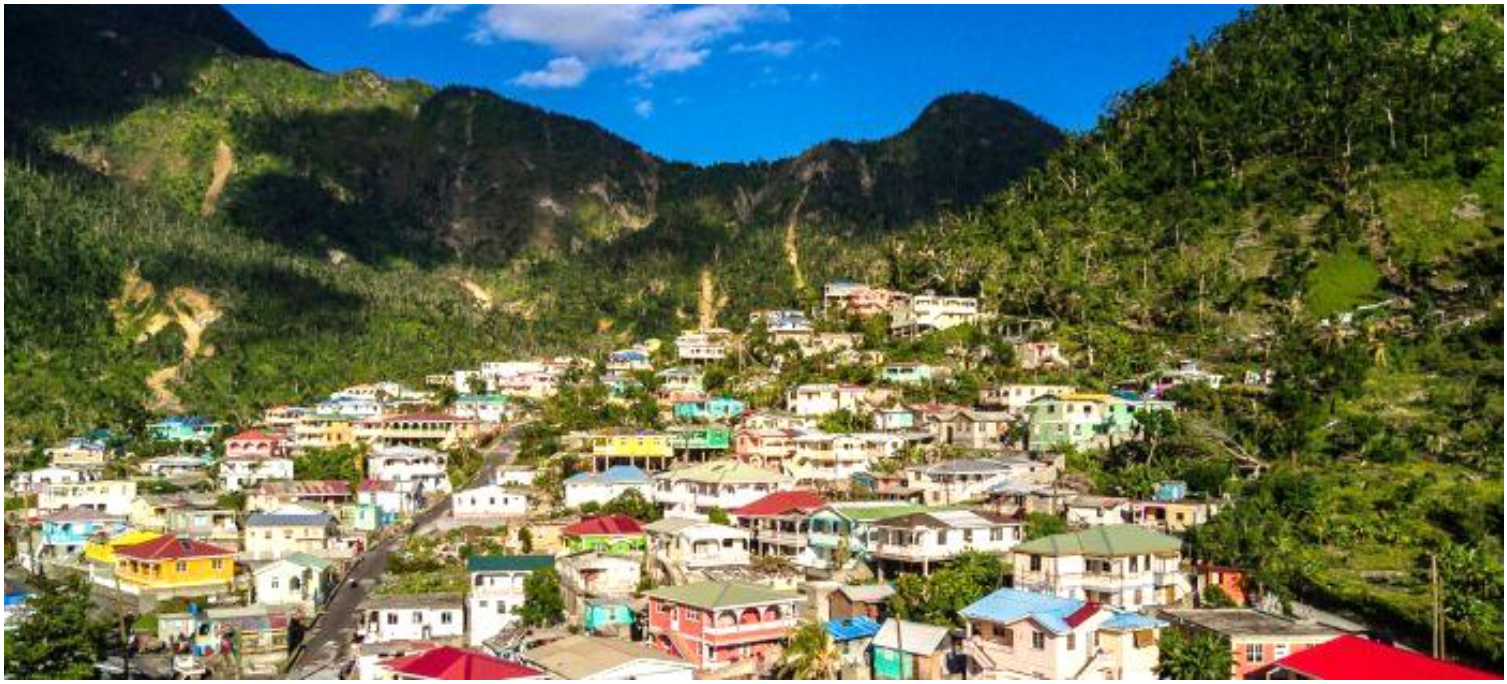
The Social Construction of Systemic Risk: Towards an Actionable Framework for Risk Governance

COUNTRY CASE STUDY: DOMINICA

United Nations Development Programme



This case study is one of five case studies (Bangladesh, Colombia, Dominica, Uzbekistan and Zimbabwe) to examine distinct aspects and expressions of systemic risk. It was prepared to inform the UNDP Discussion Paper "The Social Construction of Systemic Risk: Towards an Actionable Framework for Risk Governance" (June 2021).

INTRODUCTION

Dominica is an island of 750 square km in the Caribbean. Ceded originally to Britain in 1763 from France (then, after a short reversion of this agreement, finally ceded in 1783), converted into a colony in 1804 and gaining full independence in 1978 the country has a total population of near to 73000 and its capital town Roseau lodges some 15000 of these. Near to 21 percent of the population is under 15 years old and sixty five percent of the population is urban. Population density is 105 per square mile on average. More than 150000 Dominicans live abroad, known as the diaspora community. Today there is a 3000 strong indigenous population of original Carib ethnicity- the Kalinago. The general population is of mixed origins but dominantly black. Eighty percent are Catholic (2011, Census).

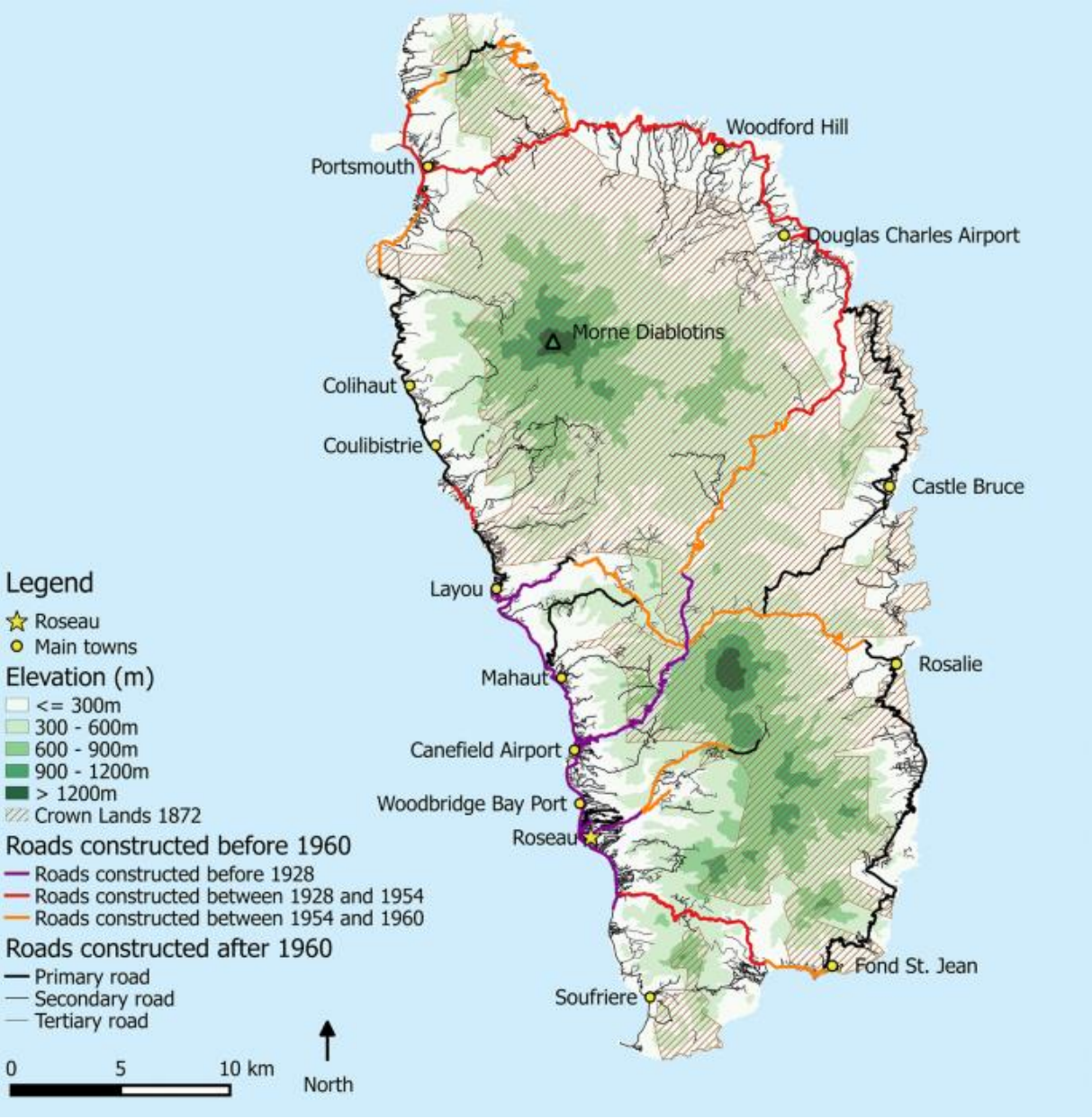
Volcanic in origin, 365 rivers flow from the central volcanic mountain axis, of which Morne Diablotins (1447 m) is the highest point. The country is 42 km north to south and has 145 kilometers of coastline. Seventy percent of land is not useable agriculturally due to slopes, water logging and flooding.

With a parliamentary Westminster type democracy, a President and Prime Minister and single legislative chamber, the country has an extensive decentralized system of municipalities for bigger towns (3) and over 50 village councils. Widescale decentralization of education, health, energy, water and drainage services exist.

Colonial goals of exploitation and gain guaranteed population and production location on easier to protect sea-bord sites with easy communications abroad. Today 90 percent of the population is located on the seaboard. This differs from the earlier pre-colonial indigenous locations in more dispersed, sheltered and hurricane protected spots, demonstrating a well-developed understanding of geography, hazard and opportunity according to their culture, aspirations and history (see Barkley et al., 2019).

Dominated by changes in agricultural exports over the centuries (coffee, cocoa, limes and bananas), the more recent dominant banana production was severely affected by the elimination of EU preferences in the 1990s and a down-fall on exports led to severe financial restrictions. Niche agriculture opportunities are now sought. Small scale garden agriculture is today an island mainstay but for home consumption, while financial services and tourism and export of certain goods like petroleum, building materials, pasta and artisan products comprise the 'export' market.

Figure 1: Map of Dominica (Source: Caribbean Handbook on Risk Management (CHARIM) Geonode for Dominica (http://charim-geonode.net/) and Reading (1986), published in Barclay et al. 2018).



With a total GNP of near to a billion US dollars and per capita income of near to 3000 the country is 94th in the HDI with a score of .742. With 30 percent poverty and 23 percent unemployment rates inequality is on the rise. The small size and developed national identity have resulted in a country that justly prides itself on its traditional levels of social capital and the collective help and support for others, a context said to be in decline due to modern attitudes to wealth and society. Remittances from the diaspora community and a citizenship for investment program are important contributions to national investment and livelihoods, especially as regards housing.

It is possible to refer to Dominica in terms of before and after Hurricane Maria, in a similar way as Central America before and after Hurricane Mitch (1998). The dramatic impact of this singular event, and the climate change and climate variability it has been associated with, has led to the present concerns and approach to development in the frame of post impact recovery and reconstruction. Resilience, disaster risk reduction and environmental sustainability are paramount concerns in the new development plans and strategies. In a country where the impact was equivalent to the loss of over 220 percent of GDP, 90 percent of the population were directly affected, 80 percent of housing stock was destroyed or highly damaged, along with roads, energy and health, ports and other critical infrastructure, this is not surprising and offered a singular window of opportunity and incentive for promoting new thought and action on resilience and systemic risk.

Hurricane Maria has incited much support from external development agencies from the UN and country governments as well as NGOs. Avoiding the failings of post Mitch reconstruction and transformation thought and action in Central America, where international support was widescale and significant economically, will be critical in the search to make the island the first climate resilient nation in the world.

RISK, DISASTER AND CRISIS

The Hazard

The 2018 post-Maria 'National Resilience Development Strategy Dominica 2030' that guides current thought on development at the national and local levels states "*Vulnerabilities include not only economic shocks but also the impacts of climate change and climate variability, creating the need to build resilience in the management of the country*" (p. 21).

The reduced size (a little under a billion dollars GNP) and limited diversification of the Dominica economy with an underdeveloped export market, along with over 30 percent poverty and 10 percent indigency rate, and a worsening Gini coefficient, all compensated in some measure by a large inflow of diaspora capital in the form of remittances, signifies the island is highly vulnerable and susceptible to shocks and crises of differing types, exogenously and endogenously generated.

Persistent impacts from hurricanes and hydrometeorological events in general over the centuries have been complemented with occasional seismic and volcanic activity. Prior to Hurricane Maria the most recent impacts can be seen in the following three diagrams taken from the recent, 2020, Dominica Climate Resilience and Recovery Plan (CRRP) 2020-2030 (Government of the Commonwealth of Dominica, 2020, p.7 and 9).

Figure 2: Impact of climatic shocks in Dominica, 1979 to 2017

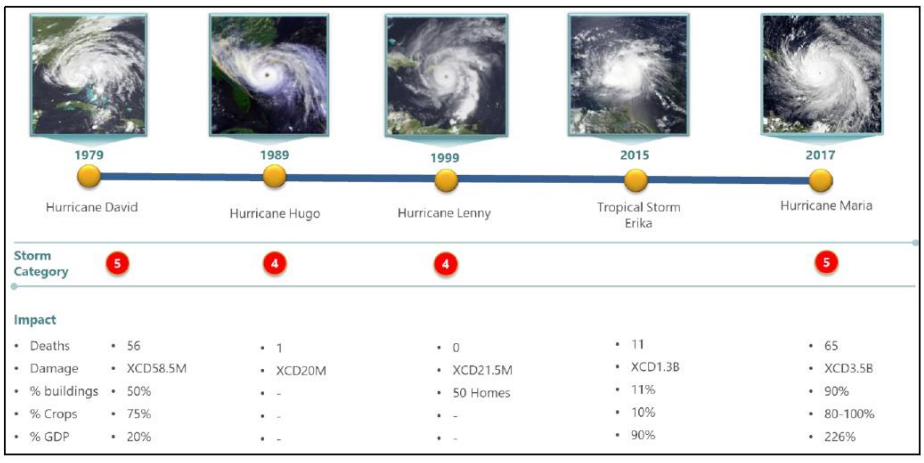


Figure 3: Impact of climatic events in Dominica in terms of GDP growth

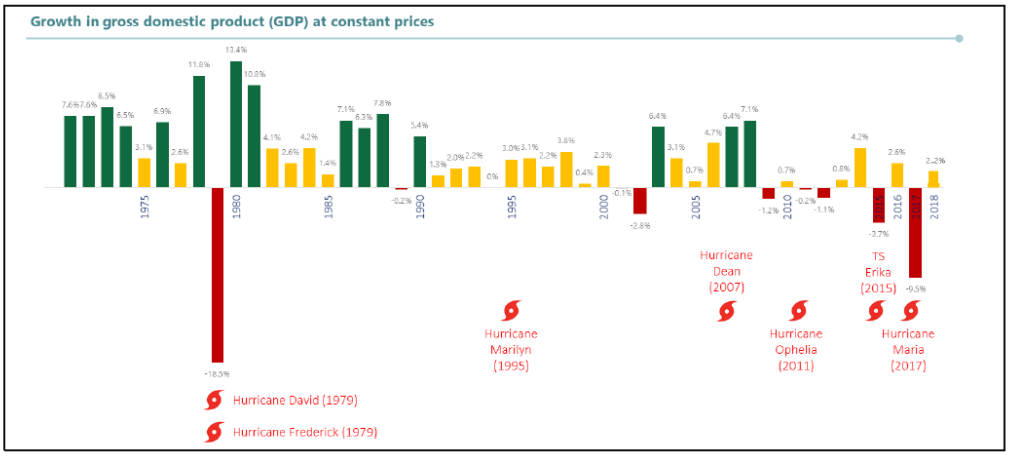
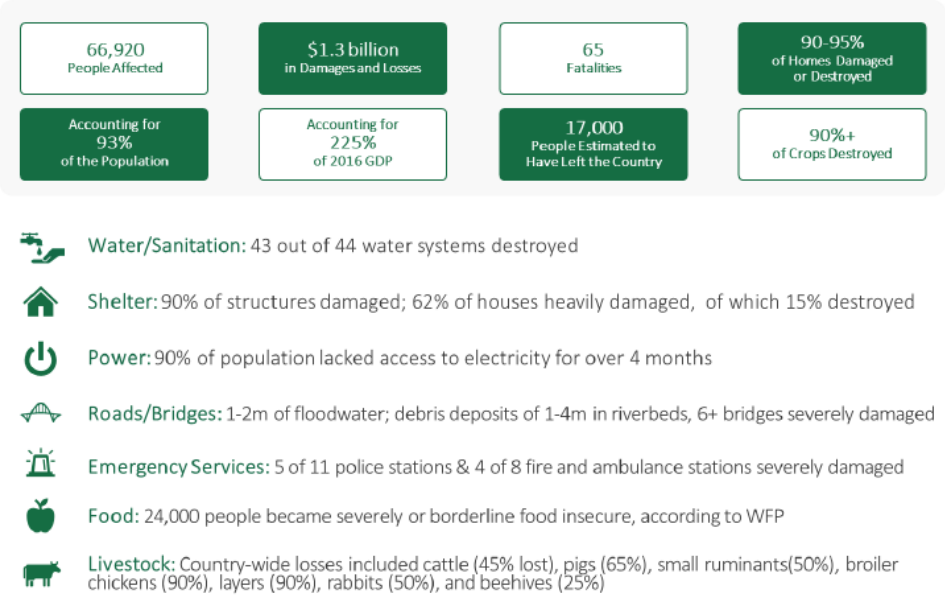


Figure 4: Direct impact of Hurricane Maria in Dominica



Hurricanes Dean, Tropical Storm Erika and the magnum Hurricane Maria that affected Dominica in 2007, 2015 and 2017 respectively, were calculated to have led to a decrease of 58, 90 and 224 percent of national GDP, and the latter two affected, directly or indirectly, 10 and 80 percent of the population. This occurred in a period of only 11 years. Dean and Erika occurred two years after the Hyogo and Sendai risk reduction agreements were signed and Erika the same year as Sendai. The location of 90 percent of the population on hazard prone coastal areas or riverbanks, plus the high concentration of infrastructure and housing in the same zones makes hazard exposure a critical risk factor when combined with high levels of structural and non-structural, social vulnerability.

As recovery moved forward from one natural event, a new event occurred, ever greater in its impact. The Post Disaster Needs Assessment (PDNA) post Hurricane Maria estimated an increase in poverty to 42 percent, and 24000 people on the border line of food deprivation out of a country total of 74000.

Following these hurricanes, increasingly 'normal' occasions for the islands, the COVID 19 pandemic had dramatic effects, not because of direct impacts and losses (only 120 persons infected and zero deaths) but rather due to the collateral effect of the shutdown of source and demand of the country´s economies and its impacts on travel and tourism, including the cruise industry and music festivals. The impacts resonate those on many Small Island Developing States in the Caribbean, Indian Ocean and Pacific.

Both types of event accompanied by other crisis and disaster expressions (the financial crisis of 2007-10 led to negative growth rates for three years-2009-2011) are more and more prevalent and comprise both direct asset loss and the accompanying ripple effects on economy and society.

From Hazard Interpretations to Social Construction of Risk

Scientific analysis now places equal if not more attention on the social conditioning and construction of risk as opposed to dominantly hazard based explanations reflected in the very notion of 'natural disaster'. That is, the ways society through its skewed development processes, perceptions and relations with the environment are dominant factors in creating conditions for risk, and finally for disaster to occur.

In relation to the theme of systemic risk and governance, recognition of the social construction process and the complexity and interrelationship of hazard factors both require systemic approaches and viewpoints, and these are critical for the advancement of intervention to achieve risk reduction and control.

The most complete analysis of the process of risk construction such as in Dominica is offered by Barclay et al. 2019, in a multi-disciplinary approach to understanding the historical evolution of risk and disaster on the island. The authors provide a detailed analysis of how disaster events and external crises or trading decisions have over time seriously affected the Dominica economy and the different mono agricultural production regimes associated with coffee, cocoa, limes and bananas. Moreover, they show how different economic and political decisions pre, during and after the colony led to the dominant occupancy of hazard prone coastal areas by rich and poor alike, with a concentration of investment in these areas. Evidence is provided to illustrate how original Carib-Kalinago population distribution helped ameliorate storm impacts and were in fact copied by early colonial settlers until commercial large-scale plantations came to be and altered the pattern. Early ignorance of indigenous practice and new land use patterns and building led to increased early hazard proneness, but in the late 17th century building schemes took another route towards lesser vulnerability. Understanding of hurricane and rain patterns was achieved in the 17th century.

The difficulties in creating a small holder class and occupation of inland areas are also discussed in the study and with it the deficit in road infrastructure serving the interior of the island. The 1950s and 60s saw an increase in road construction and the opening-up of internal areas for small-scale croppers. But this construction in a time of low hazard occurrence (the cyclical higher incidence of hurricanes in the Caribbean with a return period between 50 and 70 years is a known feature) led to deficient construction and severe difficulties in maintaining roads when faced not only with large events but also smaller more recurrent ones associated with extensive risk.

Some drivers of risk and crisis (hazard, exposure and vulnerability) are related to the insertion of Dominica in the world economy and the effects that change at this level have on the island. Others are borne in the history and physical reality of the island, its society, culture, economy, spatial patterns, and social practices. From a systemic risk perspective, understanding of causality requires an understanding of the linking of externally induced conditions and internally molded circumstances and this is important in understanding how risk has been constructed, thus offering a basis for reduction and control in the future, as well as control over the systemic effects of events once they occur.

As Barclay et al. 2019 conclude "*across the Caribbean, a series of shortsighted policy and investment decisions have led to an accumulation of exposure and vulnerability to hazards in these islands. High levels of debt and dependency on external finance, economic instability, insularity, remoteness, and environmental fragility limit the development potential of small Caribbean islands, as do the repeated and devastating impacts of disasters*".

Recognizing the double and complementary nature of possible enquiry as regards systems, systemic process and risk construction and disaster impact it is necessary to recognize that most analysis available concentrates on direct asset and human loss and damage once an event occurs and not on systemic, ripple effects. The PDNA post Hurricane Maria highlights such aspects, as does the resilient Dominica strategy. Systemic risk is not mentioned explicitly in any of these documents and the externally and internally generated ripple effects and their importance for welfare and sustainable development are rarely mentioned as such.

GOVERNANCE FOR RISK AND CRISES

The parliamentary basis of government, the high level of decentralization of much service provision, the strong basis of social capital and the government commitment post Maria to a sustainable, climate resilient model of development have been mentioned previously in this document. All these characteristics are essential for the development of an understanding of the systemic aspects of risk and their governance.

Hurricane Maria led to the immediate commitment of the island´s government to a new resilient future and making the island the first in the world that is climate resilient.

The Prime Minister in his address at the CARICOM-UNDP Conference in New York on 21st November 2017, post Maria, stated: "*The unprecedented challenge we face has led us to take the unprecedented decision to build an execution agency outside of our standard public service systems. We are calling it CREAD - Climate Resilience Execution Agency of Dominica. The mission of the agency will be to coordinate all reconstruction work to avoid duplication, maximize economies of scale, spot and fill critical gaps, avoid bureaucratic infighting and ensure all reconstruction activities are focused on a single Climate Resilient Recovery Plan developed by Dominica and its partners*". The island thus became the first to commit to a climate resilient development model.

The establishment of CREAD, backed by a new 2018 environmental law, was immediately made effective and led to the development of the National Resilient Development Strategy in 2018 and the operational, 2020 Dominica Climate Resilience and Recovery Plan 2020-2030. These documents followed and substituted earlier pre-hurricane, but post financial crisis impact plans, known as Growth and Social Protection Strategies (GSPS), four of which had been produced between 2002 and 2014, and the last for the period 2014 to 2018. These built on Dominica's 2012 National Climate Change Adaptation Policy and the Low Carbon Climate Resilience Development Strategy by integrating climate resilience and disaster risk management into the national growth and development planning framework.

Whereas many of the same goals for economy, society and infrastructure can be found in the pre and post Hurricane Maria plans, those post Maria are notoriously richer and more directed by climate change, resilience and sustainability criteria and approaches, topics mentioned but never given priority pre-2018.

The crisis and disaster risk related approach to development is clearly articulated in the following statement from the National Resilient Development Strategy (NRDS): "*This document (the first GSPS, 2004-08) and the three iterations which followed were crafted in an environment of economic turbulence and uncertainty locally, regionally and internationally. Locally, the country grappled with its own economic crisis which necessitated a structural adjustment program of the International Monetary Fund-(IMF) between 2002 and 2006. More poignantly, on an international level, all countries faced the effects of the most turbulent global economic and financial crisis in 2008 with many states being on the brink of bankruptcy. In addition, there was a period of rising world prices predominantly driven by rising oil prices*".

And" *there are some imponderable factors or risks that may hinder NRDS progress, such as: expected resources not being available; spikes in global oil prices which will push inflation up; regional and international political instability; trade barriers not being brought down at the required time frame; outbreak of diseases and natural disasters, both climatic and non-climatic*" (pp14-15).

Approaches that consider reduction of damage to assets plus increased response and recovery capacities and resilience seen in terms of secure infrastructure, housing and assets dominate the post-Maria schemes in general with little explicit consideration given to systemic aspects, including risk, although these are implicitly considered (Sendai gets a passing mention in the latest plan and the systemic and multi-hazard notions developed in Sendai are not elevated to any significant, explicit position).

On systemic thought and planning principles and the endogenous creation of risk, the NRDS establishes that *"government is aware that climate change will affect many different economic sectors both directly and indirectly, and the characteristics of our social and economic systems will play an important role in determining their resilience, amidst other development challenges. Therefore, addressing climate impacts in isolation is unlikely to achieve the desired equitable, efficient or effective outcomes of Small Island Developing States such as Dominica*" (p13).

The NRDS stipulates that, at the highest level, the Climate Resilience and Recovery Plan should reflect **three pillars** of resilience, namely: (1) Climate Resilient Systems, (2) Prudent Disaster Risk Management Systems, and (3) Effective Disaster Response and Recovery" (p ii).

Pillar 1, Climate Resilient Systems, covers a wide range of systems and processes that must have the capacity for adjusting to, and absorbing the impacts of climate change.

Pillar 2, Prudent Disaster Risk Management, focuses on minimizing and managing, the risks associated with climate-related disasters. This involves the development of a strong evidence base for decision-making.

Pillar 3, Effective Disaster Risk Response and Recovery, speaks to the post-disaster phase, minimizing disaster impacts and reducing the pain and the period of recovery. pp. ii-iv

The CRRP expands these three pillars into **six results areas** for a climate-resilient Dominica, namely:

1. **Strong Communities**, which have the capacity to absorb stress or destructive forces through resistance or adaptation; the capacity to manage or maintain certain basic functions and structures during disastrous events; and the capacity to recover or 'bounce back'. Strong Communities focuses on key elements such as adequate access to shelter, food, water, power, telecommunications and other basic services, social cohesion, disaster preparedness and responsiveness.
2. **Robust Economy**, which has ability to limit the magnitude of immediate production losses for a given amount of asset losses and the ability to reconstruct and recover quickly. Robust Economy focuses on key elements such as access to skills, access to finance, diversification of revenue streams, and risk transfer.
3. **Well-planned and Durable Infrastructure** ensures that critical physical infrastructure can absorb shocks or can fail safely. A resilient infrastructure system has redundancy, duplicating critical components allowing for back up or continuity.
4. **Enhanced Collective Consciousness** speaks to mind-sets and behavior (spiritual, theological and culturally inclusive) that underpin respect, dignity and peace among all citizens, ensuring that no one is excluded or left behind. The key elements of focus include valuing national resilience and respect for people and environment.
5. **Strengthened Institutional Systems** defined as the ability to effectively and efficiently deliver on Government's comprehensive socio-economic development mandate, and to continue to operate during and in the aftermath of a disaster. The key elements of focus are data and decision-making protocols, policies, strategies, procedures, skills and resilience-linked budget-setting and performance management.
6. **Protected and Sustainably Leveraged Natural and Other Unique Assets** reflects staying true to Dominica's Nature Island 'brand' by valuing the unique assets of the country, maintaining a pristine environment, and carefully monetizing them to support the resilience agenda. It focuses on geological resources, fresh water, marine environment, lands and forests, as well as conceptually recognizing the value of Dominica's culture, history and knowledge of resilience gained through recent events.

Based on these six results areas, the Government of Dominica is committed to achieving 20 Climate Resilience Targets by 2030, of which the following allude to more systemic risk aspects:

- Communities able to operate independently for 15 days post extreme weather event.
- Individuals able to revert to basic living standards within four days.
- 100 percent functioning of critical Government and emergency services during and after an extreme climatic event
- Seaports and airports functioning within one week of an extreme weather event.
- Sustained, sustainable and inclusive growth of minimum 5 percent achieved.
- 100 percent primary roads and bridges open within 3 days of an extreme weather event.

- 60 percent of the population with access to water and sanitation within 7 days of an extreme weather event.
- 90 percent of the population with access to power within 3 days of a climatic event.
- 100 percent of national budgeting, policies in place and enforced, and Government performance measurement framework informed by resilience targets.
- 90 percent of the population able to identify the pillars of resilience and at least one measure undertaken by the Government, with specific focus on respect for people, planet and property; and law and order maintained following significant disasters.

The perspective and approach detailed in the post-Maria plans represents a dramatic change as compared to disaster and disaster risk management principles and actions prior to this singular event and Erika prior to that. The previous concentration on traditional disaster response mechanisms and international assistance post-impact has evolved in dramatic ways. Although the preparedness and response-reconstruction modes still dominate, aspects related to the social construction of risk and prospective approaches are now very present—security informed public investment, diversification, land use planning and adequate location and relocation of hazard prone building, decentralized, centrally supported governance etc.

Systemic Risk Governance: some preliminary thoughts

Hurricane Maria on the tail of Hurricane Erika and the global financial crisis clearly opened a policy window for more integrative, sustainability-led and systemic thought, that allows one to think that Dominica has established and put in place many fundamental aspects relevant to the potential governance of the systemic aspects of risk and the promotion of integrative approaches to governance and management, guided by across-the-board principles. The small size, highly externally dominated economy, lack of diversification, and financial dependency of the island signifies a generally low ability to control trigger events and ripple effects directly, given their exogenous origins if based on endogenous development processes.

The creation of CREAD is among the positive institutional transformation measures taken with its cross sector and territorial mandate. The direct control and reporting to the Prime Minister by CREAD and the planning and finance ministries is also critical for cohesion and coordination. The open discussion and presentation in documents and public speeches by government leaders on the complexity of the island´s development challenges and the implicit systemic aspects this covers is highly positive also.

Making the still more implicit systemic aspects explicit and assigning clear but coordinated roles to agencies and sectors can be one step forward, backed by the ideas and proposals on data and information systems that could provide the bases for design and application of systemic risk reducing policies and actions.

An approach to governance of systemic risk must be based on a scientific understanding of the ways risk is constructed, the relations between social actors on different scales and role profiles. Research and action must be related.

Creation of an innovation economy for Bangladesh through labor-centric competitiveness coupled with dynamic entrepreneurship has lifted the country to the 2nd position in the world apparel trade. Equitable distribution of resources and technical knowledge of the world geared towards people's welfare is powerfully reflected in the Digital Bangladesh 2021. Upholding of culture and articulating farmer's welfare mechanism through improved nutrition and reducing occupational health hazards have been geared towards the welfare of its people (GOB, 2020).

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