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Stormclouds and Solutions: Anticipating and Preparing for Climate Change and Security Risks in the Caribbean

A region long-tested by both extreme weather events and illicit economic activity, the Caribbean has developed abundant expertise in climate science and disaster resilience. It also has many underlying governance and security challenges which may amplify each other as climate impacts intensify. Key regional security risks exacerbated by climate change include 1) economic contraction, violence and criminal activity; 2) disaster impacts and political repercussions; 3) food and water insecurity, damage to livelihoods and social unrest; and 4) Central and South American security deterioration impacting on the Caribbean. Anticipating and addressing these challenges by integrating security cooperation and climate resilience initiatives could support existing risk management structures and advance long-term economic and socio-political stability in the Caribbean.

Introduction

The Caribbean is a region already highly exposed to a range of climate change impacts including more frequent or intense tropical storms, changing precipitation patterns (more intense rainfalls and drought), sea level rise and ocean acidification. The region also has a 400-year history of coping with illicit maritime smuggling and challenges to the rule of law, and serious organized crime activities including gangs and cartels continue to challenge states' authority and create security threats in some Caribbean states and territories.

Climate change impacts and security threats in the region are already interacting and amplifying each other. This interaction takes place in a context of underlying structural challenges including high unemployment, undiversified economies, livelihoods

dependent on climate-sensitive natural resources and governance gaps that inhibit the effective rule of law.

The reality that climate change is a factor in the region's current and future security issues is only beginning to permeate the broader security or resilience discourse in the region. But even so, adaptation and resilience planning across the region is active, and could provide a sound basis for thorough cross-sectoral understanding of the future threat landscape to support comprehensive risk management planning.

Disaster risk management entities in the region are already playing a leadership role in the climate resilience space. For example, in December of 2018, the Caribbean Disaster Emergency Management Agency ("CDEMA")

hosted a climate-security event even in Aruba to facilitate dialogue concerning underlying Caribbean security risks that are likely to be exacerbated by climate change.¹ This event resulted in the outline of an Action Plan for advancing the climate resilience agenda from a climate security perspective and serves as a representative example of growing appreciation of the nexus of traditional security threats, and climate change stressors.

Climate hazard exposure

As a region composed primarily of small island developing states, the Caribbean faces a broad range of climate hazards and can expect to see many worsen in coming decades as a result of climate change.² Caribbean populations, economies and infrastructure are concentrated in low-lying coastal areas and vulnerable to sea level rise and storm damage. The region is exposed to tropical cyclones and has already experienced an upward trend in tropical cyclone intensity, with associated casualties, property damage and economic losses.

The rate of sea level rise is accelerating and projected to increase 24–84cm from 2000 levels by 2050,³ increasing direct threats from flooding, inundation and storm surge, eroding beaches and salinating coastal aquifers. Further, poor or antiquated critical infrastructure such as water distribution networks, roadways, and electricity grids also compound resiliency-building challenges.

Significant drying in the region is projected by mid-century, threatening food security and the economies of agricultural areas. Water security is threatened by both sea level rise (salt water intrusion to ground water supplies), projected aridity and increasing temperatures. Ocean acidification and warming increases the risk of coral bleaching and colony death, which can impact both food security (by decreasing marine food sources, a key source of protein), reef-based tourism and other economic activity including commercial fishing. Tourism accounts for a significant portion of many Caribbean countries' GDP;⁴ in 20–30 years, mass coral bleaching events in the Eastern Caribbean could occur twice a year.⁵ Climate-sensitive health issues, including both vector and

1 The conference, titled "[Climate and Security in the Caribbean Region: A Roadmap to Resilience](#)," brought together experts, practitioners and policymakers to discuss climate change and its effect on security across the Caribbean region. The Center for Climate and Security (CCS), the US consortium partner of the Planetary Security Initiative (PSI) that co-organized the event along with The Kingdom of the Netherlands.

2 O. Hoegh-Guldberg, D. Jacob, M. Taylor, M. Bindi, S. Brown, I. Camilloni, A. Diedhiou, R. Djalante, K. Ebi, F. Engelbrecht, J. Guiot, Y. Hijoka, S. Mehrotra, A. Payne, S. I. Seneviratne, A. Thomas, R. Warren, G. Zhou, 2018, Impacts of 1.5°C global warming on natural and human systems. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press.

3 Or 0.5–3.1m by 2100 under different emissions scenarios. USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 186 pp. Accessed at <https://nca2018.globalchange.gov/chapter/20/>.

4 For example, travel and tourism contributions to GDP in 2017 included: Antigua and Barbuda (51%), Bahamas (47.8%), St. Lucia (41.8%), Belize ((41.3%), Barbados (40.6%). Oil exporter Trinidad & Tobago (7.7%), Haiti (9.8%) and Cuba (10.7%) are at the lower end of the scale. World Travel and Tourism Council Data, 'Contribution of travel and tourism to GDP as a share of GDP', accessed at <https://knoema.com/atlas/topics/Tourism/Travel-and-Tourism-Total-Contribution-to-GDP/Contribution-of-travel-and-tourism-to-GDP-percent-of-GDP>.

5 Donner, Simon D., Thomas R. Knutson, and Michael Oppenheimer, 'Model-based assessment of the role of human-induced climate change in the 2005 Caribbean coral bleaching event', *Proceedings of the National Academy of Sciences of the United States of America*, 2007, 104 (13), 5483–5488. doi:10.1073/pnas.0610122104.

food and water borne diseases such as leptospirosis and dengue, are projected to increase.

Due in part to its seasonal exposure to tropical cyclones, the Caribbean has a number of sophisticated climate science, information-sharing and extreme weather early warning systems, as well as considerable experience building resilience to extreme weather events. Nevertheless, the scale and pace of projected climate change pose particular challenges for already under-resourced small island developing states to adapt to, even if the most ambitious climate targets are achieved.

Underlying security issues in the Caribbean

Transregional criminal flows and illicit trafficking of high-value goods are not new in the Caribbean. Its location between South and North America places it on a natural transshipment route between the primary source and market regions for illegal drugs, along with Central America. Since the 1970s, the preferred route for cocaine trafficking has shifted between the Caribbean and Central America, with drug interdiction efforts in one region pushing trafficking toward the other. Cocaine seizures in the Caribbean have increased in recent years, although around 80% still transit via the US-Mexico border. Venezuela's state breakdown has increased drug trafficking via the Dominican Republic to both North America and Europe, with Jamaica another key transshipment point.⁶

The Caribbean is also a source, transit and destination region for human trafficking, including migrant labour, forced labour and sex trafficking. Those trafficked include Latin American and Caribbean citizens, and foreign nationals from Africa and Asia who may be forced into sex work or unpaid labour to pay off travel debts.⁷ Human smugglers also operate in the Caribbean, transporting both Caribbean citizens and a smaller number of Asian and African migrants, most ultimately seeking to cross the United States' southern land border via routes through South and Central America.⁸

The ongoing breakdown of state function in Venezuela has led to an increase in illicit flows of goods across the region, especially to Trinidad, Aruba and Curaçao, and from Western Venezuelan districts to Hispaniola. Piracy has increased along Venezuela's Caribbean coast, resulting in kidnappings and robberies as well as weapons and drugs smuggling, which are exacerbating Trinidad's gang problems.⁹ Migrant outflows from Venezuela have increased dramatically, contributing to tensions in some Caribbean receiving areas and increasing exploitation of vulnerable migrants, including sexual exploitation. As of September 2018, an estimated 98,500 Venezuelans were living in the southern Caribbean, concentrated in Trinidad and Tobago (40,000; Trinidad lies 12km from Venezuela's north coast), Aruba (20,000) and Guyana (15,000).¹⁰

6 European Monitoring Centre for Drugs and Drug Addiction, 'EU Drug Markets Report', 2016, <http://www.emcdda.europa.eu/system/files/publications/2373/TD0216072ENN.PDF>; InSight Crime, 'Venezuela: A Mafia State?', 2018, <https://es.insightcrime.org/wp-content/uploads/2018/05/Venezuela-a-Mafia-State-InSight-Crime-2018.pdf>.

7 US Department of State, 'Trafficking in Persons Report 2018', <https://www.state.gov/documents/organization/282798.pdf>.

8 United Nations Office on Drugs and Crime, 'Global Study on Smuggling of Migrants 2018', (United Nations publication, Sales No. E.18.IV.9).

9 Freeman, Colin, 'Venezuelan pirates - the new scourge of the Caribbean', BBC, 28 January 2019, <https://www.bbc.co.uk/news/stories-47003108>.

10 UNHCR, 'Venezuela Situation: Responding to the needs of people displaced from Venezuela, Supplementary Appeal January-December 2018'.

Gang activity is present across the region, but is particularly well-organized in Jamaica and Trinidad & Tobago, where gangs and organized crime provide some civic functions (policing and welfare services) in areas where the State does not have either the political will or the resources to do so.¹¹ Some Caribbean countries also have a high level of violent crime and gun violence, with particularly high homicide rates in Jamaica, Trinidad & Tobago and the Bahamas. High levels of criminality and citizen insecurity impair economic growth and stable development in several Caribbean countries.

Violent extremist networks also have a presence in Trinidad & Tobago, which has the Western Hemisphere's highest per-capita number of foreign fighters who have travelled to join Islamic State, an estimated 89-125 people from a population of 1.3 million.¹² There is a close nexus between Islamist groups and urban criminal gangs, with disaffected youth attracted by the perceived empowerment offered by these organisations.¹³ The radical homegrown Sunni organization *Jamaat al-Muslimeen* and a handful of splinter Islamist groups (*Jamaat al-Islami al-Karibi*, the *Waajihatul Islaamiyyah* (The Islamic Front) and the *Jamaat al-Murabiteen*) provide ideological and financial support to global jihad, including appearing in ISIS recruitment

videos targeted at Trinidadians, but have not carried out any domestic terror attacks to date.¹⁴

Climate as a Security Threat Multiplier in the Caribbean

The interaction of intensifying climate change impacts with island-state systemic deficiencies and vulnerabilities could increase the risk of popular dissatisfaction, political divisions and other pressures which together have the potential to disrupt democratic processes and reverse hard-earned development gains in the Caribbean. These issues are interlinked, and the future impacts of climate change present networked threats to development, peace and stability in the Caribbean. Summarized below are key pathways indicating how climate and security vulnerabilities might interact in the region.

Economic contraction, violence and criminal activities

Many of the Caribbean's current insecurity and violent crime issues are rooted in a lack of economic opportunity and livelihood options.¹⁵ Climate change may further limit economic options for those in the region; Caribbean economies tend to be dependent on tourism, export agriculture and other sectors which are sensitive to climate

11 Heather Sutton & Inder Ruprah (eds.), 'Restoring Paradise in the Caribbean: Combating violence with numbers', Inter-American Development Bank, 2017.

12 John McCoy & W. Andy Knight (2017) Homegrown Violent Extremism in Trinidad and Tobago: Local Patterns, Global Trends, *Studies in Conflict & Terrorism*, 40:4, 267-299, DOI: 10.1080/1057610X.2016.1206734.

13 ISIS recruits are almost entirely drawn from Afro-Trinidadian converts to Islam, and only recently began to include Trinidadians of South Asian descent. Badri-Maharaj, Sanjay, 'Jihad in Trinidad', Oxford Research Group, 23 February 2018, <https://www.oxfordresearchgroup.org.uk/blog/jihad-in-trinidad>.

14 However, in 1990 around 100 members of *Jamaat al-Muslimeen* attempted a coup, which lasted six days and involved storming parliament and holding the Prime Minister and other government officials hostage. Violence, looting and arson erupted in the capital in the ensuing breakdown of law and order. The episode resulted in 24 dead including one Member of Parliament, along with over 200 wounded.

15 Zimmermann, Robert, Carol Lawes and Nanette Svenson (eds.), 'Caribbean Human Development Report 2012: Human Development and the Shift to Better Citizen Security', United Nations Development Programme, 2012, http://www.latinamerica.undp.org/content/dam/undp/library/corporate/HDR/Latin%20America%20and%20Caribbean%20HDR/C_beau_HDR_Jan25_2012_3MB.pdf.

impacts such as sea level rise, tropical storms or changing precipitation patterns. For example, by the mid-21st century, mass coral bleaching events driven by increasing sea surface temperature, which have been occurring more frequently, could become annual occurrences, with economic implications for both reef-based tourism and fisheries.¹⁶

Projected damage to Caribbean economies from climate change could increase the risk of frustrated livelihoods, which may in turn make livelihoods rooted in illicit economic activity more attractive to many, especially young males. Trends that undermine economies may increase the ranks of organized crime groups and further threaten the rule of law.

Climate-linked economic contraction may also undermine the state's financial resources and ability to counter criminal activities through effective policing and well-functioning justice systems. Immediate breakdowns in the rule of law following storms can drastically reduce revenue and employment in the wake of a major disaster, and in the intermediate to long terms, decrease private sector confidence in investment potential and recovery. Both impacts can reduce tourism numbers for significant periods of time if they create negative perceptions about a country's safety, investment potential and stability. Any impact on income from tourism can worsen this cycle for countries whose economies are highly dependent on revenue from this sector.

Many Caribbean countries are already in precarious financial positions with high debt-to-GDP ratios, ranging from Haiti (debt 31.1% of GDP) and Dominican Republic (37.2%) to Jamaica (101%) and Barbados

(157.3%).¹⁷ China holds most of this debt and has a significant and growing political and economic presence in the region,¹⁸ with capital flows financing major roads and ports and as well as agriculture, tourism, minerals, and energy exports.¹⁹ While these projects bring needed infrastructure and employment opportunities, as well as economic diversification away from tourism and financial services, the billions of US dollars in debt to China may chip away at economic growth for decades to come as cash strapped, highly leveraged economies struggle to repay costly Chinese infrastructure contracts. There is a legitimate

16 van Hooidonk, R., Maynard, J., Tamelander, J., Gove, J., Ahmadi, G., Raymundo, L., Williams, G., Heron, S.F. & Planes, S. 2016. Local-scale projections of coral reef futures and implications of the Paris Agreement. *Scientific Reports*, 6(1): art: 39666. <https://doi.org/10.1038/srep39666>.

17 International Monetary Fund, 'Outlook for Latin America and the Caribbean: An Uneven Recovery', October 2018, <https://www.imf.org/~media/Files/Publications/REO/WHD/2018/October/wreo1018.ashx?la=en>.

18 Five of the 17 countries that maintain formal diplomatic relations with Taiwan are in the Caribbean (Belize, Haiti, St. Lucia, St. Kitts & Nevis, and St. Vincent). This has driven the People's Republic of China to pursue closer economic and diplomatic ties with countries in the region, under a policy of only providing aid and allowing foreign direct investment (FDI) in countries who recognise the PRC; they successfully persuaded the Dominican Republic to switch allegiances in May 2018, who cited 'history and socioeconomic reality' when doing so. See Lawrence Chung, 'Dominican Republic breaks with Taiwan, forges diplomatic ties with Beijing', South China Morning Post, 1 May 2018, <https://www.scmp.com/news/china/diplomacy-defence/article/2144115/dominican-republic-breaks-taipei-forges-ties-beijing>.

19 Key primary goods exports include: Cuba (metalliferous ores and metal scrap), Jamaica (aluminum oxide), Trinidad and Tobago (oil and gas), Suriname (minerals, timber), and Guyana (minerals, timber). Bernal, Richard L., 'Chinese Foreign Direct Investment in the Caribbean Potential and Prospects', Inter-American Development Bank, November 2016, <https://publications.iadb.org/publications/english/document/Chinese-Foreign-Direct-Investment-in-the-Caribbean-Potential-and-Prospects.pdf>. Wenner, Mark D. and Dillon Clarke, 'Chinese Rise in the Caribbean, What Does It Mean for Caribbean Stakeholders?', Inter-American Development Bank, July 2016, <https://finance.gov.gy/wp-content/uploads/2017/08/chinese-rise-in-the-caribbean-what-does-it-mean-for-caribbean-stakeholders.pdf>.

risk that servicing this debt may not be sustainable, particularly if tourist arrival to revenue ratios remain relatively stagnant.²⁰

Disaster impacts and political repercussions

Climate change is likely to lead to more frequent or intense tropical cyclones in the Caribbean. Short-term shocks from natural disasters can increase citizens' frustration if response is delayed or inadequate, and can lead to shakeups in governments, in the aftermath of disasters or in subsequent elections. Successive storms can also impair economic recovery and infrastructure reconstruction efforts; the unprecedented 2017 Atlantic hurricane season,²¹ in which two category 5 hurricanes hit the Eastern Antilles in a week, set back development in Puerto Rico, Barbuda, Dominica and other severely affected islands by years if not decades. If island economies facing more frequent or intense storms struggle to recover, the consequences for growth, opportunities and security could be significant.

Dependency on external countries for humanitarian assistance and disaster response (HADR), e.g. from the US, Netherlands, United Kingdom and France, creates vulnerabilities in terms of delayed response time to reach affected areas. This was clear in 2017, when response to Hurricane Irma on St Martin from the French and Dutch militaries was criticized as slow, amidst reports of looting stores, bank robbery and theft at tourist facilities. Following the storm, decisions around reconstruction funding led to the collapse of the government and fresh elections.²²

Food insecurity, livelihoods and social unrest

Regional climate change is expected to negatively impact food security in the Caribbean by decreasing both domestic food production and export agriculture, as well as the availability of marine food sources, including high-value species for export.

Increased frequency of extreme weather events (e.g. tropical cyclones, precipitation anomalies), sea level rise, increasing sea surface temperature and ocean acidification are expected to result in declining catches for both self-provisioning fishers and commercial exporters, with significant economic implications including the loss of foreign exchange. Fisheries support the viability of coastal communities by providing harvest and post-harvest employment and fish for consumption. Declining catches may lead to greater illegal, unreported and unregulated fishing and increasing conflicts between users, for example export-oriented and self-provisioning fishers, which could result in a loss of foreign exchange and increasing food import bills, or between the tourism sector and local consumers, where demand for remaining fish species drives up market prices.²³

Agriculture accounts for around a quarter of employment in CARICOM countries.²⁴ The sector is vulnerable to more frequent and intense droughts associated with climate change. Climate-smart agricultural development strategies that promote domestic food production may struggle to keep pace with climate impacts, as annual rainfall is projected to decline. Most Caribbean countries face freshwater

20 International Monetary Fund, Western Hemisphere Department, 'Caribbean Small States: Challenges of High Debt and Low Growth', February 2013, <https://www.imf.org/external/np/pp/eng/2013/022013b.pdf>.

21 2017 was the costliest hurricane season on record, and the seventh most active, with seventeen named storms including six Category 3 or higher storms.

22 DutchNews.nl, 'Sint Maarten holds elections to replace government that fell after Hurricane Irma', 26 February 2018, <https://www.dutchnews.nl/news/2018/02/sint-maarten-holds-elections-to-replace-government-that-fell-after-hurricane-irma/>.

23 Barange, Manuel, Tarüb Bahri, Malcolm C.M. Beveridge, Keven L. Cochrane, Simon Funge-Smith and Florence Poulain, 'Impacts of climate change on fisheries and aquaculture: Synthesis of current knowledge, adaptation and mitigation options', Food and Agriculture Organization of the United Nations, 2018, <http://www.fao.org/3/i9705en/i9705en.pdf>.

24 Food and Agriculture Organization of the United Nations, 'Climate change threatens agriculture and food security in the Caribbean', <http://www.fao.org/in-action/agronoticias/detail/en/c/495191/>.

security challenges, with agricultural exposure to water stress already high in Jamaica, Trinidad, Puerto Rico and parts of Cuba and Hispaniola.²⁵ Declines in this sector could increase poverty and unemployment and thereby limit food access.

Food insecurity and undernourishment are ongoing challenges in some Caribbean countries, with Haiti's undernourishment rate at around 53%.²⁶ With limited land available for local food production, the region imports a significant proportion of its food; almost all CARICOM countries import more than 60% of the food they consume, with half of them importing more than 80%.²⁷ The most populous nations (Haiti, Jamaica and Trinidad & Tobago) are the biggest importers; this import dependency creates vulnerability to food price increases and shocks, which have been a source of grievance and protests. According to a 2013 policy report from the Government of Jamaica, "Low food production and high dependency on food imports combine to confront Jamaica with an unprecedentedly high and rising Food Import Bill (FIB) and a worrying food security vulnerability to external economic shocks and climate change." The report further warns that "cyclical natural events have increased in intensity over the recent past thus making Jamaica more prone to temporary food insecurity."²⁸

Regional security degradation and impacts on the Caribbean

Climate impacts may worsen existing security challenges in South and Central America in direct and indirect ways that could have

knock-on consequences for the Caribbean. For example, the rainfall- and temperature-sensitive 'coffee rust' fungus may continue to damage coffee production in export-dependent economies like Guatemala, El Salvador and Colombia, with repercussions for rural livelihoods, greater urban migration and associated security challenges, including gangs and cartel activities.²⁹ Greater instability in Central America could reverberate in the Caribbean by strengthening narco-trafficking cartels as Central American governments struggle to effectively counter serious organized crime.

Ongoing economic and political instability in Venezuela could amplify migrant outflows in the Caribbean and associated challenges in receiving areas, as well as piracy and illicit goods flows. Restoring Venezuela's economic and political stability may be complicated in the medium term by a shift away from fossil fuel exports and corresponding economic decline, if the global economy rebalances under climate regulations.³⁰

Climate security risk management in the Caribbean

Ongoing cooperation to improve climate adaptation, regional disaster response, resilience and security can provide a basis for more integrated and comprehensive risk management initiatives that dissolve barriers between communities of practice addressing different aspects of interrelated threats in the Caribbean. Integrating climate security into existing efforts would likely be more effective than standing up dedicated institutions aimed at addressing the climate security risk nexus.

25 ResourceWatch, 'Agricultural Exposure to Water Stress' dataset, World Resources Institute, <https://www.wri.org/resources/maps/agricultural-exposure-water-stress>.

26 Food and Agriculture Organization of the United Nations, Subregional Office for the Caribbean, 'State of food insecurity in the CARICOM Caribbean', 2015, <http://www.fao.org/3/a-i5131e.pdf>.

27 *Ibid.*

28 Jamaica Ministry of Agriculture and Fisheries and Ministry of Health 'Food and Nutrition Security Policy', 2013 http://moa.gov.jm/AboutUs/departments/Food_and_Nutrition_Security_Policy.pdf.

29 Fetzek, Shiloh, 'Climate, Coffee and Security', *Epicenters of Climate and Security: The New Geostrategic Landscape of the Anthropocene*, June 2017, https://climateandsecurity.files.wordpress.com/2017/06/11_the-coffee-belt.pdf.

30 Oil and gas make up around 40% of Trinidad & Tobago's GDP, as well as 80% of its exports, making it similarly vulnerable to a changing energy market. Moody's Analytics, 'Trinidad and Tobago – Economic Indicators', <https://www.economy.com/trinidad-and-tobago/indicators#ECONOMY>.

This is particularly true given the array of institutions already working to address climate science, adaptation and disaster risk reduction, including agriculture, fisheries, water etc.,³¹ as well as the Caribbean Basin Security Initiative, a civil and military partnership between the US and CARICOM countries plus the Dominican Republic to counter illicit trafficking, increase public safety and security and promote social justice³². Since this issue falls at the junction of many of these subject areas, new institutional relationships and connective tissue are needed, along with additional capacities, personnel and expertise, to assess and respond to the underexamined risk nexus of climate change and security in the Caribbean.

Though the trends discussed in this report require further investigation so that their individual and aggregate likely impacts on national security can be better framed, measured and responded to, it is evident that further basin-wide consultations are needed so that the adaptive policy making and coordination on this package of new risks can be both better informed and enabled.

This type of transnational cooperation is nascent and is evidenced by events like the December 2018 Caribbean Disaster and Emergency Management Agency (CDEMA) and Planetary Security Initiative regional consultation in Aruba, where disaster preparation stakeholders agreed

a Plan of Action³³ aimed at strengthening regional coordination, improving capacity (including financial mechanisms) and enhancing knowledge on climate and security as necessary prerequisites to policy adjustments.

Responsibility to Prepare – a framework for risk management

While the Caribbean is vulnerable to unprecedented risks, policymakers have unprecedented foresight on future climate threats to the region, from regional research institutions including the Caribbean Community Climate Change Centre, Caribbean Institute for Meteorology and Hydrology, the Climate Studies Group at the University of the West Indies and others. Such foresight capabilities, in the context of unprecedented risks to the region, give security, development and political actors a responsibility to prepare for multifaceted security threats on the Caribbean's horizon.

Implementing a Responsibility to Prepare framework for risk management involves six principles: routinizing, integrating, institutionalizing and elevating attention to the climate and security nexus, while strengthening rapid response mechanisms and developing contingencies for potential unintended consequences.³⁴ In the Caribbean, this would mean routinely addressing these cross-sectoral issues in both security and climate resilience

31 For an interactive map of climate risk assessment and management organisations in the Caribbean, see USGCRP, 2018: Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 186 pp. Chapter 20: U.S. Caribbean, <https://nca2018.globalchange.gov/chapter/20#fig-20-19>.

32 US Department of State, 'Caribbean Basin Security Initiative', <https://www.state.gov/p/wha/rt/cbsi/>, United States Congressional Research Service.

33 Caribbean Disaster and Emergency Management Agency (CDEMA), 'Planetary Security in the Caribbean Region: A Roadmap to Climate Resilience Plan of Action (Draft)', December 2018, https://www.cdema.org/POA_draft_2018.docx.

34 For more on the Responsibility to Prepare framework for climate security risk management, see: Werrell, Caitlin E., Francesco Femia, Sherri Goodman and Shiloh Fetzek, 'A Responsibility to Prepare: Governing in an Age of Unprecedented Risk and Unprecedented Foresight', The Center for Climate and Security, Briefer No. 38, 7 August 2017, https://climateandsecurity.files.wordpress.com/2017/12/a-responsibility-to-prepare-governing-in-an-age-of-unprecedented-risk-and-unprecedented-foresight_briefer-38.pdf.

fora (integrating climate into security discussions and vice versa, thinking beyond short-term disaster response planning), strengthening the institutional architecture for understanding and coordinating responses to these interconnected threats, ensuring that warning signals reach both security and climate actors at a senior level in a timely fashion and inform the further development of rapid response mechanisms, and assessing security and climate efforts for unintended detrimental effects and developing contingency planning to minimise these. More systematic and strategic alignment of efforts and coordination of partnerships in the region, such as described in the CDEMA/PSI Plan of Action, can broaden early warning capabilities and strengthen timely and effective response to foreseeable security issues – as well as the potential surprises and anomalies inherent in climate-related risks.

Ongoing attention to the particular climate and security vulnerabilities of small island developing states (SIDS) at the United Nations,³⁵ as part of broader efforts to establish an institutional home for climate security, will continue to benefit from Caribbean states and territories' input, as members of the Group of Friends on Climate and Security working to advance the climate security agenda in the Security Council and elsewhere in the UN system. As Council President Miguel Vargas of the Dominican Republic stated during the Security Council open debate he chaired on Climate Change and Its Effects on Development, Peace and International Security on 25 February 2019,

'The nexus between the adverse effects of climate change is perhaps more evident from the perspective of developing countries, and in particular from small island developing states or countries that suffer extreme vulnerability, including those of the Central American isthmus.'

35 Open Debate concept note at https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_2019_1.pdf.

'Our countries are already living a new reality. This includes increasingly severe natural disasters that exceed slow-onset risks, such as human displacement, food insecurity and recurrent and unpredictable failures in critical infrastructure.'

*'The Dominican Republic brings to the table the voice of the countries that suffer the effects of natural disasters most intensely as a consequence of climate change, both because of their geographical location and because of their institutional and / or economic vulnerabilities.'*³⁶

The considerable climate resilience expertise of the Caribbean has applicability not only for SIDS in other regions, but for other regional cooperation efforts to manage climate-related risks.

36 Dominican Republic Ministry of Foreign Affairs, 'Remarks of Ambassador Miguel Vargas, Open Debate on Climate Change and its Effects on Development, Peace and International Security', 25 January 2019, <https://www.scribd.com/document/398226153/Discurso-del-Canciller-Miguel-Vargas> (author's translation).

About the Planetary Security Initiative

The Planetary Security Initiative aims to help increase awareness, to deepen knowledge, and to develop and promote policies and good practice guidance to help governments, the private sector and international institutions better secure peace and cooperation in times of climate change and global environmental challenges. The Initiative was launched by the Netherlands Ministry of Foreign Affairs in 2015 and is currently operated by a consortium of leading think tanks headed by the Clingendael Institute.

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E-mail: psi@clingendael.nl

Website: www.planetarysecurityinitiative.org

About the authors

Shiloh Fetzek is Senior Fellow for International Affairs at the Center for Climate and Security.

Lieutenant Commander Oliver-Leighton Barrett, US Navy (Ret), is Senior Research Fellow at the Center for Climate and Security.