age will be alive to see the effects of today's emissions, but you and your children and grand-children will be alive to experience the effects.

Secondly a significant portion of CO₂ emission is due to the use of fossil fuel (coal, diesel, gasoline, etc) for electrical energy generation and transportation. The use of alternate forms of indigenous renewable energy such as wind, solar, geothermal, bio-mass, hydrogen cells can be used to gradually replace fossil fuels.

Thirdly the 2008 spike in oil prices resulted in most CARICOM countries having to expend near 50% of their foreign exchange earnings to purchase fuel.

The continued rise in temperature and accompanying sea level rise mean adaptation is an imperative for our region. An increase in temperature greater than 1.5°C will cause serious socio-economic problems in most developing countries. The more than likely higher rise in excess of 2°C would be even more catastrophic.

The process of adaptation will be very costly for developing countries. Estimates of the level of funding which will be required for assisting developing countries in managing the impacts of Climate Change vary widely and are determined by geographic location and physical features of the country. There is general consensus, however, that the cost to the public and private sector will be tremendous and could be in the range of tens of billions of dollars per year.

Adaptation in Belize will require a transformational change in the way things are done by all of us - individuals, communities, policy-makers, the private sector, NGOs and civil society. To better appreciate the need for a transformational change from the business as usual approach, let's look at what is already happening in Belize.

We have been experiencing the same types of Climate Change impacts as the rest of the world. However, because of our low population density the impact of extreme conditions, even though their frequency has increased, are not as visible

or pronounced as seen in some of the more densely populated areas. The events sometimes occur in unpopulated areas and are not observed or reported. Some of them are noteworthy.

1. The coastal community of Monkey River has been experiencing extreme coastal erosion for the last two decades. Residents have observed within their lifetimes the loss of the beachfront where they or their parents held functions such as weddings.
2. Similarly, we have seen serious degradation in our coral reef system due to warmer sea temperatures, mechanical damage from tropical cyclones, and sedimentation caused by more frequent and intense flooding.
3. Coastal aquifers are being compromised by over abstraction and sea level rise. Remedial measures such as the installation of reverse osmosis systems in San Pedro and Caye Caulker have been required. The same has occurred in Placencia where piping water under the lagoon from Big Creek is the method of supply.
4. Abnormally warmer conditions in 1999 and 2000 resulted in a pine bark beetle infestation which destroyed 75% of the pine forests in the country.
5. When the heavy rains returned a few years later the denuded soil was unable to absorb the excess water and led to one of the most devastating floods in the Stann Creek District claiming lives, destroying homes and washing away bridges. A permanent bridge was finally installed last year.

These conditions can only be further exacerbated by the further warming of the atmosphere and oceans,

As was said earlier adaptation is an imperative for Belize and every sector of our society must be involved.

I will start with the role of the individual and specifically you the graduands. Graduands, your role must be both personal and professional.

1. In your personal day-to-day activities at home and work ensure that water and electricity are used in as efficient a way as possible. Minimize on the use of personal transportation and where possible use the concept of multiple-occupancy. These, not only make good personal economic sense but also good economic sense for the country. They also help in reducing the country's balance of payment through reduction in the expending of already valuable foreign exchange earnings that can be used instead in the local adaptation development programme. Simply put you would not be contributing to the CO₂ phenomenon.
2. Professionally you should follow a code of excellence and apply your training accordingly with a view of contributing to the country's long-term

strategic development and adaptation programme. Today most of you complete the first phase of your professional development. Some of you will continue to pursue further studies. Those of you joining the labour force, I implore you to be the agent of change for Climate Change adaptation in your organization. Take the opportunity to demonstrate that greening of the work environment will be reflected in an improved bottom line of the organization and at the same time contribute to the reduction of greenhouse gas emission.

This brings me to the role of the University. Even if Belize receives the financial support from the international community to finance its adaptation initiatives, it will need to improve, among other things, its institutional and technical capacity to be able to absorb and implement the required adjustments in areas such as:

- i. Coastal and marine infrastructure
- ii. Watershed monitoring and environmental control
- iii. Renewable energy and energy efficiency
- iv. Eco-system monitoring and adaptation
- v. Tourism
- vi. Agriculture and agro-industry

The University of Belize must play two critical roles in the adaptation process.

The first role of the University is to ensure that it provides the country with the academic and technical leadership needed to address Climate Change-related issues. This can be done through innovative, interdisciplinary approaches in its research and academic programmes. It should ensure that its work is aligned to the country's strategic development program. Its long-term strategy should include:

- Building a collaborative community of Climate Change scholars across the University via seminars, symposia and other internal events
- Developing research aimed at tackling critical Climate Change issues, through stimulating interdisciplinary work and enabling new and innovative approaches, supported by significant new external funding
- Making courses relevant and creating exciting, pertinent climate-oriented courses at undergraduate, post-graduate and professional levels
- Providing policy-relevant advice to the Belize Climate Change initiatives, supported by its expertise through ongoing research
- Communicating the activities and outcomes of the University Climate Change community to a wide range of audiences locally, nationally and internationally.

The second role of the University is in supporting the implementation of the *Regional Framework for Achieving Development Resilient to Climate Change*.

In July 2009 the CARICOM Heads of Government endorsed a Regional Framework for Achieving Development Resilient to Climate Change (2009 – 2015) and the Implementation Plan (2012 – 2021) in March 2012. Both the Framework and its Implementation Plan detail specific roles for regional institutions such as the University of Belize. Staff from UB contributed to the development of the Implementation Plan. UB should now ensure that its courses and research programmes provide Belize with a cadre of experts who will be able to further support the Implementation Plan. UB will be called upon once again to contribute to the review process.

In the Framework four main areas for involvement and effort are identified. These include:

- mainstreaming Climate Change into the sustainable development agenda and work programmes of public and private institutions in all Caribbean Community countries at all levels;
- promoting systems and actions to reduce the vulnerability of Caribbean Community countries to global Climate Change wherever possible;
- promoting measures to derive benefit from the prudent management of forests, wetlands, and the natural environment, in general, and to protect that natural environment; and
- promoting actions and arrangements to reduce greenhouse gas emissions, including those aimed at energy-use efficiency by increasingly resorting to low-emission renewable energy sources.

The Implementation Plan of the Framework is a living document that will be revisited every two years or as conditions dictate. It provides the process through which the framework will be implemented during the period 2012 – 2021.

In describing the role of the Private Sector, a recent article in Forbes Magazine entitled – *Climate Change is here. How Companies are preparing is illustrative.*

The article begins by saying:

“The climate is changing and impacts on businesses and communities are already being felt. Rising temperatures, changing rainfall patterns, and more severe weather events are being observed. Nine out of ten companies have suffered weather-related impacts in the past three years, and most have seen an intensification of such impacts. Meanwhile, communities on which businesses depend for their supplies, workforce, sales, and more are being affected. A change in climate will lead to a changing business environment and changing community relationships...”

The private sector in Belize would be advised to start thinking about their assets and how Climate change may impact them.

Before closing I would like to read an extract on Climate Change as enunciated by President Obama in his inaugural address on Monday last: - *We, the people, still believe that our obligations as Americans are not just to ourselves, but to all posterity. We will respond to the threat of Climate Change, knowing that the failure to do so would betray our children and future generations.*

Some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires, and crippling drought, and more powerful storms. The path towards sustainable energy sources will be long and sometimes difficult. But America cannot resist this transition. We must lead it.

Students, as you move on to various other pursuits in life, whether continued academic achievements or entry into the world of work, you must ask yourself the question. What does all of this mean to me? Here I mean not only what you have gleaned from the University over the past few years, but also from the information that I have provided you today? And since we all know, we cannot escape the clutches of Climate Change, your challenge to yourself must be, “What will I do about it?”

The key element of change is yourself. The attainment of resilience cannot only reside with our policy-makers, but with our youth, and you represent that element. You first must be convinced; you must believe; you must be aggressive; you must be passionate; you must be committed to the cause to help our beloved country survive the ravages of Climate Change. You represent the next generation and the challenges you will face may be even greater than the ones we face today. That is a reality!

It is imperative you be prepared to face those challenges head on, and the only way to do this is to arm yourself with the knowledge. That must become your only weapon.

You will leave here today with a sense of relief that one chapter of your life is complete. You are about to turn the page to whatever you have planned or whatever life throws at you. As I wish you every success in your life’s journey, always keep in the forefront of your minds, that you have an obligation to your country, and a life-long commitment (and opportunity) to honouring that obligation.

Congratulations and the very best wishes in all your future endeavours.