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Cohort 4: Climate-related security risks and sustaining peace

Climate-related security risks and violent crime in Caribbean “frontier” coastal communities: issues, challenges and policy options

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1. Introduction

Although it contributes less than 1 percent to global greenhouse gas (GHG) emissions, the Caribbean¹ could be one of the regions most disproportionately impacted by climate change. Several of the countries there are Small Island Developing States (SIDS), whose economies rely on tourism, agriculture and fisheries for survival.² Seventy-five percent of their populations live in low elevation coastal zones and 50 percent live within 1.5 kilometres of the coastline. In addition, a significant portion of their strategic infrastructure, such as international airports, roads and capital cities, is located on the coast.

In recent years, the region has experienced an increasing number of storms³ accompanied by stronger winds, ocean surges and heavier rains that primarily affect coastal communities. Most analyses therefore portray climate change as an existential threat, which could destroy the socioeconomic fabric of the Caribbean.

Several of these reports have enumerated the vulnerabilities to which climate change has exposed the region. These developments will increasingly lead to unpredictable weather patterns, with more adverse effects on biological and socioeconomic systems, directly affecting sectors such as health, agriculture, forestry and water resources, as well as natural environments that have hosted species for centuries.

However, this paper argues that a more vulnerable category of “frontier” coastal communities exists even among the vulnerable residents of the Caribbean overall. These more vulnerable communities are poorly served by current socioeconomic responses to climate change and risk being left behind. It argues further that criminal groups are able to instrumentalize the vulnerabilities in these communities and that because previous climate adaptation and mitigation responses have not accounted fully for these security-related dimensions related to the worsening of vulnerabilities,

¹ In the context of this paper, the Caribbean refers to the 15 CARICOM Member States.

² With the exception of Trinidad and Tobago, whose economic mainstay is oil and gas.

³ For example, Hurricane Dorian in Bahamas in 2019, which claimed around 52 lives; Hurricane Maria in 2017 which claimed over 3,000 lives in the region and led to \$96.1 billion in damages; and Hurricane Irma, which occurred in the same year but was less severe in terms of damage and loss of lives.

climate-related security threats to the Caribbean are grossly underestimated.

Using the frontier coastal communities as the focus, this paper analyses emerging patterns of vulnerabilities and how they have pressured and pushed local actors, including women and youth, to engage in adversarial coping mechanisms, thereby undermining security and further exacerbating cyclical vulnerabilities. The paper establishes that the social consequences of these tactical manoeuvrings are significant enough to undermine attainment of the objectives of current climate change mitigation and adaptation strategies. It provides recommendations to policy makers and community stakeholders on how to integrate security-related risk factors into response mechanisms.

2. Background and conceptual clarification

The Caribbean region is one of the world's most advanced in developing normative, strategic, programmatic and policy frameworks for climate change mitigation and adaptation, mainly aligned to the objectives of UN Agenda 2030 and the SDGs. Together with the GEF and the GCF, the Caribbean Community Climate Change Centre, which is a one-stop structure for coordinating and facilitating implementation of mitigation and adaptation measures, have also been crafting additional interventionist programmes to facilitate development assistance for climate action. Paradoxically, this is occurring in a region that is highly vulnerable and composed primarily of ODA-ineligible high- and middle-income countries. However, most of these frameworks compartmentalize the challenges and solutions along sectoral lines and are not well funded (see Ramsay, 2013).

Policy and programmatic measures in some countries and institutions in the region have mainstreamed the security dimensions. These include engagements by the Dominican Republic at the UN Security Council, where it raised the profile of the security dimensions of extreme weather and sea-level rise in the country. In addition, the Caribbean Disaster Emergency Management Agency's (CDEMA) resilience roadmap acknowledges the connections between climate change and security. However, most CARICOM countries need to strengthen the depth, robustness and interconnectedness of climate change and security.

It is trite to state that the impacts of climate change impact are critical to citizens' security. Climate-linked economic contraction may undermine a state's financial resources and ability to counter criminal activities

through effective policing and well-functioning justice systems. Thus, a breakdown in the rule of law following a hurricane can drastically reduce tourism revenue for significant periods if the event creates negative perceptions about a country's safety and stability.⁴ In such a situation, climate change will become a risk multiplier, contributing to further social upheaval and tensions (UNEP, 2019).

Fetzek (2019) provides an overview of how climate change could undermine citizens' security in the Caribbean, identifying risk factors such as economic contraction, violence and criminal activity, disaster impacts and political repercussions, food and water insecurity, damage to livelihoods, and social unrest. Underlying governance and security challenges in the region have exacerbated these problems, coupled with deterioration in the economies and security of some of the region's neighbours, including Venezuela. Fetzek cites additional risk factors, such as maritime smuggling and the challenges of organized crime, with the attendant human, weapon and drug trafficking by gangs and cartels. He concludes that climate change impacts and security threats are likely to interact with and amplify each other and that climate change is a factor in the region's current and future security discourse. It must thus become part of the region's broader security and resilience discourse and contribute to comprehensive risk management planning.

In specific terms, climate risks "aggravate" the crimes referred to above. Those risks include: (i) rising sea levels and the attendant beach erosion; (ii) increased surface temperatures; (iii) increased sedimentation of coastal waters; (iv) ocean warming; and (v) storms and hurricanes, with their associated displacement of persons living in coastal communities. The havoc that the risk factors mentioned above have wreaked on the environment, livelihoods and productivity of vulnerable communities has shown the traditional, environmentally-focused response mechanisms to be insufficient to address the impacts. This is because these risk factors often lead to job losses, loss of homes, exposure to physical and psychological danger, loss of social standing and forced displacement of persons with the related lack of access to social services and infrastructure. Given weak governance capacity to anticipate and manage the fallout of these crises, many affected persons are trapped in a vicious cycle of crises, forcing them into relative deprivation, frustration and aggressive reaction. The adverse situations in which they find themselves compels them to struggle for survival through any means possible. More often than not, this desire to survive pushes them into a life of crime and violence.

4 https://climateandsecurity.files.wordpress.com/2020/02/world-climate-security-report-2020_2_13.pdf

Coastal communities are typically groups of persons living together in the geographical areas at the intersection between land and water. They often, but not always, live in areas that: (i) are below sea level; (ii) leave them vulnerable to rising sea levels; (iii) make them dependent on the sea for their livelihoods; and, (iv) are often difficult to reach because of relatively weak infrastructure, particularly access roads.

This paper uses the term “frontier communities” to delimit the group of persons who live in specific coastal communities that are generally exposed to adverse social, economic and security situations due to their levels of poverty, overcrowding or mass emigration from their territories, marginalization in terms of the provision of basic social infrastructure, relatively low quality of life, few options and opportunities for survival and livelihoods, and prevalence of different crime and violence. These indicators have been adopted to keep the focus of the paper clear and unambiguous.

In these frontier coastal communities, phenomena such as erosion of beaches and inundation of coastal lands, together with coastal flooding, saltwater intrusion, distortion of mangrove and reef habitats, pollution and the attendant migration of water species farther into the sea, often lead to loss of potential income from tourism and fisheries. This is due to the destruction of aquaculture, forced resettlement of community members and disruption in the provision of social infrastructure. Additional spatial constraints often include non-adherence to building codes, lack of planning of settlements and lack of government capacity to enforce adherence to such plans, as well as social disarticulation of family life.

Residents of these frontier communities risk being left behind on the path to achieving the 2030 Agenda because of their disproportionately high exposure to mass poverty, polluted environments and vulnerability to crime and violence.

3. Crime, insecurity and tactical manoeuvring in the Caribbean: An overview

The Caribbean region is often said to have “a violence problem” based on its “uniquely high level of violent crime,” which is supposed to result from socialization into a culture of violence in the home, as indicated by the high tolerance of violence against women and children.⁵ This “early problem behaviour,” which spurs the normalization of violence in later life, leads to complex layers of consequences, further increasing the chances of aggressive retaliation, leading to cycles of

violence in society (Yagoub, 2017). Most adults in the region have either been victims of violent crime, witnessed violent acts against close family members or experienced some form of victimization associated with organized crime networks.

In terms of the spatial manifestation of crime and violence, these phenomena are spread across all communities in the region. However, in most cases, violent crimes are carried out by gangs and concentrated in communities variously described as “distressed,” “at-risk” or “crime-prone.” Such communities are often far from tourist resorts and are characterized by high physical disorder and low trust in public institutions and are bifurcated by rival gangs into spheres of influence. Gang warfare, which involves turf battles over the sale of illicit drugs and other forms of criminal activities, often leads to escalated shoot-outs, injuries and other violence. Direct targets may be killed and collateral damage is left in its wake. Persons who live within such communities are more likely to be victimized through attacks and/or threats of gangs. While most of these distressed communities are not along the coastlines, a number of coastal communities could be described as distressed and at risk.

The CARICOM IMPACS⁶ classification of security threats in the region ranks climate change as a category II threat level. The first group includes issues that pose significant immediate threats, with a high probability of occurrence and high impact and that constitute a present danger. These include gangs and organized crime, drug trafficking, illicit firearms, cybercrime, transnational organized crime, financial crimes and natural disasters. The second category includes threats with high probability and high impact, but relatively disproportionate impact across the region. These include violent extremism and terrorism, human trafficking, migratory pressures, corruption and climate change. They also constitute substantial threats to some of the States in the region. Climate change issues are placed in the realm of future threats.

However, current security threats in the region clearly show the impact of climate change, as reflected in the increased engagement of fisherfolk in arms and drug trafficking, human trafficking, and arms proliferation throughout the coastal regions. The continued use and expansion of special security operations and armed reaction to combat crime and violence has not led to immediate significant improvement or built confidence for longer-term violence reduction in the region. Of particular interest, while most governments

5 <https://publications.iadb.org/publications/english/document/How-Safe-Are-Caribbean-Homes-for-Women-and-Children-Attitudes-toward-Intimate-Partner-Violence-and-Corporal-Punishment.pdf>.

6 Unpublished highlights of the report of the review of the CARICOM Crime and Security Strategy (CCSS).

have mentioned plans to create violence prevention programmes, timely implementation has been difficult.

4. Climate and environmental change in coastal communities in the Caribbean

Coastal communities in the Caribbean are particularly highly exposed to the effects of climate change. The associated impacts in different areas are examined below.

Rising sea levels and erosion of beaches

Rising temperatures cause sea levels to rise. This, in turn, increases growing erosion, which primarily affects coastlines and communities that live close to them. The destruction caused by hurricanes Irma and Maria in 2017 illustrates the impact of rising sea levels in the Caribbean. Analysts have projected that persons and infrastructure in low-elevation coastal regions will become even more exposed to such storms in the future.

An analysis by the Inter-American Development Bank (IADB) reveals that projections of sea level rise and floods, reaching at least 0.5 metres above high tide line at shore, will become common throughout most of the Caribbean within the next half-century and probably sooner. It notes further that flooding above one metre may become common by the end of the century and that permanent sea level rise exceeding this threshold is possible (Strauss and Kulp, 2018). The impact will be felt in two major ways: permanent inundation of land, which occurs when rising seas push the local high tide line above the land's elevation; and coastal flooding, which becomes higher and more frequent as sea level increases (Strauss and Kulp, *ibid.*). If sea level rises by one metre, the cost to the tourism sector could be as high as US\$149 million dollars, damaging 21 of the region's airports and flooding the land around 35 of the region's 44 seaports. With a two-metre rise, the sector would lose at least \$233 million. A one-metre rise would damage nine power plants and 31 airports and destroy 710 kilometres of roads.⁷

Increase in sea surface temperature and coral bleaching

Sea surface temperature (SST) offers insight into the behaviour of climatological phenomena such as convection cells, tropical storms and hurricanes, and prevailing winds. Studies have shown that the entire north tropical Atlantic, including the Caribbean Sea, has

warmed over the past century, concomitant with the warming observed in regional surface temperatures. According to Taylor and Stephenson (2017), SSTs in the wider Caribbean rose by $1.08 \pm 0.32^\circ\text{C}$ over the 20th century. In the Antilles (the region covering the insular countries in the Caribbean), the increase has been slightly higher, at $1.32 \pm 0.41^\circ\text{C}$ per century. They project that warmer future SSTs, which may range between 0.39 and 2.21°C per century for low CO₂ emission scenarios, will impact the region's climate, leading to greater hurricane intensity and damage to coral reefs and other marine ecology.

Coral reefs are key areas that have experienced the impact of SST increase. They provide habitat conducive to marine resources and serve as nurseries for fisheries and sources of beach sediment. Coral reefs are also important resources for the tourism sector, which takes patrons on boat rides into the sea to see these natural reefs and their abundant resources. Corals provide important services for the Caribbean's fishing, tourism and pharmaceutical industries and are a main form of coastal protection. Thus, they contribute significantly to biodiversity and are a source of livelihoods, economic and social development.

In terms of climate change impacts, the region's coral reefs are highly sensitive to SSTs. Mass bleaching has occurred during very warm periods when thermal anomalies occur and average monthly temperatures reach 0.2°C and above (Taylor and Stephenson, *ibid.*). The Caribbean has experienced several coral bleaching events since the 1980s (e.g., 1997, 1998, 2005 and 2010), with the most intense events occurring primarily during the summer months (August-October), when SSTs are hottest for sustained periods. Experts suggest that this may change in the future as: (i) the median monthly SST range across the Caribbean Sea shrinks; (ii) the areal extent of very warm SSTs expands; and, (iii) SSTs become or remain warm (comparable to present-day summer levels) much earlier in the year. They argue that these conditions would create conditions favourable for coral bleaching to persist well beyond the normal summer months, as observed in the 2005 and 2010 coral bleaching events in the Caribbean.

Bleaching events in the Caribbean have also been linked to warmer regional SSTs associated with El Niño⁸ events. It is projected that extreme El Niño events will double over the next 100 years under global warming (Cai et al., cited in Taylor and Stephenson, *ibid.*), suggesting that the frequency of bleaching events will also increase. A number of studies have concluded that

⁷ <https://www.independent.co.uk/environment/climate-change/rising-sea-level-threatens-hundreds-of-caribbean-resorts-says-un-report-2148034.html>.

⁸ El Niño refers to an irregularly occurring and complex series of climatic changes affecting the equatorial Pacific region and beyond every few years, characterized by the appearance of unusually warm, nutrient-poor water. Its effects include reversal of wind patterns, drought and unseasonal heavy rain in parts of the Pacific, Australasia and South America.

most of the Caribbean will experience the conditions that currently lead to coral bleaching annually or biannually over the next 20 to 50 years (e.g. Donner et al., 2007).

Finally, rising sea temperatures have been cited as a causal factor in the proliferation of sargassum, as nutrients from agricultural fertilizers and wastewater from cities in other regions end up in the sea, leading to algae blooms. According to Stephenson and Jones (2017), pelagic (floating) sargassum, or seaweed, originating in the adjacent Sargasso Sea, has floated regularly into the Caribbean region. Sargassum provides feeding and spawning grounds for many marine species and is an essential habitat for all fish sold commercially across the Caribbean region. However, events in which copious amounts of sargassum have washed up along the coasts of the Caribbean have intensified in recent years. Extreme sargassum events occurred in 2011, 2012, 2014, 2015 and 2016. Sargassum shows substantial spatial and temporal variability, as it is influenced by ocean conditions (such as sea surface temperatures, ocean acidification and wind disturbances) and even thrives in warmer water.

These unprecedented quantities of sargassum that have washed ashore in recent years prevent fisherfolk from entering the water because it becomes tangled in their nets and propeller engines, disrupting livelihoods in coastal communities.

Sedimentation of coastal waters

Coastal sediment processes refer to forces such as wind, waves, currents and tides that erode, transport and deposit sediment along the shoreline. Natural sedimentation, which includes erosion of bedrock and soil and decomposition of plants and animals, is an important process in the development and maintenance of coastal habitats, including wetlands, lagoons, estuaries, seagrass beds, coral reefs, mangroves, dunes and sand barriers (UNEP/Gems Water Project, 2006). However, anthropogenic or human-caused activities often change erosion and sedimentation processes and modify the flow of rivers and the amount of sediments they can carry. The pressure of climate change increases land-based activities in the agriculture, forestry and urbanization sectors, which contributes to this sedimentation. As outlined in the Caribbean Environment Programme and by UNEP,⁹ the main impacts of increased sedimentation in the region include:

- smothering marine communities and burying them completely, leading to suffocation of corals, mangrove stands and seabed;
- harming fish by irritating or scouring their gills and degrading habitat (for example, when gravel containing buried eggs becomes filled with fine particles, thus reducing available oxygen);
- blocking watercourses, storm drains and reservoirs, leading to costly dredging and increased risk of flooding; and,
- physical and/or chemical absorption, by sediments, of many toxic organic chemicals, heavy metals and nutrients. Increased sediment loads in the marine environment can also lead to increased deposition of these toxic substances, which produce additional negative impacts, such as eutrophication.

Storms and hurricanes

The Caribbean is one of the most vulnerable regions in the world to natural disasters, particularly those caused by tropical cyclones. Hurricanes are major sources of macroeconomic vulnerability. Fifteen Caribbean islands rank among the top 25 in terms of tropical cyclone disasters per square kilometre. An additional seven rank in the top 50 (Acevedo, 2016). Hurricanes often leave countries with a fractured infrastructure, displace thousands of persons internally and require the government to mobilize the necessary resources to finance emergency assistance and relief, recovery and reconstruction. Table 1 summarizes the impact of extreme events occurring in the Caribbean region.

Drought

Apart from sudden-onset hazards, the Caribbean is also affected by slow-onset ones, which can be overlooked. They include droughts, which can last for several years. In 2009-10, for example, drought led to severe water shortages in the region.¹⁰ It is the likeliest cause of severe food shortages affecting the region's 40 million inhabitants and is a key issue for Caribbean food security, according to the United Nations Food and Agricultural Organization.¹¹ In Haiti, for example, over half of the 2015 crops were lost to drought, which pushed about one million people into food insecurity. An additional one million suffered food shortages throughout the region, according to the United Nations Office for the Coordination of Human Affairs.¹²

9 <http://cep.unep.org/publications-and-resources/marine-and-coastal-issues-links/sedimentation-and-erosion>.

10 <http://www.fao.org/americas/noticias/ver/en/c/419202/>

11 <https://www.sciencedaily.com/releases/2017/08/170801160357.htm>

12 <https://www.preventionweb.net/news/view/61807>

Table 1: Climate change impacts in the Caribbean since 2004

Climate Change Variable/ Extreme Events	Impacts
Tropical storms and cyclones/ storm surge	<p>Hurricane Ivan in 2004 made landfall in Grenada, causing significant damage to St. George, St. David, St. John and St. Andrew. Estimated cost of damages: \$885 million.</p> <p>The south coast of Jamaica also experienced significant damage from Ivan. Fourteen percent of the total population was impacted and damages totalled \$595 million.</p> <p>In 2007, Hurricane Dean uprooted 40 percent of mangroves in the Portland Bight Area, Jamaica. Those young mangroves were particularly affected because they had only been planted recently, as part of recovery efforts following Hurricane Ivan in 2004.</p> <p>Although Tropical Depression 16 never made landfall in Belize, it generated losses totalling \$27.1 million (2 percent of GDP).</p> <p>Hurricane Sandy 2012 caused storm surge events in the north-eastern/eastern coasts of Jamaica. Flood events affected approximately 25 percent of the total population.</p>
Sea level rise	<p>Alligator Pond in St. Elizabeth, Jamaica experiences continued beach erosion. Coastal erosion of Las Cuevas, Blanchisseuse and South Cocos Bays in Trinidad and Tobago has been observed.</p> <p>Signs of a receding coastline in Manzanina Beach have also been noted in Trinidad and Tobago.</p>
Sargassum	<p>In 2014, sargassum blanketed marine areas in Jamaica and across the Caribbean as far north as Massachusetts, affecting fisheries, aquaculture, shorelines and tourism.</p>

Source: Stephenson, T. and Jones, J. (2017). "Impacts of Climate Change on Extreme Events in the Coastal and Marine Environments of Caribbean Small Island Developing States (SIDS)," Caribbean Climate Change Report Card: Science Review, Kingston: UWI Mona.

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Given the situation described above, many people living along the coastlines are more vulnerable to the impact of climate change. The manifestations of the multiple vulnerabilities in poor and low-income communities include: income loss due to the socio-economic effects of these environmental transformations; forced displacements; dwindling opportunities for jobs and livelihoods; reduced fishing and aquaculture activities by fishing communities; increased non-communicable diseases and productivity incapacity due to environmental hazards to coastal communities; and lack of incentives to stimulate further economic activities.

5. Climate risks and violent crime in frontier communities: Impacts and coping mechanisms

Regional and national plans have been developed to prevent violent crime in the Caribbean, but none has mainstreamed climate-related threats in its design and implementation. This has perhaps been due to

the inadequate attempts to establish strong linkages between climate change and violent crime. However, based on emerging evidence, it has become critical to highlight how this phenomenon has acted as a risk multiplier in the frontier coastal communities.

Increased attacks at sea: In recent years, the Caribbean region has witnessed a gradual rise in piracy and armed attacks within territorial waters. In 2017, 71 attacks at sea were recorded in the Latin America and the Caribbean region, a drastic 163 percent increase over 2016. Fifty-nine percent of the incidents involved yachts, while the rest involved bigger ships. Countries with increasing numbers of incidents include Suriname, Guyana, Trinidad and Tobago, St. Vincent and the Grenadines, and St. Lucia. An estimated \$1 million was lost to pirates in 2017, including as a result of kidnap for ransom.¹³ Though the trend abated a bit in 2019, the year did not end without major incident. A series of attacks and kidnappings occurred in Trinidad in early 2019, for example, with hundreds of thousands of dollars paid

in ransom and boat engines, gold jewellery and other valuables¹⁴ traded for hostages' freedom.

Although most analysts have linked the resurgence of piracy and armed attacks at sea to the Venezuelan crisis and although most attacks occur within the regions bordering Venezuela, climate change has contributed equally. Analysts surmise that climate change and extreme weather have contributed to pollution of the sea and overfishing and have led to more frequent occurrences of natural hazards such as hurricanes, which destroy fisheries and fishing vessels, and lead fisherfolk to seek alternative sources of incomes, including criminality and piracy. Media reports note a connection between local fishing conditions, for instance, and increased rates of piracy and attacks at sea. Indeed, most of the attacks¹⁵ occurred in poor, underdeveloped and underserved communities adjoining ocean bays, where the pressures of climate change had caused fishing and related businesses to deteriorate.

Increased trafficking in persons, arms and drugs:

The challenge of human mobility has been a major criminogenic factor in the region. This is due to the historical trend of movements of nationals of Caribbean countries to “greener pastures”—that is, North America and Europe—seeking better livelihoods. Indeed, some of the persons who emigrated lacked the requisite skills, got caught up in organized crime, were deported back to the region and contributed to the evolution of a culture of violence.¹⁶ In recent years, economic and political turmoil in parts of Central America has caused some movement of “persons of interest,” including economic migrants, to the Caribbean (UNODC, 2011).

Due to the impact of climate change, the marine ecosystems in the region have experienced unprecedented challenges over the past decades. This has led to the overexploitation of fisheries (including unreported and unregulated fishing), pollution of coastal waters (e.g., sewage and agricultural runoff), an increase in invasive species, habitat destruction and coastal erosion. Some 55 percent of the commercially harvested fishery stocks in the region are over-exploited or depleted and some 40 percent of the stocks are fully exploited. The impact over 10 years has been to reduce fish production to around 1.4 million tonnes, which is 300,000 tonnes below the 30-year average, with implications for livelihoods. This also creates pressure for fisherfolk to engage in trafficking, which yields larger

and immediate monetary returns (Monnereau and Oxenford, 2017).

Given the vast, unpoliced coastlines of most of the affected countries, migrants often travel by pirogue and other small boats that are owned and operated by locals living in, and with vast knowledge of, the coast. In addition to human trafficking, increased trafficking of arms and drugs has also been reported. Due to the damage to livelihoods in many coastal communities, some fisherfolk have lost their jobs. With no way to feed their families, they turned to using their boats with organized criminal groups, which in turn utilized them for trafficking. As the gateway for trafficked humans, drugs and arms, many underdeveloped coastal communities have become battlegrounds for rival gangs that seek to control the flow of these illicit commodities.

“Criminogenic” local governance by “community leaders” and gang activities:

Creating resistance to State institutions and the ideal they represent remains one of the main coping mechanisms of criminogenic coastal communities in the Caribbean region. Gang leaders use their financial influence and control of the instruments of violence to gain control of local contracting, compromise state institutions and coerce already economically disempowered community members into joining their criminal networks.¹⁷ Persons who live within such communities are more likely to be victimized through gang attacks and/or threats. Examples of such communities are Sealots and Las Cuevas in Trinidad and Tobago, where in 2019, gang wars led to killings and the destruction of boats belonging to fisherfolk involved with rival gangs.¹⁸

Dwindling resources and economic opportunities in such communities have largely weakened their ability to resist gang influence. Families with young males often enlist them in a gang to generate illicit income. An IOM report¹⁹ found that teenagers between the ages of 13 and 17 in those communities were usually involved in illegal activities, including selling drugs, working as a lookout for drug dealers and theft/housebreaking. They were also often subjected to child labour and, at times, commercial sex activities.

The violence that occurs in the high-risk coastal communities has reduced foreign direct investments, increased the cost of doing business and diverted resources from the social sector (health and education, particularly) to crime control and the administration of

14 <https://www.hstoday.us/subject-matter-areas/maritime-security/new-pirates-of-the-caribbean-driven-by-venezuela-crisis-hurricanes-climate-change/>

15 Piracy occurs outside territorial waters, while incidents within territorial waters are classified as “armed attacks at sea.”

16 Charles, Christopher A. D. “The Reintegration of Criminal Deportees in Society.” *Dialectical Anthropology*, vol. 34, no. 4, 2010, pp. 501–511. JSTOR, www.jstor.org/stable/29790973. Accessed 1 June 2020. See also, <http://www.guardian.co.tt/article-6.2.356546.cf9b78e378>

17 <https://newsday.co.tt/2020/05/19/griffith-no-contracts-no-gang-killings/>.

18 <https://www.guardian.co.tt/news/reclaiming-las-cuevas-sea-lots-after-sandman-and-dole-6.2.901056.fe18d7c70b>.

19 https://publications.iom.int/system/files/pdf/exploratory_assessment2.pdf.

justice.²⁰ The IADB survey further indicated that 23 percent of firms in the region have experienced losses from crime and 70 percent paid for private security.²¹ Violence and crime also limit the opportunities for poverty eradication in the so-called “high risk” communities. This has created a deeply divided society, characterized by bitter resentments and mistrust.

Human security, reproductive rights and gender-based violence: Some argue that climate change increases the risks of violence against women and girls, as well as children, particularly within distressed coastal communities. The stress experienced by communities directly exposed to this challenge often aggravates frustration and aggressive behaviours. Internally-displaced women and children may be subjected to sexual violence and exploitation. In addition, affected communities are exposed to increased risks of opportunistic diseases, such as measles, respiratory infections and malaria. Children are particularly vulnerable. According to a 2019 UNICEF report, an estimated 761,000 children were internally displaced by storms in the Caribbean between 2014 and 2018, which was described as the hottest five-year period on record in the region. They lack access to essential services, including education, protection and healthcare facilities. This figure represents an increase of nearly 600,000, compared to the 175,000 children displaced in the preceding five-year period (2009-2013). Since the coastal communities are classified as high-risk locations, insurance for the fishing industries is often unavailable and/or unaffordable, which, in turn, negatively impacts livelihoods, infrastructural development and tourism. These forms of violence have thus served as stress/threat multipliers.

Artificial division of coasts, risks to national cohesion and geo-spatial implications: One of the most profound security implications of climate change that is not yet obvious is the geo-spatial bifurcation—or division—of coastal communities into what may be labelled, colloquially, as “touristic” and “contaminated” coasts. The former are coastlines that are not yet physically damaged by the impacts of climate change and are therefore deemed habitable by tourists. They are usually the focus of huge development in the hospitality industry, with the additional value chain developed around them that provides inhabitants with enormous economic opportunities, particularly in the service industry.

Conversely, distressed communities are often those plagued by environmental degradation caused by erosion, sargassum, and related phenomena. Tourists

are thus pushed away from those areas. This degradation also spurs a pattern of internal displacement in which persons from those communities seek greater opportunity in the “touristic” areas, which are already saturated and, naturally, would have limited job opportunities to offer the newcomers. As a result of this push and pull, crime and other illicit activities increase in the touristic communities, which cannot contain everyone who seeks gainful employment. In geospatial terms, the areas affected by environmental challenges do not receive sufficient focus in terms of environmental remediation, infrastructure development and alternative economic opportunities. This could ultimately lead to resentment, anger and frustration and impair efforts to achieve social cohesion in the Caribbean.

6. Policy options for integrated institutional response

Based on the foregoing, emerging patterns clearly suggest that climate change affects different communities disproportionately. It is also clear that climate change can constitute an aggravating factor for certain types of crime and security challenges in distressed communities, yet, current climate change policies do not mainstream climate-related security risks adequately. An integrated approach, by CARICOM and the region’s governments, supported by United Nations agencies, will necessarily rest on the following pillars:

Strengthening evidence

Empirical research is required to obtain grassroots perspectives on how climate security issues have complicated the issues of crimes and violence in the coastal areas of the Caribbean. Such evidence should provide an empirical basis to strengthen the climate change-security nexus. It should also examine differences and similarities in the challenges, issues and coping mechanisms across such vulnerable communities, while seeking to quantify the actual losses they have incurred and potential losses going forward, based on the securitization or otherwise of mitigation and adaptation strategies.

Developing indicators for data management

If the challenge cannot be measured scientifically, it cannot be addressed. Sufficient data is required to measure the exposure of different members of such vulnerable communities to climate-induced insecurity. For instance, risks to persons with disabilities, women and children can be addressed only with reliable data.

20 Jamaica’s National Security Minister indicated that if the country had had a normal crime rate, its GDP growth would have been between three and 10 times greater. <https://www.caribbean-council.org/crime-damaging-caribbean-development/>.

21 IADB, op. cit.

Through this process, regional security institutions, such as the CARICOM Secretariat, the Pacific region and OECS, could develop and monitor early warning indicators to mitigate security risks aggravated by climate change. Capacity building on climate change for national authorities is critical in this regard. Development partners must also continually invest in strengthening regional and national anticipation and adaptation capacities on specific areas posing the greatest risks.

Mainstreaming climate security in crime/violence prevention and climate change response programmes

Based on strengthened evidence and data, regional and national authorities should have sufficient knowledge to develop medium- to long-term integrated strategies that seek to ensure that “no one is left behind,” not least the residents of distressed coastal communities. Plans developed based on evidence gathered from the communities should also be the basis for budgeting and prioritizing additional funding from development partners through the Caribbean Climate Change Centre, the Global Environment Facility and the Green Climate Fund.

Changing the criteria for determining Official Development Assistance (ODA)

International development partners should support the Caribbean by recognizing the criticality of climate change as an existential threat and take cognizance of the security risks that it generates. In this context, reconsidering the eligibility of SIDS in the Caribbean for Official Development Assistance (ODA) would, in no small measure, help to free up much-needed resources to address the needs of the frontier coastal communities.

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Since 2004, the United Nations Development Programme and the UN Department of Political and Peacebuilding Affairs (DPPA) have partnered to strengthen support to the UN's work in building national capacities for conflict prevention. Often times, such support is extended through the deployment of Peace and Development Advisors (or PDAs), a growing cadre of UN staff who support Resident Coordinators and UN Country Teams adapt and respond to complex political situations and to develop and implement strategic conflict prevention initiatives and programmes.

<https://peaceinfrastructures.org/>

Folke Bernadotte Academy

The Folke Bernadotte Academy (FBA) is the Swedish government agency for peace, security and development. As part of Sweden's international development aid, FBA promotes peace in conflict-affected countries by offering training, advice and conducts research in order to strengthen peacebuilding and statebuilding; as well as grant funds to civil society organizations working with peace and security. The agency is named after Count Folke Bernadotte, UN's first peace mediator.

<https://fba.se/en/>