



PRIVATE SECTOR STUDY PREPAREDNESS FOR ENHANCED RESILIENCE AFTER HURRICANES IRMA AND MARIA IN DOMINICA AND THE BRITISH VIRGIN ISLANDS



UNISDR
United Nations Office for Disaster Risk Reduction

Private Sector Study: Preparedness For Enhanced Resilience After Hurricanes Irma And Maria In Dominica And The British Virgin Islands

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Prepared by:

Jeremy Collymore

Honorary Research Fellow

Institute for Sustainable Development, University of West Indies

Indianna Minto-Coy

Senior Research Fellow

Centre of Excellence, Mona School of Business & Management, University of the West Indies

With input from

IDEAs Transformation

Nicholas Bruno



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ALIANZA DEL SECTOR PRIVADO PARA SOCIEDADES RESILIENTES ANTE DESASTRES

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Caribbean Private Sector Network Meeting

24 August Port-of-Spain Trinidad and Tobago

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Executive Summary

1.0 BACKGROUND

The 2017 Atlantic hurricane season was very active and destructive with 17 named storms, alongside 1936, was ranked as the fifth-most active season since records began in 1851. It registered the highest total accumulated cyclone energy (ACE) and is the only season on record with three hurricanes each having ACE of over 40: Irma, Jose, and Maria.

With the highest number of major hurricanes since 2005, all ten of the season's hurricanes were the greatest consecutive number in the satellite era. It is by far the costliest season on record, with a preliminary total of over US \$292.23 billion in damages. Mostly due to the major hurricanes Harvey, Irma, and Maria, the 2017 season was one of only six years on record to feature multiple Category 5 hurricanes, and only the second after 2007 to feature two hurricanes making landfall at that intensity.

During the month of September 2017, between the 5th and 20th, the Caribbean region was impacted by two major Category 5 sequential hurricane systems, Irma and Maria, resulting in multi-island impacts.

Irma became a category 5 hurricane in the Eastern Atlantic Ocean on Tuesday September 5, 2017 with maximum sustained winds near 185 mph. It impacted the CDEMA Participating States of Anguilla, Antigua and Barbuda, The Virgin Islands (BVI), Dominica, St. Kitts and Nevis, Montserrat the northern districts of Haiti, Turks and Caicos Islands and the South-Eastern islands of the Bahamas. A combination of strong winds, storm surge and intense rainfall, resulted in the loss of 40 lives and significant damage to homes, critical infrastructure and other sectors throughout the affected islands.

Whilst hurricane Irma was affecting the northern CDEMA Participating States, Hurricane Jose a Category 3 cyclone posed a threat to the Northern Leeward Islands but fortunately did not result in any impacts. However the threat posed by Jose immediately following the impact of Irma, influenced the Government of Antigua and Barbuda to evacuate the population of Barbuda.

Maria became a category 5 hurricane near the Leeward Islands on Monday September 18th, 2017. It rapidly progressed from a tropical depression to a major hurricane (Category 3) within 48 hours and, subsequently to a catastrophic hurricane (Category 5) 8 hours later impacting Dominica at approximately 9:35 pm on September 18th, with wind speeds of 155 mph. It then impacted St. Kitts and Nevis, Antigua and Barbuda and The Virgin Islands (BVI) between September 19 and 20 2017.

The outcome of the sequential and multi-island impacts of Hurricanes Irma and Maria resulted in an operational environment and experience that tested the capability and capacity of the Regional Response Mechanism (RRM).

The losses to these systems on the climate-vulnerable islands of the Caribbean were substantial. Overall losses are estimated at more than US\$100 billion. Irma and Maria resulted in extensive disruption to emergency communications in the impacted states, damage to airports, emergency shelters, roads and bridges, schools, hospitals, business facilities and the housing stock.

The Virgin Islands (British) and Dominica were the most affected with losses estimated at 148% and 110% of GDP, respectively.

Other severely affected islands in the CDEMA mechanism were Anguilla, the Bahamas, and Turks and Caicos Islands. Haiti and St. Kitts and Nevis also suffered some damage.

The hurricanes came at a time when efforts are underway to enhance business contingency planning and business continuity management in private sector in CDEMA states. In the Global Affairs Canada (GAC) funded project for Enhancing Knowledge and Application of Comprehensive Disaster Management (EKACDM), implemented by the Disaster Risk Reduction Centre (DRRC), the Private sector will be a major beneficiary through the mainstreaming of disaster management approaches. Operators and employees of Small and Medium sized Enterprises (SMEs) will also benefit through training and improved disaster risk information and the provision of tools. The Hamilton Report, an early output of the EKACDM, highlighted the low levels of integration of disaster risk management (DRM) in the SMEs in the Caribbean.

Protection of self-interest is strong reason why the private sector would need to be engaged in DRM and climate change adaptation. The goal is to encourage more proactive efforts to protect operations and assets from climate and other natural shocks. The contingency and continuity planning will need to consider the related supply chains.

This survey was conducted to understand the current status of business continuity planning (BCP) adoption and the level of BCP awareness in the two Caribbean islands.

Hurricanes Irma and Maria provided an opportunity for assessing the efforts of the private sector at business contingency planning and continuity management.

This study was supported by UPS Foundation through the UNISDR Regional Office for the Americas within the context of the ARISE initiative.

UNISDR established the Private Sector Alliance for Disaster Resilience Societies (ARISE), a unique collaboration of over 140 companies worldwide and public sector entities, engaging businesses, universities, students and local city administrations to support investment planning, operational, analytical, regulatory and governance dimensions.

In the Caribbean, UNISDR is partnering with the Caribbean Disaster and Emergency Management Agency (CDEMA) as well as other regional partners to enhance the private sector engagement in disaster risk reduction. National Disaster Management Offices and National Chambers of Commerce are the main partners to initiate activities with the private sector at the national level.

Likewise to the Sendai Framework for DRR, the Comprehensive Disaster Management (CDM) Strategy, the Caribbean disaster risk management framework, highlights the important role of the private sector in the efforts for building resilience. Safeguarding private sector investment from disasters must be a key priority for ensuring sustainable economic growth and trade relations.

2.0 OBJECTIVE

This Study sought to review the efforts of the private sector, in the Virgin Islands and Dominica impacted by hurricanes Irma and Maria, in preparing for, responding to and recovering from these events.

2.1 Expected Outcomes

The Study provides:

- i. An understanding of BCP and business continuity management (BCM) practice in the private sector in BVI and Dominica.
- ii. Improved information on resilience, reconstruction and capacity building initiatives of the private sector to inform practice and address gaps.
- iii. Documentation of knowledge and good practices sharing in DRM in the study countries.

3.0 CONTEXT AND OVERVIEW OF THE PRIVATE SECTOR IN THE STUDY COUNTRIES

The study countries are the British Virgin Islands and Dominica. These are small islands with populations of approximately 30,000 and 72,000 respectively and large small and micro business community.

As in most small-island developing states, in Dominica the private sector is characterized by a few dominant firms and numerous micro and small enterprises. According to the International Finance Corporation and the World Bank, in 2010, 80% of all firms in Dominica were categorized as private businesses under domestic ownership. Of these, 53% were under sole proprietorship, 21.7% were limited-liability companies, 17% were standard partnerships and 8.3% were limited partnerships.

In the BVI the main areas of economic activity are tourism and financial services. As much as 60% of government revenues is sourced from the BVI's thriving off-shore financial services sector. While the financial services sector provides the majority of government income, the mainstay of income for citizens is tourism (Government of the Virgin Islands, 2018). In 2016 Tourism accounted for roughly 34.3% of the BVI's GDP or (US \$332.6 million). Many of the small and micro businesses provide services to these key sectors.

The 2017 hurricanes Irma and Maria resulted in extensive disruption to emergency communications, damage to airports, emergency shelters, roads and bridges, schools, hospitals, business facilities and the housing stock.

"The Post-Disaster Needs Assessment concluded that Hurricane Maria resulted in total damages of EC\$2.51 billion (US\$931 million) and losses of EC\$1.03 billion (US\$382 million), which amounts to 226 percent of 2016 gross domestic product (GDP), in Dominica. The estimated damage and losses for the BVI are \$1,242 million.

4.0 METHODOLOGICAL APPROACH TO THE STUDY

The Study provided a space for capturing the experiences of an often-ignored sector in the Disaster Risk Management (DRM) programming in general and post-impact assessment in particular. This unique capture of information is intended to inform ongoing actions and proposed initiatives to enhance private sector resilience.

The Study countries were defined by the commissioner of the exercise. These were Dominica, a sovereign state extensively damaged by Hurricane Maria and The Virgin Islands (BVI), an overseas territory of the United Kingdom which was extensively damaged by Irma.

A multiple methods approach was used in the Study. These included:

1. Key informant interviews: business owners and officials from private sector umbrella organizations were interviewed to get local perspectives on the practice and issues related to DRM in their constituency. Interviews were also had with government and disaster management officials (Appendix I). The interviewees were selected through a mixture of purposive and convenience sampling. This was driven by the fluid nature of those involved in the operations space.
2. Documents Review: Desk review of documents relating to the private sector position in the national economy and the impact of the events on the economy and the sector was undertaken (Appendix II). These provided insights to the structure of the private sector, the characteristics of the impacting systems, and prior impacting events.
3. Survey of the Business Community: An anonymous survey comprising open and closed ended questions was administered at two levels. Firstly, electronically via Survey Monkey (Appendix III) to business entities across the two case study sites.

The umbrella business organisations, including the Dominica Association for Industry and Commerce and the Virgin Islands Chamber of Commerce and Hotel and Tourism Organisations were involved in this exercise.

They provided the list of their memberships and facilitated dissemination. Additionally, they facilitated the organization of interviews with targeted entities. In cases where access to internet services was a challenge hard copies of the survey instrument were handed out by enumerators hired for this purpose. Primary data collection was undertaken during the period of May 28-June 11, 2018.

4. Given the uncertainty of business existence and location after the impact of hurricanes Irma and Maria in the study countries a purposive and convenience sampling approach was utilized.

5. Good Practices Identification: The discussions with business owners and the representatives of the umbrella organizations was used to surface potential good practices in DRM, including recovery in the BVI and Dominica.

The suggested entities were contacted and discussions held on their experiences. The final selection was informed by the guidelines provided by the UNISDR and criteria for case study documentation .

4.1 Limitations of the Study

The Study took place in a dynamic environment of an unfolding recovery even as preparations for the 2018 hurricane season were unfolding. This was reflected in the uncertainty about functioning and location of businesses. The list provided by the umbrella organizations did not represent the post impact situation.

The Private Sector BCP study is based on key respondents information and secondary data. It is to be noted that the baseline used for data in quantitative reports, e.g., the Post-Disaster Needs Assessment (PDNA) national economic reports, was in many cases were dated.

5.0 RESULTS OF THE STUDY

The results of the Study are provided around four broad areas:

a Contingency practice environment before the events - Here the attention is on the extent, nature of and the process of private sector contingency and/or continuity planning in the study countries.

b. Preparedness Outcomes – This speaks to the nature and extent of losses, the perceived usefulness of the contingency plans and planning.

c The Lessons Learning and Recovery Actions - Will describe and discuss the lessons identified for doing things differently and plans for recovery.

d. Conclusions and Recommendations – The observations on the contingency planning practice, gaps identified and opportunities for enhancement are summarized and inform recommendations for stakeholders at varying levels.

5.1 Pre Irma and Maria Contingency and Continuity Planning

The 131 entities surveyed were generally micro and small businesses with 56% (n=63) having 15 employees or less and 31% reporting a small annual revenue base of less than US\$ 200,000. The businesses had a relatively long operation history with 16% being around for more than 10 years and 40 % for 20 years or more. They are primarily involved in the service industry with at least 70% of the respondents indicating businesses in each of retail (24%), tourism (30%) and professional services (16%).

There was therefore a history of hazard impact experience and awareness of consequences among respondents. The experience and awareness is translated into a very mixed picture of contingency planning.

The primary focus of the available plans and procedures was hazard information (38%), preparedness/response roles (47%) and asset protection (51%).

The limited focus of contingency planning is embedded in a culture of ad hoc approaches to plan/procedures testing and updating with 33% undertaking and updating annually or biennially; 30% periodically and 21% never testing or updating.

There is an indication that past hazard experiences triggered action in some business to initiate changes to improve DRM practice and systems.

In the pre-events era the businesses primarily looked towards government entities for support in initiating contingency planning. Those entities seeking government support tended to be the smaller businesses employing less than 15 persons.

5.2 Preparedness Outcomes

The questions posed here sought to capture the broad consequences of the Irma and Maria on the operations of the respondents and their assessment of the performance of the existing plans or procedures.

Respondents assessed the usefulness of their plans on its contribution to asset and equipment protection, 41 and 37 percent respectively, followed by the minimized loss of goods (29%). The signal is that contingency planning among the respondents is centred on the protection of the tangible elements with a lens on restoration. The business continuity considerations are less present.

The majority of the business respondents (n=45; 40%) that were impacted by Irma and Maria in BVI and Dominica took longer than 2 months to resume business operations with a 38% (n=43) restarting operations in less than a month. Sixty-nine percent (n=24) of the businesses that resume operations in less than a month had business continuity plans in place prior to impact while 74% (n=26) of the businesses without BCPs took more than a month to resume operations with 46% (n=16) of those without BCPs taking longer than 2 months for the business to recover. It was evident that the dependency on utilities was not fully in the contingency plans of operations and the need for greater interface with the public sector and key service providers.

5.3 Lessons Learning and Post Events Culture

The focus of the questions here was to find out what the respondents felt could have been done differently in preparing for Irma and Maria, where there are looking for support for recovery and what changes the contingency planning are being contemplated.

With respect to what could have been done differently, the respondents gave a diversity of responses most of which aligned to business continuity thinking. A number of action or steps were highlighted by the respondents that could have been taken prior to the passage of hurricanes Irma and Maria to reduce the impact on businesses. Among these were asset protection, public education and physical enhancements.

Only 8% (n=7) of the respondents identified having a business continuity plan as one of the steps that could have reduce the impact of Irma and Maria.

Notwithstanding the low number of businesses that highlighted having a business continuity

plan as a preparedness action, the experiences of hurricanes Irma and Maria appear to have led to a change in the business continuity of operations culture in BVI and Dominica with seventy-eight percent of the respondents embracing BCPs as effective disaster planning tools.

This recognized need for a change in disaster planning practice among the respondents is reflected in the numbers indicating intent to enhance their contingency and continuity planning 47% and also awareness building 53% respectively.

However, one must be concerned about the 30% who has not initiated plan enhancement and or not planning to so, even as the 2018 hurricane season was unfolding.

Of the respondents who indicated that nothing in particular was hindering their BCP development process, 32% had an employee base of 5 or less employees with another 26% employing over 50 persons.

6.0 CONCLUSIONS

The impacts of hurricanes Irma and Maria were devastating on the BVI and Dominica. The private sector was not spared the ravage and loss. Key utilities were disrupted for extended periods compounding the already heavy losses to property, equipment, goods and services.

Whilst the two study countries were recently impacted by hydro-meteorological events (BVI August Floods 2017 and TS Erica in Dominica 2015), among many in the last 30 years, contingency and continuity planning is limited in scale and scope.

Irma and Maria were characterized as high magnitude, rapid onset and intense impacting systems. Whilst for many they may be unprecedented and unfamiliar they may also be signals of things to come (Taylor 2017). The question really is what drives the assumptions of the planning process.

The results of the study suggest that the plan development process is not systematized and this can be a starting point for a contingency/continuity enhancement exercise. The current efforts may be characterized as preparing to respond and restore. Whatever the focus it presents a platform for coordinated support.

The information and resource base for supporting businesses in contingency and/or contingency planning is limited or where exists is not structured for ease of access.

There is evidence of lessons learning from the Irma and Maria experiences but this requires addressing the information and resource access gaps, sustained information and education and capacity building. There is an opportunity to explore how a partnership between the business communities and higher level educational institutions can address these needs. The efforts of the Disaster Risk Reduction Centre of the University of the West Indies, through the Enhancing Knowledge and Application of Comprehensive Disaster Management (EKACDM) Project, in collaboration with ARISE to develop training materials and promote BCP in the schools of business and management can be a starting point.

There is also a need to advance the dialogue initiated between the private sector and government on the role of the sector in the recovery programme for both providing services and, as appropriate, incentives for business recovery. As efforts unfold to be better prepared for the 2018 hurricane season more and improved dialogue between the disaster management organizations and the business community on assumptions, expectations and roles. Such a dialogue should be approached as the initiation of an engagement process in building the synergy necessary for the desired Resilient States.

To get traction in changing BCP practice more predictable and accessible support will be required. This provides a leadership opportunity for the umbrella business organizations and it appears that they are already warming up to this. However these entities will themselves need capacity enhancement to sustain the support.

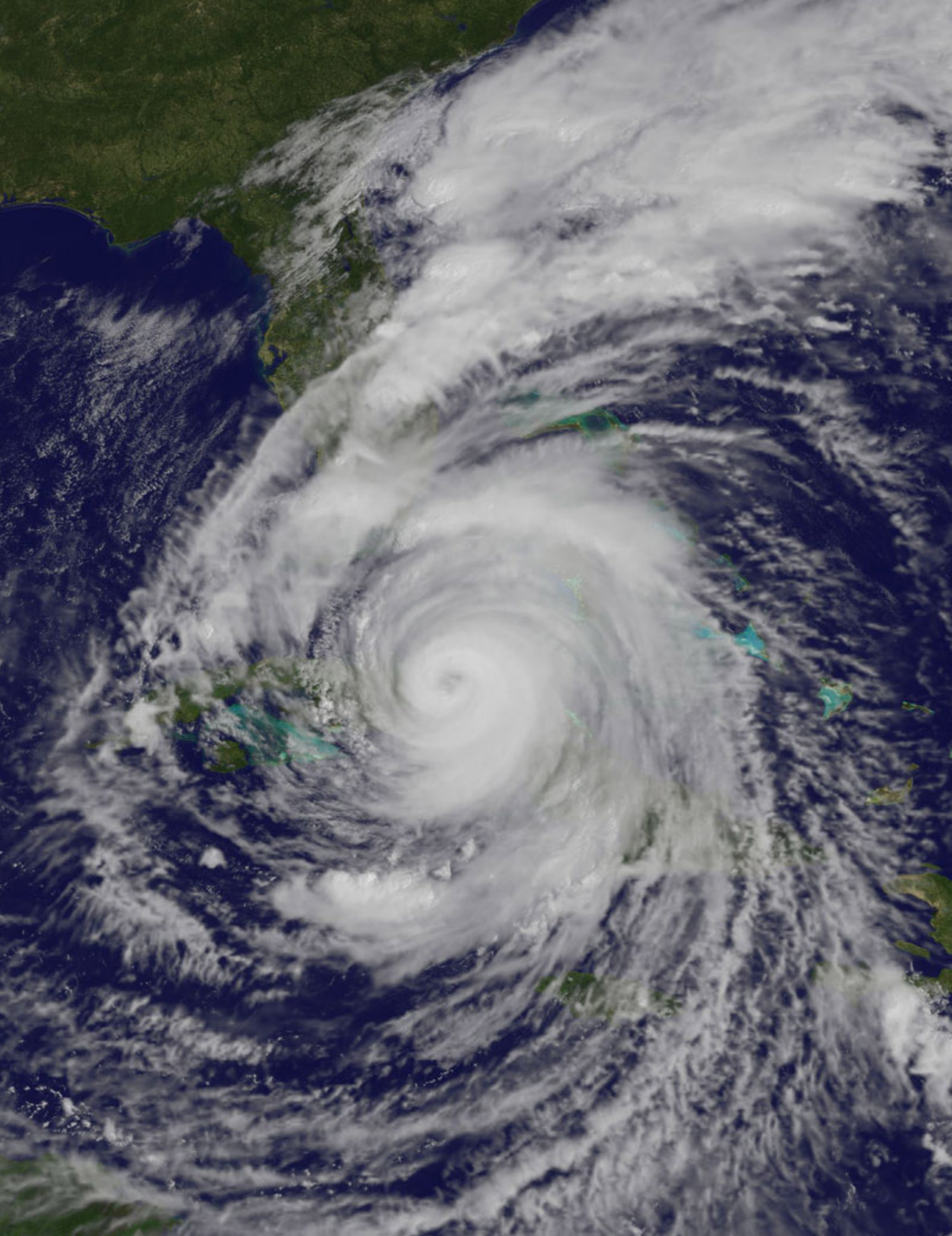
The mindset of the disaster planning within the private sector, also in the public sector, will need to change from planning for response to planning continuity of services within a lens for adaptivity.

This should be the context in which the initiated ARISE interventions should be elaborated.

7.0 RECOMMENDATIONS

The recommendations below are not exhaustive of the actions required to enhance contingency and continuity planning in the private sector. Rather they represent potential catalytic spaces for using the Irma and Maria experiences as both teachable moments and transformative processes in risk management thinking and practice.

1. Use the high awareness of the need for, and efforts to improve, contingency and continuity to convert awareness to action.
2. Establish physical and virtual spaces where model tools, guidelines and expert guidance can be provided.
3. Organize Resilience Academies to provide short intense training opportunities for the business community to learn by doing. Such sessions should be targeted to meet the diversity of business types with predictable schedules informed by the activity cycle of the targeted communities.
4. Use the current planning for the 2018 hurricane season to establish defined roles and expectations.
5. Strengthen business umbrella organizations to lead the CP and BCP process using regional partnerships where appropriate.
6. Explore the Good Practices documentation to promote horizontal experience sharing.
7. Establish business resuscitation facilities to provide common services for impacted and dislocated small businesses and transition to business incubators going forward.
8. Identify, document and disseminate the recovery financing mechanisms for the business community existing at national level, of multi-lateral and bilateral organizations, multi-lateral financial institutions and within the business community itself. These should include both ex ante and ex post instruments. Orientation sessions on how to access the resources should be part of this exercise.
9. Provide support for local level delivery of the BCP training products being developed through the Disaster Risk Reduction Centre.
10. Revisit the assumptions of the ARISE programme and priorities for the Caribbean. Key considerations need to be given to stakeholder mapping and engagement strategies in its delivery.





1.0 BACKGROUND

The 2017 Atlantic hurricane season was very active and destructive with 17 named storms, alongside 1936, was ranked as the fifth-most active season since records began in 1851. It registered the highest total accumulated cyclone energy (ACE) and is the only season on record with three hurricanes each having ACE of over 40: Irma, Jose, and Maria. With the highest number of major hurricanes since 2005, all ten of the season's hurricanes were the greatest consecutive number in the satellite era. It is by far the costliest season on record, with a preliminary total of over US \$292.23 billion in damages. Mostly due to the major hurricanes Harvey, Irma, and Maria, the 2017 season was one of only six years on record to feature multiple Category 5 hurricanes, and only the second after 2007 to feature two hurricanes making landfall at that intensity.

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The losses to these systems on the climate-vulnerable islands of the Caribbean were substantial. Overall losses are estimated at more than US\$100 billion. Irma and Maria resulted in extensive disruption to emergency communications in the impacted states, damage to airports, emergency shelters, roads and bridges, schools, hospitals, business facilities and the housing stock. The Virgin Islands (British) and Dominica were the most affected with losses estimated at 148% and 200% of GDP, respectively. Other severely affected islands in the Caribbean Disaster Emergency Management Agency (CDEMA) mechanism were Anguilla, the Bahamas, and Turks and Caicos Islands. Haiti and St. Kitts and Nevis also suffered some damage.

The hurricanes came at a time when efforts are underway to enhance business contingency planning and business continuity management in private sector in CDEMA states. In the Global Affairs Canada (GAC) funded project for Enhancing Knowledge and Application of Comprehensive Disaster Management (EKACDM), implemented by the and employees of Small and Medium sized Enterprises (SMEs) Disaster Risk Reduction Centre (DRRC), the Private sector will be a major beneficiary through the mainstreaming of disaster management approaches. Operators will also benefit through training and improved disaster risk information and the provision of tools. The Hamilton Report, an early output of the EKACDM, highlighted the low levels of integration of disaster risk management (DRM) in the SMEs in the Caribbean. Protection of self-interest is strong reason why the private sector would need to be engaged in DRM and climate change adaptation.

¹ Caribbean Disaster Emergency Management Agency

The goal is to encourage more proactive efforts to protect operations and assets from climate and other natural shocks. The contingency and continuity planning will need to consider the related supply chains.

This survey was conducted to understand the current status of business continuity planning (BCP) adoption and the level of BCP awareness in the two Caribbean islands.

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Private Sector Businesses face a number of threats from disasters, both from natural and man-made hazards. Hurricanes like Harvey, Irma and Maria damage business operations, disrupt local, national and global supply chains and, of course, put the lives and well-being of employees and customers at risk. Businesses must meet the costs of their own risk prevention, recovery and reconstruction.

Businesses are vital to national and regional economies, not only as providers of products and services, but also as employers and investors.

Disasters may also bring longer-term consequences – especially if a business is forced to relocate, or adapt to more structural changes in the market for its products or services as a result of social or economic dislocation. Businesses are also fragile – particularly smaller businesses.

Even a few days' disruption can cause cash flow problems or even closure; this has repercussions for employees, customers and suppliers. As a result, businesses increasingly recognize the importance of incorporating resilience and disaster risk reduction into both their operating models and their day-to-day decision making.

Businesses are vital to national and regional economies, not only as providers of products and services, but also as employers and investors. Often, smaller countries are dependent on a single business sector; in many smaller island states, for example, tourism accounts for as much as a third of the national economy.

Consequently, businesses have a direct influence on a country's ability to absorb disaster – to return to normal after the shock of an earthquake, flood or tropical storm. Given the right environment, businesses can be a part of the solution in helping reduce the risk and building long-term resilience.

The Sendai Framework highlights a lack of regulation and incentives for private disaster risk reduction investment as an underlying risk driver and calls for businesses to integrate disaster risk into their management practices.

It also states that addressing underlying disaster risk factors through disaster risk-informed public and private investments is more cost-effective than primary reliance on post-disaster response and recovery, and contributes to sustainable development.

UNISDR established the Private Sector Alliance for Disaster Resilience Societies (ARISE), a unique collaboration of over 140 companies worldwide and public sector entities, engaging businesses, universities, students and local city administrations to support investment planning, operational, analytical, regulatory and governance dimensions.

In the Caribbean, UNISDR is partnering with the Caribbean Disaster and Emergency Management Agency (CDEMA) as well as other regional partners to enhance the private sector engagement in disaster risk reduction. National Disaster Management Offices and National Chambers of Commerce are the main partners to initiate activities with the private sector at the national level.

Likewise to the Sendai Framework for DRR, the Comprehensive Disaster Management (CDM) Strategy, the Caribbean disaster risk management framework, highlights the important role of the private sector in the efforts for building resilience. Safeguarding private sector investment from disasters must be a key priority for ensuring sustainable economic growth and trade relations.

2.0 OBJECTIVE

This Study sought to review the efforts of the private sector, in the Virgin Islands and Dominica impacted by hurricanes Irma and Maria, in preparing for, responding to and recovering from these events.

2.1 Expected Outcomes

The Study provides:

- i. An understanding of BCP and business continuity management (BCM) practice in the private sector in BVI and Dominica.
- ii. Improved information on resilience, reconstruction and capacity building initiatives of the private sector to inform practice and address gaps.
- iii. Documentation of knowledge and good practices sharing in DRM in the study countries.

3.0 CONTEXT AND OVERVIEW OF THE PRIVATE SECTOR IN THE STUDY COUNTRIES

3.1 Dominica

With an estimated population of 71,293 (2011 census) and a gross domestic product per capita of US\$7,144 Dominica is considered an upper-middle-income small island state.

Dominica produces a narrow range of goods and services for export. These are primarily agricultural products and educational services through the establishment of international medical schools. Dominica's main export agricultural goods include bananas, cereal and pellets, tropical fruits, cassava, citrus, beer, pasta, spices, and vegetables. Although the economy is described as predominantly agricultural, the contribution of tourism is becoming more significant to the development of the country.

The 2015 United Nations Development Program Human Development Index ranked Dominica as 96 of 187 countries – poverty remains a pervasive development issue. Dominica continues to work towards improving the social conditions of its citizens through infrastructural investments, economic diversification and employment generation, yet its population and economy remains highly exposed to natural disaster events and catastrophic risk.

Disasters stemming from natural hazards such as high wind exposure, floods and landslides have destroyed or damaged critical infrastructure and set back hard earned development gains – disaster recovery and reconstruction have absorbed an increasingly large share of annual budgets imposing substantial costs on the country's economy.

At the end of 2011, the population was estimated at 70,739 persons, with a population growth rate of about -0.07% per annum.

3.1.1 Private Sector composition

In December 2012, private sector organizations signed a memorandum of understanding (MOU) to form the Dominica Business Forum.

The various organizations captured under the Dominica Business Forum umbrella include the Dominica Employers' Federation (DEF), the Dominica Hotel and Tourism Association (DHTA), the Dominica Coalition of Service Industries (DCSI), the Dominica Association of Industry and Commerce (DAIC), the Dominica Manufacturers' Association (DMA), the Dominica Builders and Contractors Association (BCAD) and Dominica Coalition of Service Industries (DCSI).

Other private organizations are the Dominica Chamber of Agri-Business and Dominica Herbal Business Association (DHBA).

The DBF was formed to allow for the prospect of a single voice to advance proposals for better policies geared at enhancing the business climate on the island.

The establishment of the forum for the discussion of private sector needs and the representation of once voice to Government bodes well for the development of productive dialogue between the private and public sectors in Dominica. The role envisaged for the DBF at its inception however has still not yet materialized as individual member organizations persist in having unilateral discussions with Government entities.

The main public sector body in Dominica supporting private sector development is the Ministry of Commerce, Enterprise and Small Business Development. The Ministry portfolio supports policy initiatives and oversight for industries, factories, manufacturing, agro processing, Small Business and Enterprise, Private Sector Development.

² See KPMG Fast Facts: <https://home.kpmg.com/vg/en/home/about/overview/fast-facts-in-the-bvi.html>

As in most small-island developing states, in Dominica the private sector is characterized by a few dominant firms and numerous micro and small enterprises. According to the International Finance Corporation and the World Bank, in 2010, 80% of all firms in Dominica were categorized as private businesses under domestic ownership. Of these, 53% were under sole proprietorship, 21.7% were limited-liability companies, 17% were standard partnerships and 8.3% were limited partnerships.

The Dominican economy was dependent on agriculture - primarily bananas - in years past, but increasingly is being driven by tourism. This reflects the government's efforts to promote Dominica as an "ecotourism" destination. Hurricane Maria has however destroyed much of the country's agricultural sector and damaged all of the country's transportation and physical infrastructure.

The economy also contracted in 2015 in the aftermath of Tropical Storm Erika but recovered to positive growth in 2016 due to a recovery of agriculture and tourism.

Overall, the industrial structure of Dominica is dominated by services, with Transport, Storage and Communications, Education, Wholesale and Retail Trade, and Real Estate, Renting and Business Activities accounting for over 53% of GDP.

The Wholesale and Retail Sector recorded the largest contribution - 14.29 percent to GDP. The Transport, Storage and Communications sector followed closely accounting for the second largest contribution, 13.86 percent, with the Communications sub-sector as its highest contributor, 6.12 percent.

Agriculture, Livestock and Forestry sector accounted for 11.75 percent of the overall GDP, with the sub-sector Other Crops recording the highest contribution, 9.90 percent. The Private Education sub-sector registered 7.63 percent of GDP thereby resulting in an overall 11.30 percent contribution of Education to economic activities.

Over the last five years the main contributors to GDP were Wholesale and Retail Trade, Transport, Storage and Communications, Agriculture and Education (mainly private). Tourism, education, transport, storage, and communications are the main drivers of activity in the services sector of Dominica's economy.



3.2 British Virgin Islands

The BVI is a small Caribbean Island chain with 4 main population centres consisting of Tortola, Virgin Gorda, Jost Van Dyke, Anegada and over 62 other islands. This non-sovereign overseas territory of the United Kingdom has a population of approximately 28,882 persons.[1]

The main areas of economic activity are tourism and financial services. As much as 60% of government revenues is sourced from the BVI's thriving off-shore financial services sector. The BVI offers a home for corporations and trusts who wish to register on the island, while operating their business and holding assets elsewhere.

The international business and financial sector is believed to contribute one of every ten jobs and accounts for US\$330 million value added (Debono, et al, 2017). Though local offices of overseas companies were evacuated and shut down after hurricane, the sector was quick to bounce back after the hurricane. This was through the relocation of key staff to other overseas locations.

While the financial services sector provides the majority of government income, the mainstay of income for citizens is tourism (Government of the Virgin Islands, 2018). In 2016 Tourism accounted for roughly 34.3% of the BVI's GDP or (US \$332.6 million) with expectations for an increase of 5.4% in 2017.

4.0 IRMA AND MARIA: THE SYSTEMS AND IMPACT IN THE VIRGIN ISLANDS (BVI) AND DOMINICA

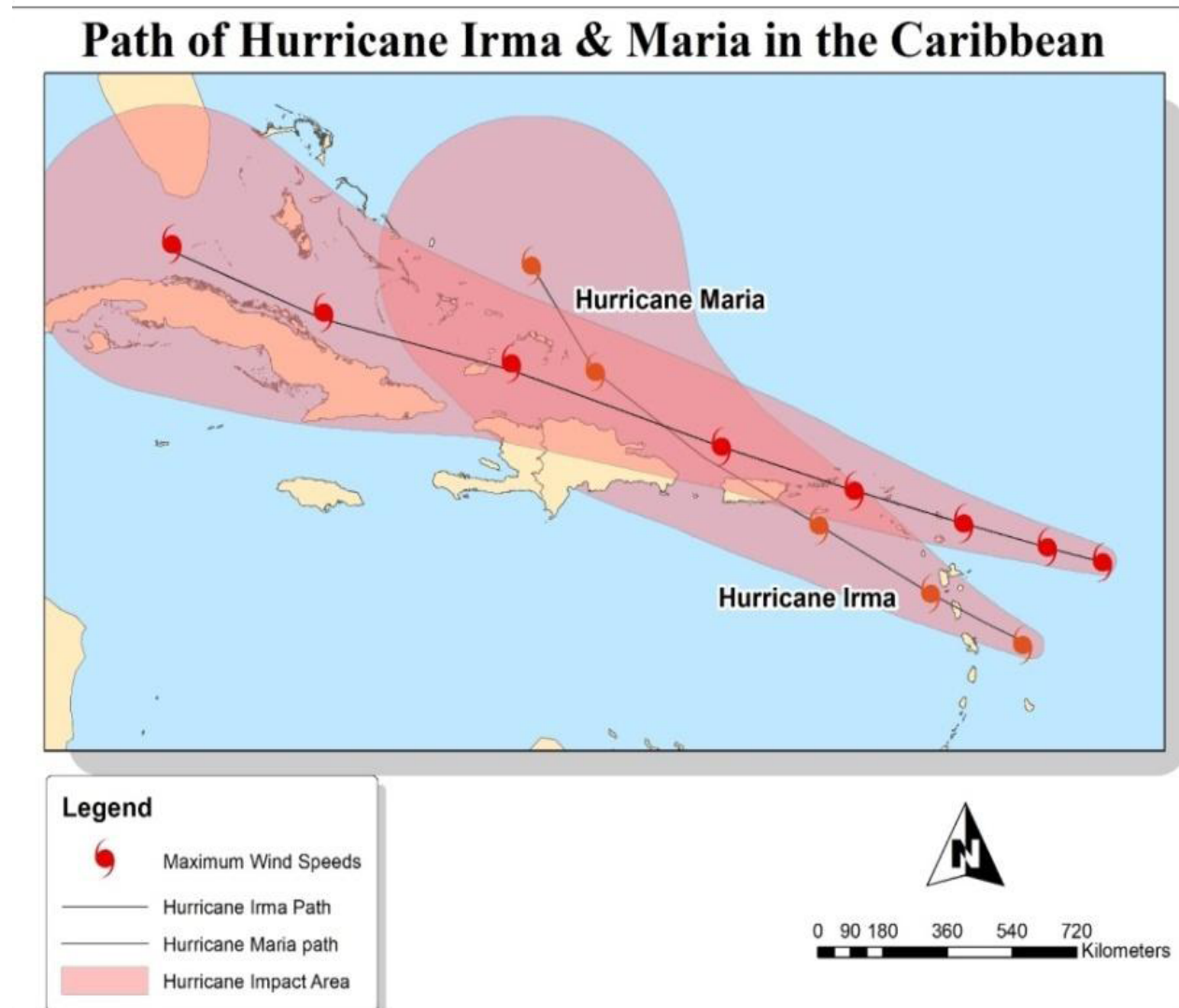


Figure 1: Path of Hurricane Irma and Maria in the Caribbean

The 2017 Atlantic hurricane season was a highly active, deadly, and extremely destructive season, featuring 17 named storms; ranking alongside 1936 as the fifth-most active season since records began in 1851. 2017 is also one of only six years on record to feature multiple Category 5 hurricanes, and only the second after 2007 to feature two hurricanes making landfall at that intensity and these, Irma and Maria occurred in the RRM space (Figure 1).

Hurricanes Maria and Irma both maxing out at Category 5 strength during the same year is a rare event for the Atlantic basin, something that last occurred a decade ago, and has only happened a few other times in historical records.

Atlantic Category 5 hurricanes are scarce overall, with only 33 known to exist dating to 1924, according to NOAA. Two hurricanes attaining this highest level of intensity in a single year is an exceptional event and something that has only been documented five other times (Dolce 2017; Taylor 2017).

The year 2017 was also the only season on record in which three hurricanes each had an ACE of over 40; Irma, Jose, and Maria. Irma's ACE placed it among the strongest Atlantic hurricanes ever observed and its winds are the most powerful ever measured in an Atlantic hurricane north of the Caribbean and east of the Gulf of Mexico (Masters 2017).

Hurricane Maria was the 10th-most intense Atlantic hurricane on record, and one of the most intense tropical cyclones of 2017. A key feature of these systems was rapid intensification and maintenance of strength. Irma became a Category 2 hurricane in 24 hours and had sustained winds of 185 mph (295 km/h) for 37 hours, the only tropical cyclone worldwide to have winds that speed for that long.

It also ties as the 2nd strongest Atlantic Hurricane by wind speed, after Allen in 1980. Maria's peak of 175 mph in the Eastern Caribbean made the 3rd strongest maximum winds experienced in this sub-region after Allen 1980 and Irma 2017, (Taylor 2017).

According to Masters (2017), the 2017 Atlantic Hurricane Season was the only one on record in which three hurricanes each had an ACE of over 40 with Irma's winds being the most powerful ever measured in an Atlantic hurricane north of the Caribbean and east of the Gulf of Mexico.

Their impacts resulted in extensive disruption to emergency communications in the impacted states, damage to airports, emergency shelters, roads and bridges, schools, hospitals, business facilities and the housing stock. "The Post-Disaster Needs Assessment concluded that Hurricane Maria resulted in total damages of EC\$2.51 billion (US\$931 million) and losses of EC\$1.03 billion (US\$382 million), which amounts to 226 percent of 2016 gross domestic product (GDP), in Dominica. The estimated damage and losses for the BVI are \$1,242 (Table 1).

Table 1: RNAT Estimated Damage and Losses for the Study Countries

Sector	Country	
	The Virgin Islands (BVI)	Dominica
Infrastructure (\$ Millions USD)	\$296,000,000	\$306,000,000
Infrastructure (% of GDP)	35	58
Social (\$ Millions USD)	\$583,020,000	\$443,910,000
Social (% of GDP)	363	178
Productive (\$ Millions USD)	\$363,390,000	\$177,950,000
Productive (% of GDP)	43	21
Sum of Three (\$ Millions USD)	\$1,242,410,000	\$927,860,000
Sum of Three (% of GDP)	148	110

Source: Dominica PDNA 2017, BVI Preliminary Impact Assessment 2017 (Collymore, J. 2018)

This is the backdrop against which the study of the preparedness for, response to and recovery from the Irma and Maria events was undertaken.

5.0 METHODOLOGICAL APPROACH TO THE STUDY

The Study provided a space for capturing the experiences of an often ignored sector in the Disaster Risk Management (DRM) programming in general and post-impact assessment in particular. This unique capture of information can inform ongoing actions and proposed initiatives to enhance private sector resilience through the ARISE initiative and the outputs of the EKACDM Project to produce training materials and educational products for this sector.

The Study countries were defined by the commissioner of the exercise. These were Dominica, a sovereign state extensively damaged by Hurricane Maria and The Virgin Islands (BVI), an overseas territory of the United Kingdom which was extensively damaged by Irma.

A multiple methods approach was used in the Study. These methods included:

1. Key informant interviews: business owners and officials from private sector umbrella organizations were interviewed to get local perspectives on the practice and issues related to DRM in their constituency. Interviews were also had with government and disaster management officials (Appendix I). The interviewees were selected through a mixture of purposive and convenience sampling. This was driven by the fluid nature of those involved in the operations space.
2. Documents Review: Desk review of documents relating to the private sector position in the national economy and the impact of the events on the economy and the sector was undertaken (Appendix II). These provided insights to the structure of the private sector, the characteristics of the impacting systems, and prior impacting events.
3. Survey of the Business Community: A survey comprising open and closed ended questions was administered at two levels. Firstly, electronically via Survey Monkey (Appendix III) to business entities across the two case study sites. The umbrella business organisations, including the Dominica Association for Industry and Commerce and the Virgin Islands Chamber of Commerce and Hotel and Tourism Organisations were involved in this exercise. They provided the list of their memberships and facilitated dissemination. Additionally, they facilitated the organization of interviews with targeted entities. In cases where access to internet services was a challenge hard copies of the survey instrument were handed out by enumerators hired for this purpose. Primary data collection was undertaken during the period of May 28-June 11, 2018. Given the uncertainty of business existence and location after the impact of hurricanes Irma and Maria in the study countries a purposive and convenience sampling approach was utilized.
4. Good Practices Identification: The discussions with business owners and the representatives of the umbrella organizations was used to surface potential good practices in DRM, including recovery in the BVI and Dominica. The suggested entities were contacted and discussions held on their experiences. The final selection was informed by the guidelines provided by the UNISDR and criteria for case study documentation .

5.1 Limitations of the Study

The Study took place in a dynamic environment of an unfolding recovery even as preparations for the 2018 hurricane season were unfolding. This was reflected in the uncertainty about functioning and location of businesses. The list provided by the umbrella organizations did not represent the post impact situation.

The Private Sector BCP study is based on key respondents information and secondary data. It is to be noted that the baseline used for data in quantitative reports, e.g., the Post-Disaster Needs Assessments national economic reports, was in many cases were dated.

The focus of the Report is therefore on the issues raised, lessons identified, gaps to be addressed and actions for advancing resilience in the private sector.



6.0 RESULTS OF THE STUDY

The results of the Study are provided around four broad areas:

- a. Contingency practice environment before the events - Here the attention is on the extent, nature of and the process of private sector contingency and/or continuity planning in the study countries.
- b. Preparedness Outcomes – This speaks to the nature and extent of losses, the perceived usefulness of the contingency plans and planning.
- c. The Lessons Learning and Recovery Actions - Will describe and discuss the lessons identified for doing things differently and plans for recovery.
- d. Conclusions and Recommendations – The observations on the contingency planning practice, gaps identified and opportunities for enhancement are summarized and inform recommendations for stakeholders at varying levels.

A total of 135 survey instruments were completed in the two study countries however four (4) cases were excluded as a more than 90% of the data was missing. Thirty-seven percent (n=49) of the respondents were from the BVI and 48% (n=63) from Dominica. Fifteen percent (n=19) of the respondents did not report the country where the business was located.

6.1 Pre Irma and Maria Contingency and Continuity Planning

The 131 entities surveyed were generally micro and small businesses with 56% (n=63) having 15 employees or less and 31% reporting a small annual revenue base of less than US\$ 200,000. The businesses had a relatively long operation history with 16% being around for more than 10 years and 40 % for 20 years or more. They are primarily involved in the service industry with at least 70% of the respondents indicating businesses in each of retail (24%), tourism (30%) and professional services (16%). See Table 2.

Table 2: Demographic Characteristics of Respondents (n=131)

Characteristics	<i>n</i>	%
Location^a		
British Virgin Islands	49	44
Dominica	63	56
Size of business (# of employees)^b		
1-5 employees	36	32
6-15 employees	27	24
16 -50 employees	25	23
More than 50 employees	23	18
Estimated annual revenue in US\$		
Less than 25,000	12	13
Between \$25,000 and \$125,000	21	22
Between \$125,000 and \$200,000	8	8
More than \$200,000	4	7
Type of business^c		
Retail	27	24
Tourism	34	30
Manufacturing	9	8
Financial	9	8
Professional Services	18	16
Utilities	2	2
Agriculture	1	1
Other	31	31
Length of business operations		
Less than 1 year	1	0.8
1 – 10 years	37	28.3
11 – 20 years	25	19.2
21 – 30 years	22	16.8
31 – 40 years	10	7.7
More than 40 years	10	7.8
Existence of BCP		
Full plan	43	
Some procedures but not a plan	44	

Notes.^a*n* = 112. ^b*n* =111. ^c*n* =95.

Ninety-eight percent (n=128) of the business responded to the query about business disruption from hazard impact that occurred prior to the passage of hurricanes Irma and Maria in September 2017. Fifty-one percent (n=65) indicated that their business operations were previously disrupted by hazard impacts with 61% (n=30) from the British Virgin Islands and 40% (n=30) from Dominica. For the Dominica based operations, 30% (n=23) listed Tropical Storm Erika in 2015 while 27% (n=16) of the BVI respondents identified the August 2017 floods as the impacting hazard. All the other hazards that impacted the respondent business were hydro-met in nature with 24% of these occurring in the last decade (Table 3).

Table 3: Previous hazard impact that caused business disruption (n=128)

	<i>n</i>	%
August floods in the British Virgin Islands (2017)	16	27
Tropical Storm Erika in Dominica (2015)	23	59
Other floods	3	5
Hydro-met events 2010-2017	31	24

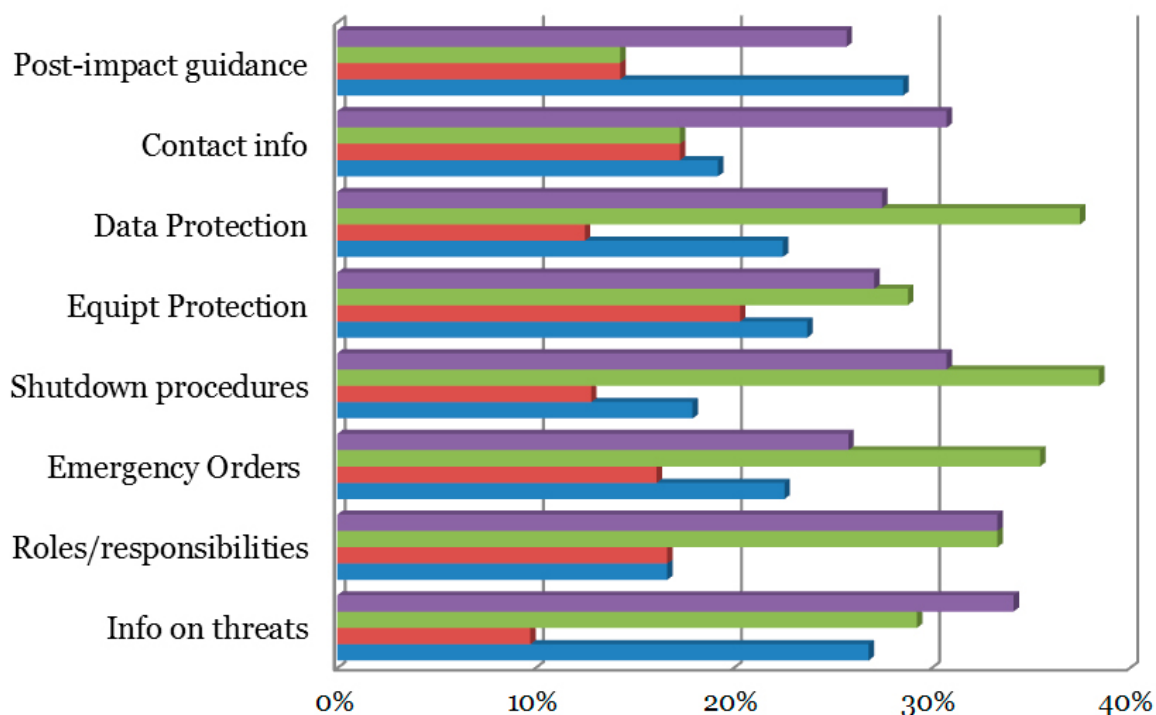
There was therefore a history of hazard impact experience and awareness of consequences. The experience and awareness however is translated into a very mixed picture of contingency planning.

Approximately two-thirds (67%) of the respondents had business contingency plans or other guidance procedures before the passages of Irma and Maria in 2017. 33% (n=34) had business contingency plans with another 34% (n=44) reported having contingency procedural guidance. A similar percentage, 31% (n=40) reported not having any contingency procedures in place to guide how post-impact operations will be handled by their business.

The plans and procedures that existed focused on multiple hazards with floods (36%) and hurricanes (35%) being reported as the most commonly experienced and potentially damaging hazards. With 33% of the multi-hazard plans and procedures addressing the fire hazard served as a reminder of the importance of anthropogenic threats in this community.

The primary focus of the available plans and procedures was hazard information (38%), preparedness/response roles (47%) and asset protection (51%). Figure 2 provides an analysis of the focus of the BCPs based on the size of the business.

The limited focus of contingency planning is embedded in a culture of ad hoc approaches to plan/procedures testing and updating with 33% undertaking and updating annually or biennially; 30% periodically and 21% never testing or updating.

Figure 2: Focus of BCPs vs Size of Business

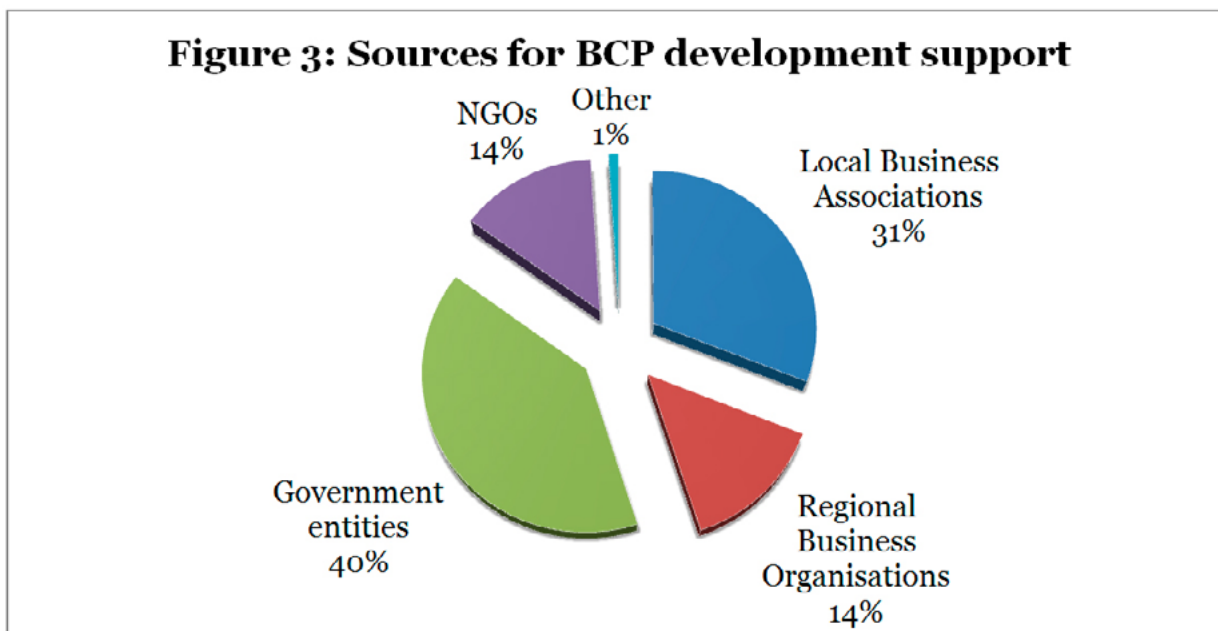
In addition to the contingency planning process, various risk transfer insurance categories were utilized by the respondents with asset protection accounting for the majority namely 46% (n=60) for property insurance and 53% (n=70) for vehicle coverage. Business interruption coverage (n=17; 13%) was the less reported category of risk transfer insurance.

The decision to initiate the development of a contingency plan or response procedures was primarily triggered by a disaster experience in the country (17%), legal requirements (16%) and observations of experiences in other countries (32%). ***This suggests that hazard experience can be an opportunity for changing DRM practice and systems.***

What is very noticeable is the ***low level of staff involvement in the plan design*** and in its associated training. Twenty-five (25%) percent of the businesses reported involving their employees in the contingency plan development process whilst capacity building in emergency response and response team development was flagged by 57% of the respondents.

This was noteworthy as it suggests that the focus of the staff is delivering the plan rather than in creating ownership.

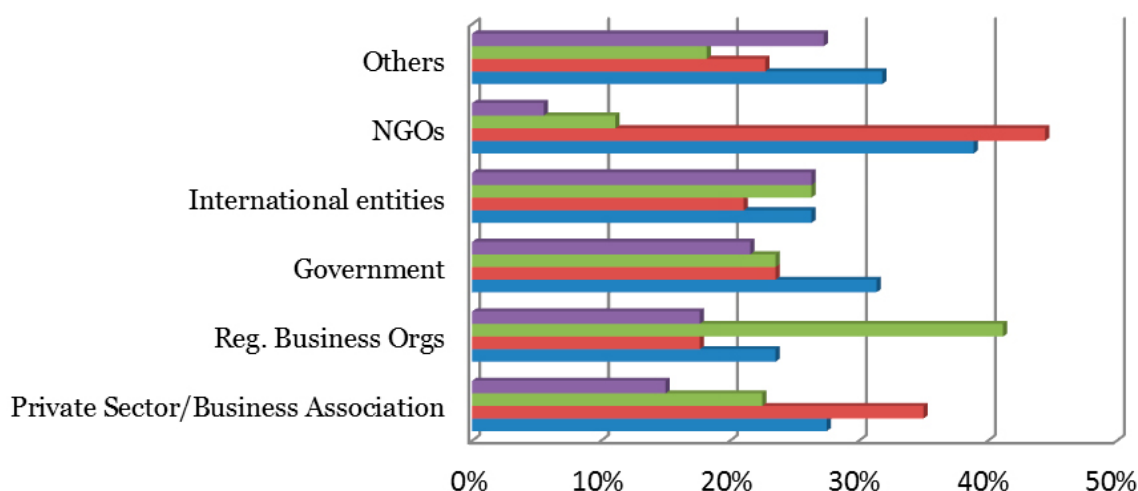
A diversity of sources was used to assist in the plan/procedure development. These included personal knowledge, company provided tools, use of templates, consultants, documents from umbrella organizations and governments/national disaster office. The government/NDO (40%) is the primary source for guidance in plan development (Figure 3).



The majority of the businesses that reached out to government entities/NDOs for assistance with the plan development (31%) had 5 or less employees whereas businesses with 6-15 employees primarily accessed support from the private sector/business associations (35%) and non-governmental organisations (44%). Forty-one percent of the businesses with 16-50 employees reported that their main source of support for the development process came from regional business organisations (Figure 4).

Size of the business appears to be an indicator of where assistance in contingency plan development is sought.

Figure 4: Size of business vs source of BCP development support



These results indicate that the locally umbrella business organizations in BVI and Dominica have not the major drivers of contingency planning in their sector. The NDOs/government as a main source of support for contingency planning in the private sector can be a handicap where these entities are not well staffed. The leadership of the locally based umbrella business organizations in promoting private sector contingency planning and recovery post impact may have to be carefully considered to ensure that efforts initiated in this engagement opportunity can be sustained.

6.2 Preparedness Outcomes

The questions posed here sought to capture the broad consequences of the Irma and Maria on the operations of the respondents and their assessment of the performance of the existing plans or procedures.

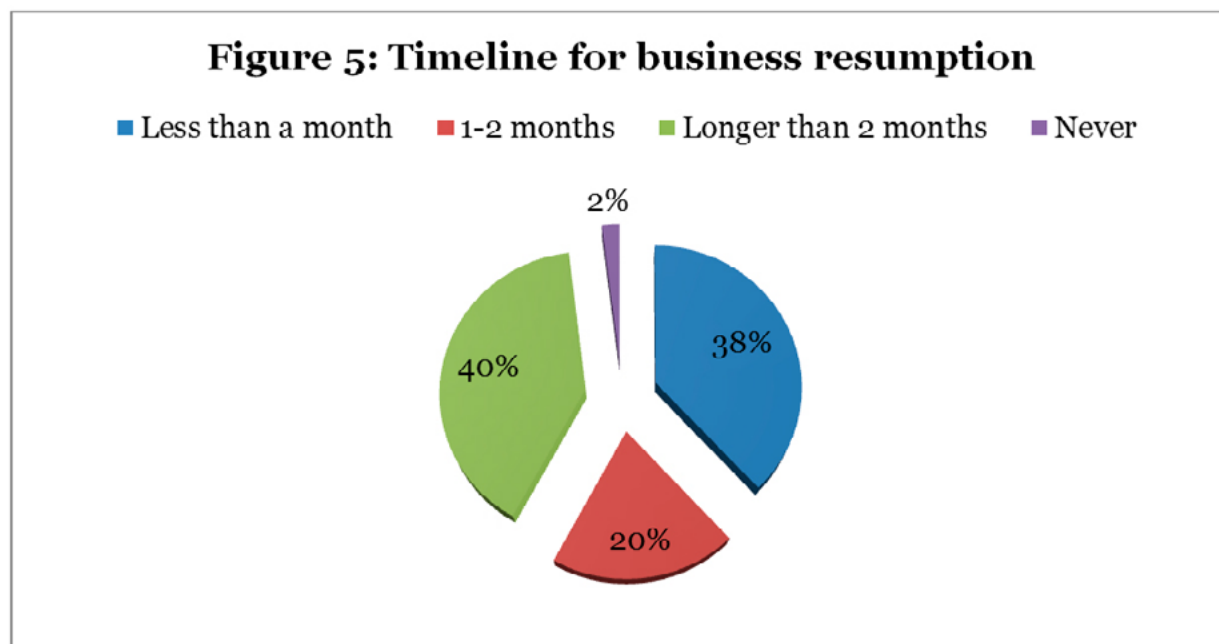
When asked about the usefulness of the plan in the context of these two events the majority of the respondents in both of the Study countries cited its contribution to asset and equipment protection, 41 and 37 percent respectively, followed by the minimized loss of goods (29%).

The available human resources were used for securing these assets, equipment and goods (56%) as well as for salvaging stock (63%). Security was a major challenge in the two study islands after the impact of hurricanes Irma and Maria (CDEMA Situation and RNAT Reports 2017; DAICA Maria Report 2017).

The signal here is that contingency planning among the respondents is centred on the protection of the tangible elements with a lens on restoration. The business continuity considerations are less present.

There was evidence of contingency arrangements for access to goods and services after an emergency or disaster (21%), though 15 % of those who had such arrangements felt they did not work as well as expected. The widespread disruption of utilities (communications 71%, power 65 % and water 55%) and the length of time for business resumption may be attributed to the magnitude of these events.

The majority of the business respondents (n=45; 40%) that were impacted by Irma and Maria in BVI and Dominica took longer than 2 months to resume business operations with a 38% (n=43) restarting operations in less than a month. Sixty-nine percent (n=24) of the businesses that resume operations in less than a month had business continuity plans in place prior to impact while 74% (n=26) of the businesses without BCPs took more than a month to resume operations with 46% (n=16) of those without BCPs taking longer than 2 months for the business to recover (Figure 5). However the contingency plans and procedures did not give much consideration to the continuity of these inputs.



Whilst the issue of how the forecast for an above active 2017 hurricane was not considered by the private sector in their readiness it was not filtered by this study, an early warning systems review in the BVI and Dominica suggests that this information was not internalized. Very few persons had perceptual images of how the consequences could be manifested (Collymore 2018; Kambon 2018).

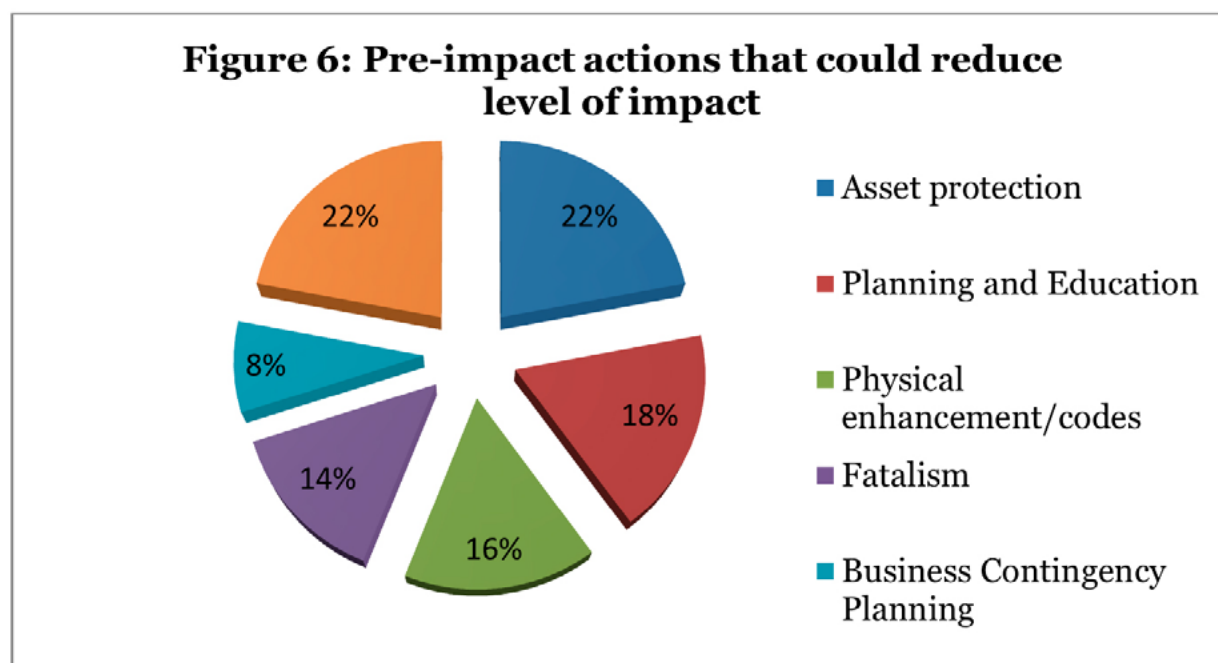
It is therefore important to focus on the assumptions of the plan and the scenario being considered for restoration, recovery and continuity. Given the process through which the existing plans were developed such deliberations could not be widely anticipated. However, these observations may need to be incorporated into future impact studies and the design of interventions into contingency or continuity planning for the private sector.

6.3 Lessons Learning and Post Events Culture

The focus of the questions here was to find what the respondents felt could have been done differently in preparing for Irma and Maria, where there are looking for support for recovery and what changes the contingency planning are being contemplated.

With respect to what could have been done differently, the respondents gave a diversity of responses most of which aligned to business continuity thinking. A number of action or steps were highlighted by the respondents that could have been taken prior to the passage of hurricanes Irma and Maria to reduce the impact on businesses.

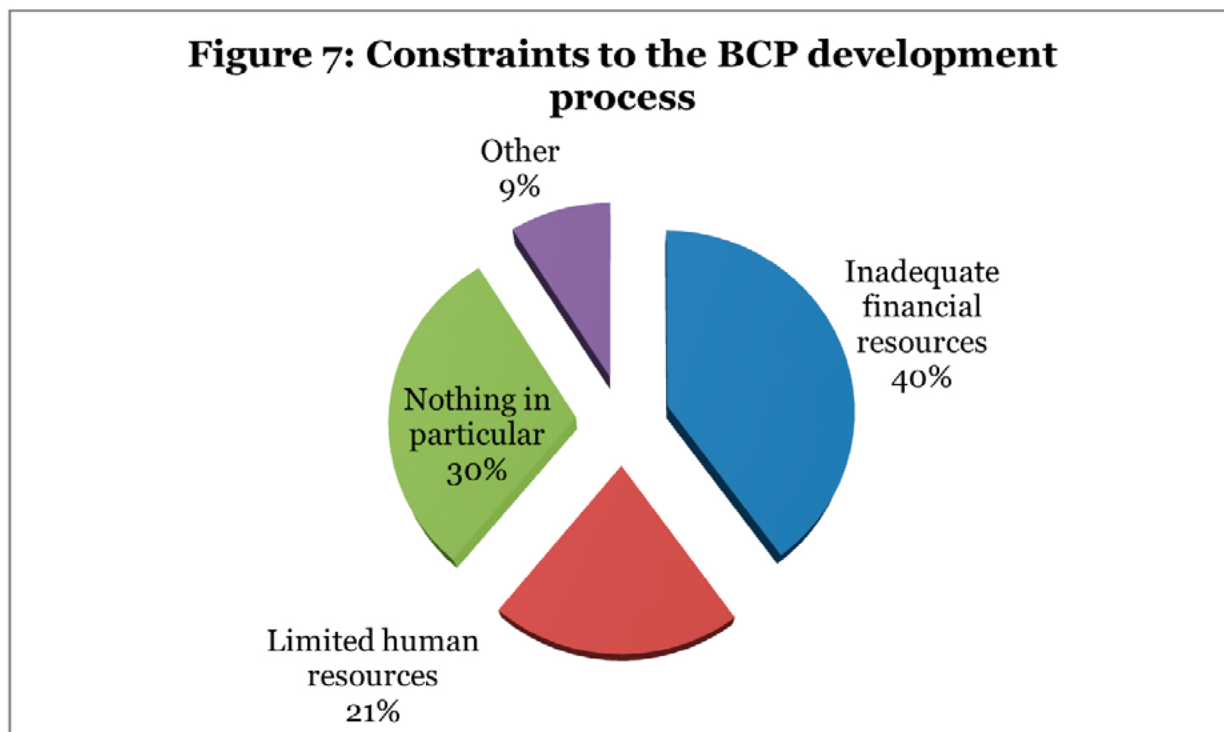
Thirty-eight percent (n=34) noted that asset protection (n=20; 22%) and physical enhancements/codes (n=14; 16%) were key actions that could have help mitigated the severity of the impact from the two Category 5 hurricanes. (Figure 6)



Although planning and education were also flagged by 18% (n=16) of the businesses as ways to reduce the impact of the hurricanes on the business operations, **only 8% (n=7) of the respondents identified having a business continuity plan as one of the steps that could have reduce the impact of Irma and Maria.**

Three key areas were flagged as constraints to the BCP development process with inadequate financial resources (n=52; 40%) being highlighted by the majority of the respondents along with lack of human resources (n=27; 21%) with the technical skills to develop the plans. Interestingly, 30% (n=39) indicated that nothing was restricting/constraining their efforts to have standard operating procedures to guide how business operations continue post-impact (Figure 7).

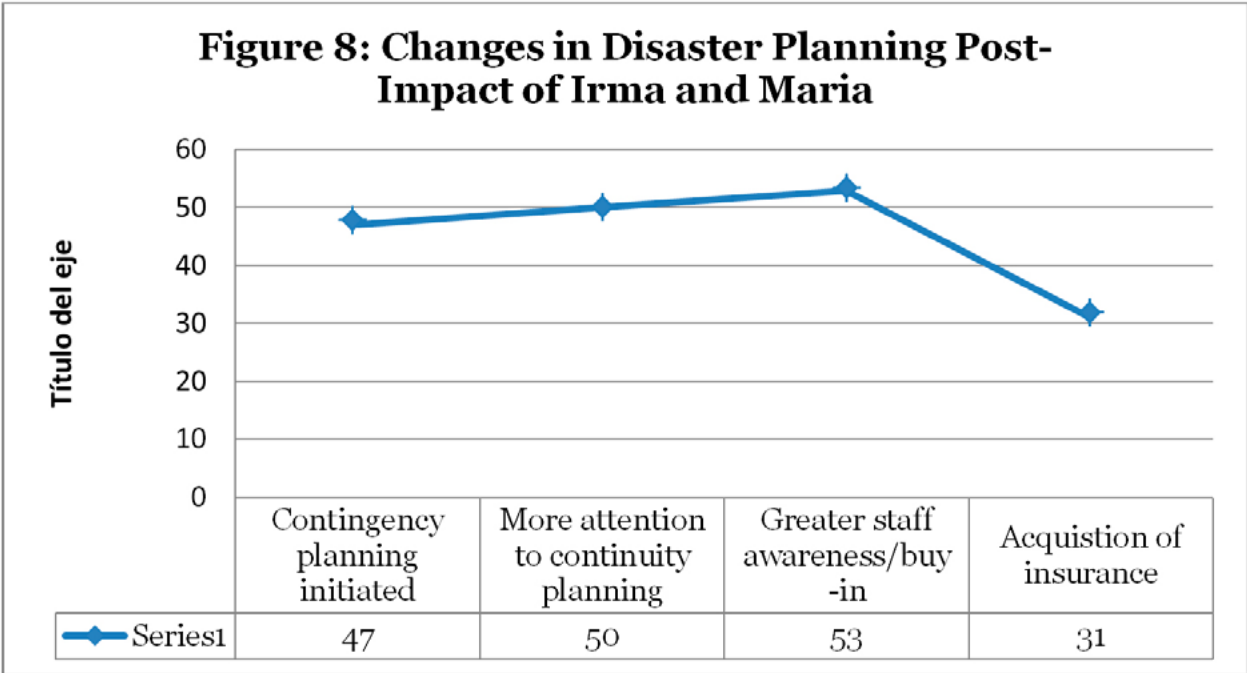
There appears to be an emerging recognition that contingency and continuity planning are investments.



Notwithstanding the low number of businesses that highlighted having a business continuity plan as a preparedness action, the experiences of hurricanes Irma and Maria appear to have led to a change in the business continuity of operations culture in BVI and Dominica with seventy-eight percent of the respondents embracing BCPs as effective disaster planning tools.

Forty-one percent (n=45) reported that they have either updated or are in the process of updating the disaster plan since Irma/Maria with another 37% (n=41) indicated an interest in doing such. Forty-one percent (n=24) of the businesses that were previously impacted updated their BCPs since the 2017 events with another 36% (n=21) indicating that they were thinking of doing such. Conversely 37% of the businesses that were not impacted before Irma and Maria reported that they updated their BCPs with a similar percentage indicating that they were thinking about updating/developing BCP.

This recognized need for a change in disaster planning practice among the respondents is reflected in the numbers indicating intent to enhance their contingency and continuity planning 47% and also awareness building 53% as seen in Figure 8.



However, one must be concerned about the 30% which has not initiated plan enhancement and or not planning to do so, even as the 2018 hurricane season was unfolding. Of the respondents who indicated that nothing in particular was hindering their BCP development process, 32% had an employee base of 5 or less employees with another 26% employing over 50 persons.

Whilst the Government/NDO was the primary source of assistance in contingency plan development, businesses indicated that their parent companies were twice as instrumental in the recovery of their operations (48%) as government entities.

7.0 CONCLUSIONS

The impacts of hurricanes Irma and Maria were devastating on the BVI and Dominica. The private sector was not spared the ravage and loss. Key utilities were disrupted for extended periods compounding the already heavy losses to property, equipment, goods and services.

Whilst the two Study Countries were recently impacted by hydro-meteorological events (BVI August Floods 2017 and TS Erica in Dominica 2015), among many in the last 30 years, contingency and continuity planning is limited in scale and scope.

Irma and Maria were characterized as high magnitude, rapid onset and intense impacting systems. Whilst for many they may be unprecedented and unfamiliar they may also be signals of things to come (Taylor 2017). The question really is what drives the assumptions of the planning process.

The results of the study suggest that the plan development process is not systematized and this can be a starting point for a contingency/continuity enhancement exercise. The current efforts may be characterized as preparing to respond and restore. Whatever the focus it presents a platform for coordinated support.

The information and resource base for supporting businesses in contingency and/or contingency planning is limited or where exists is not structured for ease of access.

Some evidence of lessons learning from the Irma and Maria experiences is evident but this requires addressing the information and resource access gaps, sustained information and education and capacity building. There is an opportunity to explore how a partnership between the business communities and higher level educational institutions can address these needs. The efforts of the Disaster Risk Reduction Centre, through the Enhancing Knowledge and Application of Comprehensive Disaster Management (EKACDM) Project, in collaboration with ARISE, to develop training materials and promote BCP in the schools of business and management can be a starting point.

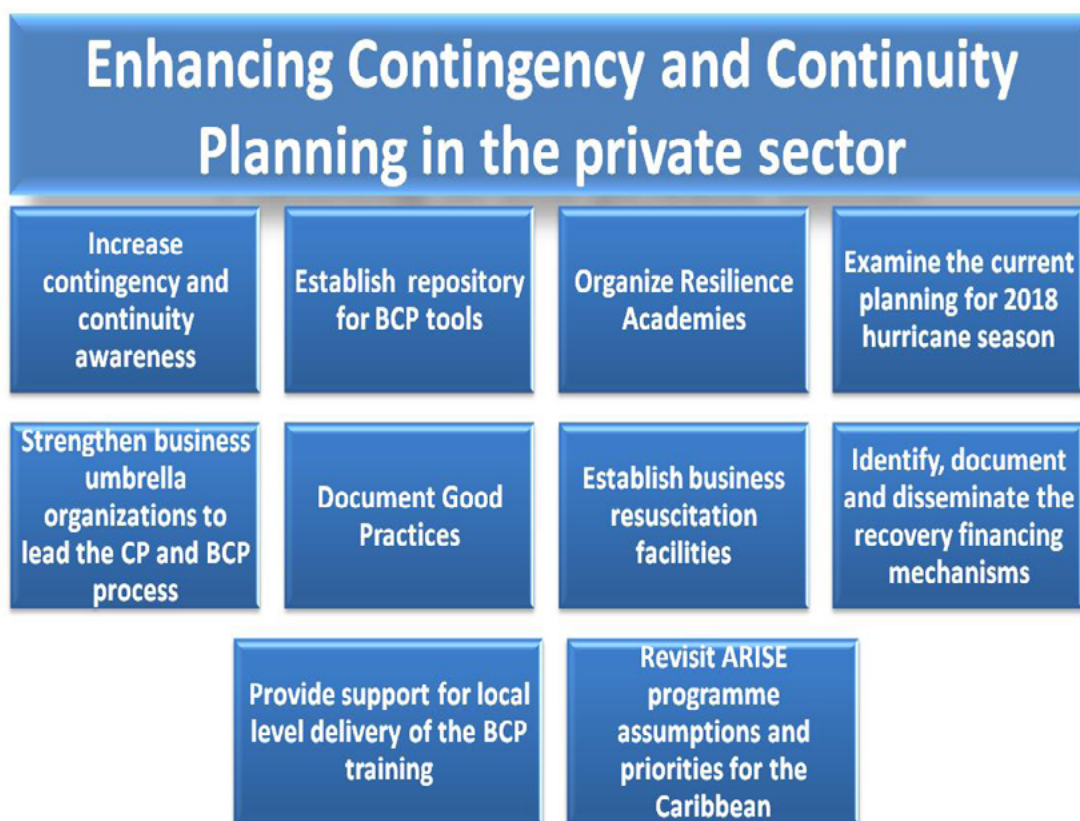
There is a need to advance the dialogue initiated between the private sector and government on the role of the sector in the recovery programme for both providing services and, as appropriate, incentives for business recovery. As efforts unfold to be better prepared for the 2018 hurricane season there is need for greater dialogue between the disaster management organizations and the business community on assumptions, expectations and roles. Such a dialogue should be approached as the initiation of an engagement process in building the private public synergy necessary for the desired Resilient States.

To get traction in changing the practice more predictable and accessible support will be required. There is an opportunity for the umbrella business organizations to provide leadership in this area and there is already some indication of a desire uptake. However, they will themselves need capacity enhancement to sustain the support.

The mindset of the disaster planning in the private sector, also in the public sector, will need to change from planning for response to planning continuity services within a lens for adaptivity. This should be the context in which the initiated ARISE interventions should be elaborated.

8.0 RECOMMENDATIONS

The recommendations below are not exhaustive of the actions and required to enhance contingency and continuity planning in the private sector. Rather they represent potential catalytic spaces for using the Irma and Maria experiences as both teachable moments and transformative processes in risk management thinking and practice.



1. **Use the high awareness of the need for, and efforts to improve, contingency and continuity to convert awareness to action.**
2. **Establish physical and virtual spaces where model tools, guidelines and expert guidance** can be provided.
3. **Organize Resilience Academies to provided short intense training opportunities for the business community to learn by doing.** Such sessions should be targeted to meet the diversity of business types with predictable schedules informed by the activity cycle of the targeted communities.
4. **Examine the current planning for the 2018 hurricane season** to establish defined roles and expectations.
5. **Strengthen business umbrella organizations to lead the CP and BCP process** using regional partnerships where appropriate.
6. **Explore the Good Practices documentation to promote horizontal experience sharing.**
7. **Establish business resuscitation facilities** to provided common services for impacted and dislocated small businesses and transition to business incubators going forward.
8. **Identify, document and disseminate the recovery financing mechanisms** for the business community existing at national level, of multi-lateral and bilateral organizations, multi-lateral financial institutions and within the private community itself. These should include both ex ante and ex post instruments. Orientation sessions on how to access the resources should be part of this exercise.
9. **Provide support** for local level delivery of the BCP training products being developed through the Disaster Risk Reduction Centre.
10. **Revisit the assumptions of the ARISE programme and priorities for the Caribbean.** Key considerations need to be given to stakeholder mapping and engagement strategies in its delivery.

APPENDIX I

List of Persons Consulted

Dominica

1. Ms. Lizra Fabien - Executive Director Dominica Association of Industry and Commerce (DAIC)
2. Mr. Kevin Francis - Executive Vice President, Dominica Hotel and Tourism Association (DHTA)
3. Mr. Severin Mckenzie - President Dominica Manufacturing Association (DMA) and President Dominica Business Forum (DBF)
4. Mr. Ellingworth Edwards - Managing Director, National Bank of Dominica
5. Mr. Alexander Stevenson - Executive Director, Small business Unit, Ministry of Commerce, Enterprise And Small Business Development
6. Mrs. Gloria Joseph - Permanent Secretary, Ministry of Planning and Economic Development
7. Mrs. Marvlyn James - General Manager, Fort Young Hotel
8. Mrs. Connie Mathew - Senior Manager, Unicomer (Dominica) Ltd. (Courts)
9. Mr. Fitzroy Pascal, National Disaster Coordinator.

British Virgin Islands

1. Mr. Louis Potter, Chairman of the BVI Chamber of Commerce and Hotel Association (BVICCHA)
2. Dr Evangeline Springer - Department of Disaster Management
3. (Kathleen Mullen, Alexia, Marian & Janet Oliver) – Members of the VI Charter Society
4. Vincent Wheatley – Sister Island Coordinator, Government of the BVI
5. Jane Tyrrell – Hotel Manager - Nanny Cay Resort & Marina
6. Chaunci Cline – General Manager, Village Cay Hotel & Marina
7. Mr Meade Malone - Managing Director MWM Global Services Limited
8. Keith LiGreci – Vice President, Marine Association
9. John Shirley – Managing Director, Original Virgin Canopy Tour
10. Hon Marlon Penn – Deputy Minister for Trade, Government of BVI
11. Shan Mohamed - Managing Director, Nagico Insurance
12. Mr Bernard Grant – Deputy Director, Water and Sewage, Government of BVI
13. David McDonald - Operations Manager, COREA's

APPENDIX II

LIST OF DOCUMENTS REVIEWED

British Virgin Islands Situation Report #1 Hurricane Irma, 2017
 British Virgin Islands Situation Report #2 Hurricane Irma, 2017
 British Virgin Islands Situation Report #3 Hurricane Irma, 2017
 CDEMA 2017. Hurricane Maria Post-Disaster Needs Assessment draft for Dominica. November
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[climate-resilient-country](http://www.bloomberg.com/news/articles/2018-05-10/dominica-plans-to-be-the-world-s-first-climate-resilient-country), By Nikki Ekstein, May 10, 2018

APPENDIX III

SURVEY INSTRUMENT

Study of Private Sector preparedness for enhanced resilience after Hurricanes Irma and Maria in Dominica and the British Virgin Islands

Welcome

During the month of September 2017 hurricanes Irma and Maria severely impacted the British Virgin Islands and Dominica. Given the projections for more severe hurricanes and intense periods of rainfall there is need to, therefore, build knowledge and awareness of current practices and experiences towards the resilience and sustainability of the sector enroute to safeguarding the Caribbean's future.

This survey seeks to review the efforts of the private sector in the British Virgin Islands and Dominica in preparing for, responding to and recovering from hurricanes Irma and Maria. The survey focuses on the current state of Business Continuity Planning (BCP) and Business Continuity Management (BCM) practices, awareness in the private sector and efforts to enhance these since the events.

It is within this context that we are inviting your participation in this survey. Your responses will help contribute to the development of good practices and knowledge on how contingency planning can be enhanced in the private sector.

We assure you that the information you provide will remain anonymous.

The survey is being led by Jeremy Collymore (Project Lead) on behalf of the UNISDR. For further information please contact us at: jeremyc699@gmail.com; cell 2462330681. He will be supported by Mr. Eddie Bruno (Dominica).

Thanks for your assistance!

Jeremy Collymore
Lead

1. Which of the following hazards have the potential to cause major destruction to your company?

- ☐ Floods
- ☐ Earthquakes
- ☐ Landslides
- ☐ Drought
- ☐ Other (please specify)

2. Has your company been disrupted by a hazard impact before Maria/Irma?

- ☐ Yes
- ☐ No
- ☐ Not sure

3. If yes, name one event and year.

4. Did your company have a disaster plan before Maria/Irma?

- ☐ Yes
- ☐ No
- ☐ Some procedures but not a plan
- ☐ Not sure

5. If your business did not have a disaster plan, please explain why

6. Which hazards does the disaster plan address? Check all that apply

- | | |
|---|-----------------------------------|
| <input type="checkbox"/> Floods | <input type="checkbox"/> Drought |
| <input type="checkbox"/> Earthquakes | <input type="checkbox"/> Tsunamis |
| <input type="checkbox"/> Landslides | <input type="checkbox"/> Fires |
| <input type="checkbox"/> Other (please specify) | |

7. How often was the plan reviewed and tested?

- ☐ Annually ☐ Never updated
- ☐ Every 2 years ☐ Not sure
- ☐ Periodically
- ☐ Other (please specify)

8. Does your plan include any of the following areas? Check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Information about the threats | <input type="checkbox"/> Guidance for protection of equipment |
| <input type="checkbox"/> Information on Roles and Responsibilities | <input type="checkbox"/> Guidance for protection and information |
| <input type="checkbox"/> Arrangements for emergency orders | <input type="checkbox"/> Key Contact Information |
| <input type="checkbox"/> Guidance for shut down | <input type="checkbox"/> What to do after impact |

9. What were the reasons that led your company to develop a disaster plan? Check all that apply

- ☐ Seeing experience in the countries
- ☐ Disaster experience in my country
- ☐ Parent company requirement
- ☐ Legal requirement
- ☐ Other (please specify)

10. Was there support from local business umbrella organizations in developing the plan?

- ☐ Yes
- ☐ Not
- ☐ Don't know

11. How did your company develop a disaster plan?

- ☐ Referred to documents from our umbrella association
- ☐ Referred to material from the government, NDO
- ☐ Used technical books
- ☐ Hired consultants
- ☐ Other (please specify)

12. What was the role of employees in the development of your disaster plan? Check all that apply

- ☐ Plan shared with them for their review
- ☐ Participated in emergency training (e.g. first aid, preparedness, etc.)
- ☐ Part of an Emergency Response Team
- ☐ Helped in the design of the plan

13. Which of the following does your company plan address? Check all that apply

- ☐ Evacuation Procedures
- ☐ Emergency Information & Communication
- ☐ Shut down procedures
- ☐ Company Recovery Procedures
- ☐ Alternate Operational Location
- ☐ Plan for Backing up Information & Records
- ☐ Staff welfare procedures
- ☐ Other (please specify)

14. Which of the following insurance types did your company have before Irma/Maria? Check all that apply

- ☐ Property insurance
- ☐ Professional liability insurance
- ☐ Workers' compensation insurance
- ☐ Home-based businesses
- ☐ Product liability insurance
- ☐ Vehicle insurance
- ☐ Business interruption insurance

Study of Private Sector preparedness for enhanced resilience after Hurricanes Irma and Maria in Dominica and the British Virgin Islands

During and After Impact

15. How useful was your disaster plan in dealing with Maria/Irma? Check all that apply

- ☐ Helping staff in undertaking their roles
- ☐ Timely securing of the property
- ☐ Minimizing loss of goods
- ☐ Minimizing loss of equipment
- ☐ Avoiding loss of revenue
- ☐ Not useful (Please Specify)

16. What aspects of the plan were implemented and worked?

- | | |
|--|---|
| <input type="checkbox"/> The staff safety and welfare procedures | <input type="checkbox"/> Business recovery |
| <input type="checkbox"/> Staff recall | <input type="checkbox"/> Insurance |
| <input type="checkbox"/> Protection of property | <input type="checkbox"/> Customer retention |
| <input type="checkbox"/> Other (please specify) | |

17. If you had a plan prior to the disaster, what gaps or limits were shown up by the disaster? List the three you consider most important.

1.
2.
3.

18. Did you have arrangements with your suppliers for emergency orders?

- ☐ Yes
- ☐ No
- ☐ Not sure

19. If you have arrangements with your suppliers for emergency orders, which of the following describes how they worked during Irma and Maria?

- ☐ Worked better than anticipated
- ☐ Worked well
- ☐ Did not work as expected
- ☐ Other (please specify)

20. Rank the elements of your business in order of most affected by the Hurricane Irma/Maria

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<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	The goods and services
<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	Staff
<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	Revenue
<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	<div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div> <div> <div></div> <div></div> <div></div> </div>	Supply Chain

21. What role did employees play during and after the disaster? Check all that apply

- ☐ Property security
- ☐ Salvaging of goods
- ☐ Contacting of clients
- ☐ Revenue recovery
- ☐ Other (please specify)

22. Which of the below best describe the impact of Irma in your business? Check all apply

- | | |
|--|--|
| <input type="checkbox"/> Total destruction of facilities | <input type="checkbox"/> Loss of water |
| <input type="checkbox"/> Major destruction of facilities | <input type="checkbox"/> Loss of stock |
| <input type="checkbox"/> Minor destruction of facilities | <input type="checkbox"/> Loss of customers |
| <input type="checkbox"/> Loss of power | <input type="checkbox"/> Loss of income |
| <input type="checkbox"/> Loss of communication | <input type="checkbox"/> Loss of records |
| <input type="checkbox"/> Other (please specify) | |

23. What were the financial losses from the disaster in US\$?

- | | |
|---|---|
| <input type="radio"/> Less than \$ 10,000 | <input type="radio"/> \$100,000 – 249,999 |
| <input type="radio"/> \$10,000 – 24,999 | <input type="radio"/> \$250,000 – 499,999 |
| <input type="radio"/> \$25,000 – 50,000 | <input type="radio"/> \$500,000 – 999,999 |
| <input type="radio"/> \$50,000 – 99,999 | <input type="radio"/> More than 1 million |

24. How soon after the disaster were you able to restart your operations?

- | | |
|----------------------------------|------------------------------|
| <input type="radio"/> 1-2 Weeks | <input type="radio"/> Longer |
| <input type="radio"/> 2-4 Weeks | <input type="radio"/> Never |
| <input type="radio"/> 1-2 Months | |

30. Which of the following may constrain your efforts?

- ☐ Lack of budget
- ☐ Lack of human resources
- ☐ Low employee interest
- ☐ Nothing in particular
- ☐ Other (please specify)

31. Where would you be looking for help?

- ☐ Private Sector/Business Association
- ☐ Regional Business Organisation
- ☐ Government
- ☐ International
- ☐ NGOs
- ☐ Other (please specify)

32. In which of the following ways has disaster planning in your business changed since the disaster?

- ☐ Contingency planning initiated
- ☐ Continuity of Operations being considered
- ☐ Staff awareness and buy-in for disaster planning
- ☐ Acquisition of insurance
- ☐ Efforts to improve relationships with suppliers
- ☐ Other (please specify)

33. Have you drawn down on insurance claims?

- | | |
|---|--|
| <input type="radio"/> Yes | <input type="radio"/> Yes. Claims denied |
| <input type="radio"/> Yes. We are awaiting payment | <input type="radio"/> No. |
| <input type="radio"/> Still putting together our claims | <input type="radio"/> Not applicable |



PRIVATE SECTOR STUDY PREPAREDNESS FOR ENHANCED RESILIENCE AFTER HURRICANES IRMA AND MARIA IN DOMINICA AND THE BRITISH VIRGIN ISLANDS



UPS is an active member of the ARISE initiative and supported the study financially as a contribution to



This study was prepared under the framework of the ARISE initiative in the Caribbean which is jointly coordinated by the UNISDR Regional Office for the Americas and the Coordination Unit of CDEMA.



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