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Knowledge Politics on the Frontlines

The Problem of Acknowledging Loss and Damage in Antigua and Barbuda

Lisa Vanhala and Michai Robertson

4.1 INTRODUCTION

Of all the projected climate impacts that will shape Antigua and Barbuda's future – more frequent droughts, hotter temperatures, and sea-level rise to name a few – higher-intensity hurricanes have had the biggest influence on national policy. In 2017, the hurricane season saw more than 90 percent of the Island of Barbuda's buildings destroyed or badly damaged. This event marked a critical juncture in policymakers' thinking about disaster preparedness and responses to climate change impacts. The country has begun building resilience in key economic sectors, climate-proofing infrastructure, and establishing innovative risk financing solutions for climate-vulnerable economic sectors to minimize the impacts of climate change on the most vulnerable communities and groups.

This chapter traces the role of national institutions in shaping loss and damage policies in Antigua and Barbuda, focusing specifically on how knowledge and ideas affect policymakers' awareness of the impacts of climate change.[1] In doing so, it reveals the knowledge politics that play out between different institutions and levels of governance in the country. It argues that there are conflicting incentives for deepening the understanding of loss and damage in Antigua and Barbuda. On the one hand, the country might benefit from international funding through the Green Climate Fund (GCF), the Adaptation Fund, and, potentially in the future, the proposed loss and damage fund which Antigua and Barbuda played a critical role in establishing at the twenty-seventh Conference of the Parties (COP27) in Sharm el Sheikh. On the other hand, if

[1] This chapter draws on a previously published article: Vanhala, L., Robertson, M., & Calliari, E. (2021). The knowledge politics of climate change loss and damage across scales of governance. *Environmental Politics*, 30(1–2), 141–160.

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the country releases too much data on its vulnerability to climate change, it becomes seen as an investment risk and undermines its own national economic interests. In this way, the chapter shows how enhancing knowledge around climate risks and loss and damage does not necessarily benefit the most vulnerable countries and often only perpetuates existing power structures.

The chapter complements recent work in critical disaster studies scholarship (Kelman 2020; Pelling & Dill 2010; Wisner et al. 2012), particularly the work of scholars who have identified the path dependencies associated with colonial structures and vulnerability to climate change impacts. There have been practices of governing the land in common in Barbuda since emancipation from slavery in 1834. Following the 2017 hurricane season, the government sought to reform the communal land rights system, claiming that freehold tenure would allow Barbudans to secure bank loans to rebuild their houses. However, many Barbudans resisted this move as a form of neoliberalism: This would also allow for foreign investment in the development of private resorts on what has generally been a relatively undeveloped island. Some observers have referred to this as an example of "disaster capitalism" (Gould & Lewis 2018). Look et al. (2019) argue that the modern practices of disaster risk reduction (DRR) tend to view commonhold land tenure, a long-existing practice on the island of Barbuda, as increasing the vulnerability of communities to disaster because of the financial ambiguity it creates in disaster recovery (in contrast to freehold land tenure where the private property owner is responsible for damages). While this chapter does not delve into Antigua and Barbuda's cultural and political past in detail, we recognize that it contributes to vulnerability to climate change impacts and the government's ability to respond to these impacts.

The analysis in this chapter is based on multiple sources of data: twelve semi-structured interviews with national and international policy actors, civil servants, and nongovernmental organizations (NGOs) in Antigua and Barbuda, which were conducted in April 2019; analysis of legislation and policy and media coverage; and participant observation of the parliamentary select committee hearing scrutinizing the Environmental Protection and Management Bill 2019. It also draws on one of the co-author's involvement in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations as a member of Antigua and Barbuda's delegation, which led the Alliance of Small Island States (AOSIS) at COP27.

4.2 NATIONAL CIRCUMSTANCES

Antigua and Barbuda is one of the Small Island Developing States (SIDS). It is composed of two islands that are vulnerable to multiple adverse effects of climate change and related economic and noneconomic loss and damage. Located in the Caribbean Sea, Antigua and Barbuda is already experiencing impacts from coastal erosion, extreme weather events, and extended drought. In 2017,

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the country experienced two unprecedented category five hurricanes (Irma and Maria) which left the island of Barbuda devastated. Antigua and Barbuda also experienced a three-year meteorological drought from 2012 to 2015 (the second extended drought in fifteen years), costing the Public Utility Authority millions of dollars and requiring emergency investment in reverse osmosis plants.

As the climate changes, the extent of such impacts will increase. Downscaled climate projections for Antigua and Barbuda include: an estimated 30–50 percent less rainfall in 2090 with respect to late twentieth-century rainfall norms; increased rainfall intensity leading to greater risks of flash flooding and extreme rainfall impacts; increased average ambient temperature of three to five degrees Celsius by the end of the century; and increased sea surface temperatures (Green Climate Fund 2022). Hurricane intensity is expected to increase by 18 percent for category four and five hurricanes over the intensity observed over the past thirty years for Antigua and Barbuda (Government of Antigua and Barbuda 2022). Estimates indicate that the island of Antigua could experience a tropical cyclone passing within 120 miles every one to two years and suffer a close or direct hit by a storm every six to seven years (Green Climate Fund 2022).

Antigua and Barbuda has an annual gross domestic product (GDP) of USD 1.4 billion, and tourism represents the largest economic sector. This makes the country particularly vulnerable to the impacts of climate variability and change, given the exposure of key coastal infrastructure and resources. Studies have estimated that 10 percent of the major tourism properties, 2 percent of road networks, and 100 percent of seaports in Antigua and Barbuda are at risk from a one-meter sea-level rise (Green Climate Fund 2022, p. 7). Sea-level rise and coastal erosion could cost Antigua and Barbuda's economy about 62 percent and 209 percent of GDP in 2080 for mid-range sea-level rise and high sea-level rise scenarios respectively (Simpson et al. 2012). Given the gravity of these projections and recent experiences with extreme weather events, policymakers in Antigua and Barbuda are beginning to grapple with what loss and damage policymaking will mean.

4.3 POLICY LANDSCAPE

Governance of loss and damage-related issues is undertaken across a wide range of government ministries in Antigua and Barbuda, and policy development falls under different legislative frameworks and international legal instruments. The country's Disaster Management Act, which became law in 2002, was the first piece of legislation to create an overarching system to prepare for, mitigate, respond to, and recover from natural and manmade disasters in Antigua and Barbuda. In 2019, Antigua and Barbuda became one of the few countries to create legislation that specifically refers to "climate change loss and damage": The Environmental Protection and Management Act is the country's flagship legislation on matters relating to the protection and management of the environment, which includes addressing climate change (Government of Antigua and Barbuda 2019).

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In terms of the national response to loss and damage, one of the main additions to the 2019 Act was its financing mechanism, the Sustainable Island Resources Framework Fund. It is clearly stated that the fund (to be resourced from domestic and international sources of finance) will, inter alia, "support programmes and measures for … climate change loss and damage" (Government of Antigua and Barbuda 2019, p. 75). This explicit mention of loss and damage is partly a reflection of the timing of the adoption of the 2019 Act, which coincided with Antigua and Barbuda's active participation and leadership in recent international legal processes on climate change. It is also partly the result of recent experiences of the increased intensity and devastation caused by the 2017 hurricane season.

Much of Antigua and Barbuda's planning and communications around climate change has been guided by the UNFCCC. Three examples are key. First, in its 2015 Intended Nationally Determined Contribution, put out in the run-up to the Paris negotiations, Antigua and Barbuda's government outlined specific adaptation targets and actions and included measures that could be seen as part of a response to loss and damage (Government of Antigua and Barbuda 2015b). In the section outlining the accompanying information on adaptation actions, the government emphasizes that "physical adaptation measures will not always be enough to prevent significant loss and damage to the infrastructure and economy of Antigua and Barbuda." It also discusses the loss and damage experienced from hurricanes, droughts, and sea-level rise. As one of its conditional targets, the government states that it provides for "an affordable insurance scheme" for farmers, fishermen, and residential and business owners to minimize and address loss and damage associated with these climate change-induced events by 2030.

Although the government notes that these targets are "contingent upon Antigua and Barbuda receiving international support," it has begun to make headway on its objectives by establishing the Sustainable Island Resources Framework Fund. The country also updated its Nationally Determined Contribution in 2022 and furthered its policies on loss and damage (Government of Antigua and Barbuda 2021). The government thus not only reaffirmed the 2016 targets but also devoted an entire section to loss and damage response. Among other things, it provides clarity that such a response is aimed at "addressing the actual harm associated with the adverse effects of climate change, including extreme weather events and slow onset events" (Government of Antigua and Barbuda 2021, p. 28) Moreover, the government states that there are "large amounts" of money being spent on such responses domestically by both the public and private actors (Government of Antigua and Barbuda 2021, p. 29).

Second, in 2017 the UNFCCC's GCF approved a Readiness and Preparatory Support Project for the government to develop a National Adaptation Plan (NAP), which is in development at the time of writing. One of the components of the project focuses on compiling and analyzing key climate data, which

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includes the data on the loss and damage experienced after extreme weather events such as hurricanes and drought, as well as the progression and adverse effects of slow onset events (SOEs) such as sea-level rise. The aim is to create risk models using downscaled climate projections and socioeconomic data. These models, in combination with the data from Antigua and Barbuda's geographic information system, would create an illustrative climate change risk and vulnerability map of the country. This map would consequently inform the country's adaptation planning process and proposed actions. Antigua and Barbuda's NAP has included the development of the country's first Adaptation Communication, which was submitted in 2022 to the UNFCCC as part of the reporting requirements under the Paris Agreement and its Enhanced Transparency Framework. It captures information on the key climatic drivers and their impacts on the country, national adaptation responses (both existing and planned responses), and the needs and challenges still to be addressed.

Third, in 2020 under the UNFCCC's Needs-Based Finance Project, the government produced a report that provided an assessment and overview of Antigua and Barbuda's public and private finance flows relevant to climate change (Watson et al. 2020, pp. 26, 27, 29–34). This report focuses on, among other things, identifying climate-related finance within budget spending and international climate finance receipts from 2014 to 2017. Through this report, the government articulated an initial assessment methodology which includes a definition of loss and damage response finance under the broader umbrella of climate finance. It defines finance as "that which addresses the actual harm associated with the adverse effects of climate change, including extreme weather events and slow onset events" (Watson et al. 2020, p. 27). The government proposes an initial methodological approach for quantifying public spending on loss and damage, with noted limitations in relation to applicability on tracking the cost of responding to loss and damage from SOEs and noneconomic loss. That said, this approach correlates "the occurrence of climate change related events (such as hurricanes and severe droughts) during the reporting year of the actual expenditures to determine the main recovery and rehabilitation costs of such loss and damage" (Watson et al. 2020, p. 33).

The UNFCCC is not the only international influence on loss and damage-relevant policymaking in Antigua and Barbuda. In 2016, the government prepared its Country Document for Disaster Risk Reduction to analyze the status of DRR in Antigua and Barbuda in the context of the then recently adopted Sendai Framework for Disaster Risk Reduction (O'Marde 2017). In fulfilling its obligations under the United Nations Convention to Combat Desertification, in 2015 the government published its NAP, which focused on combatting desertification, land degradation, and drought (Government of Antigua and Barbuda 2015a). That year the government also published its Medium-Term Development Strategy 2016–2020 to address the sustainable development goals, including considerations of climate change principles (Government of Antigua and Barbuda 2015c). One of the four dimensions

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in the strategy for 2020 includes action on "disaster risk management and climate change resilience," which strives to minimize the economic toll that disasters take on the economy by reducing adverse direct and indirect impacts. In this way it attempts to facilitate more efficient recovery and generally reduce the diversion of resources that would have otherwise advanced economic development.

4.4 INTERNATIONAL ENGAGEMENT

Awareness of loss and damage and related issues has trickled down from different international and regional regimes. The international institutions and regimes that were mentioned most frequently in interviews included the World Bank and the United Nations Development Programme (which together with the EU had played a role in the immediate aftermath of Hurricanes Irma and Maria in 2017). The Sendai Framework was also invoked by a number of interviewees from across government departments. The UNFCCC was mentioned less frequently by interviewees and mainly by those in the Department of Environment (DoE). Every interviewee mentioned regional institutions including the Caribbean Development Bank (CDB), Caribbean Community (CARICOM), the Caribbean Disaster Emergency Management Agency (CDEMA), and the Caribbean Catastrophe Risk Insurance Facility (CCRIF).

4.4.1 Differing Definitions of Loss and Damage

Interview data shows the central but slow-moving process by which international policies have influenced thinking about loss and damage at the national level in Antigua and Barbuda. An interviewee at the National Office of Disaster Services (NODS) noted that climate change was nothing new in terms of the way the disaster risk management (DRM) community did their work:

> We have been incorporating climate change impacts in our work from time immemorial – before it was more commonly known as climate change. So what we notice now is that the climate change community has now started to adopt certain things under disaster management. So they're now looking at climate risk management, etc. … So it's heartening to see that they're coming aboard and understanding that climate change is part of a bigger picture. (Interview 5)

But the interviewee also noted frustration with the ways in which the DRM and climate change communities at the international level speak past one another: "We still have a lot of back and forth right now internationally because the long-established definition of what loss and damage is in disaster risk management [is different from the idea of] … climate change loss and damage. And they're different" (Interview 5). When asked about where the interviewee had encountered this ambiguity about what loss and damage is, they noted that the lack of definition was a widespread issue: "You encounter it at a national level,

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regional level, international level, etc. and so on. I mean, when you ask them 'What's the clear definition of loss and damage in terms of climate change?' … the discussion goes round and round" (Interview 5). The interviewee went on to suggest that there is a general lack of coordination between international entities, which means time is often wasted at the national level:

> Sometimes the communication level between entities at the international level is not necessarily the best. They [the UNFCCC and DRR community] are doing particular initiatives and it doesn't seem to happen in a coordinated manner. So when you at the national level now have to be dealing with different conventions that are asking you to report on similar things and a lot of duplication of effort, it becomes frustrating. (Interview 5)

One strength of the way in which DRM work happens according to the interviewee was the coordination among frameworks of indicators at the international, regional, and national levels with national programs being linked to the CDEMA program, which is then linked to the Sendai Framework. The interviewee said, "Our work programs help to actually fulfil those [monitoring] requirements. The other agencies and sectors don't necessarily have the established linkages between their regional and international frameworks" (Interview 5).

4.4.2 Climate Finance at the International Level

Through its UNFCCC delegation and technical experts, Antigua and Barbuda's government has been involved in clarifying whether the existing climate finance architecture, especially under the UNFCCC, currently incorporates a loss and damage response. There have been attempts to determine how such an incorporation of loss and damage might allow for the channeling of new, additional, adequate, and predictable funding, and Antigua and Barbuda played a pivotal role in the agreement to establish a loss and damage fund at COP27. The government is participating in this process primarily in two venues: at the COP and its subsidiary bodies' sessions and through the AOSIS negotiation bloc in which it is the lead on climate finance. National experts also serve as representatives on the GCF board and UNFCCC's Standing Committee on Finance. In all these venues, Antigua and Barbuda's delegation is primarily composed of representatives from the DoE (which serves as the office of the UNFCCC's national focal point) and supplemented by individuals from the Ministry of Finance, Corporate Governance and Public Private Partnerships, Ministry of Foreign Affairs, and the Office of the Attorney General.

For international negotiations, AOSIS plays a central role in advocating for solutions to address loss and damage that date back to its inception. In recent years, there have been attempts to push for reforms of the existing climate finance architecture, specifically in the GCF. In 2019, AOSIS made a submission on draft guidance to the GCF with a number of loss and damage reforms

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that included requesting the board to establish a loss and damage "Emergency Response Window" and to incorporate the addressing of loss and damage in the GCF's updated strategic plan as part of its core vision and as one of its strategic directions (Alliance of Small Island States 2019). This proposal was watered down by developed countries in the final decision to only invite the board to "continue providing" finance "for activities relevant to averting, minimizing and addressing" climate change impacts more broadly within the existing business model and structure of the GCF (i.e., no institutional reforms). The decision also invited the GCF board to "facilitate efficient access" to such resources and to take account of the Warsaw International Mechanism's strategic workstream on "enhanced action and support."

In light of the pushback on these reforms, Antigua and Barbuda, in its capacity as AOSIS chair, strategized and implemented a concerted effort to include loss and damage in the UNFCCC finance mechanism, beginning at COP26 in Glasgow. AOSIS, together with the Group of 77 and China (G77 & China), focused on "concrete outcomes on financial support for loss and damage," including the delivery of a "firm mechanism" (Alliance of Small Island States 2021c). This effort manifested itself in a G77 & China position for a decision to establish the loss and damage finance facility designated as an operating entity of the UNFCCC's financial mechanism and a process to operationalize the facility by COP27 in Sharm El Sheikh (Alliance of Small Island States 2021a). There was, however, further pushback on this proposal. The COP26 presidency in lieu of an agreement on a facility provided a text for the establishment of a three-year dialogue "to discuss the arrangements for the funding of activities to avert, minimize and address loss and damage" (UNFCCC 2021). In the COP26 closing plenary, the AOSIS chair reluctantly joined consensus and stated:

> We [AOSIS] firmly believe that the dialogue should lead to a conclusion that a new Loss and Damage Finance Facility will be adopted at the next COP [i.e., COP27]. This is the basis on which we understand the decision before us. (Alliance of Small Island States 2021b)

At the June 2022 session of the UNFCCC subsidiary bodies, Antigua and Barbuda, as AOSIS chair, engaged in the first Glasgow Dialogue on behalf of its membership and highlighted apparent gaps in funding arrangements for loss and damage, especially under the UNFCCC. AOSIS also began a concentrated program of work with G77 & China that included a concrete proposal for a new, fit-for-purpose multilateral fund under the UNFCCC aimed at addressing loss and damage and the introduction of an item on the COP27 agenda to provide a space for the discussion of this and other proposals (Alliance of Small Island States 2022a, 2022b; UNFCCC 2022b). This work culminated in an agreement at COP27 to establish new funding arrangements which include "a fund for responding to loss and damage whose mandate includes a focus on addressing loss and damage" (UNFCCC 2022a). A member of the Antigua and

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Barbuda delegation has also sat on the Transitional Committee, established to further develop the operationalization of the financial arrangements and fund on loss and damage.

4.4.3 Commission of Small Island Developing States on Climate Change and International Law

Given the slow pace of progress on loss and damage within the UNFCCC, Antigua and Barbuda and other SIDS have explored options using other international legal frameworks. At the beginning of COP26 in Glasgow in November 2021, the prime minister of Antigua and Barbuda, Gaston Browne, and the prime minister of Tuvalu, Kausea Natano, announced the signing of an agreement to establish the Commission of Small Island Developing States on Climate Change and International Law (Freestone et al. 2022). Some saw the move as a strategy to send a message to COP26 that more needed to be done and to raise the UNFCCC's ambition to do more. The founding members signaled that they would request an advisory opinion from the International Tribunal for the Law of the Sea (ITLOS) concerning sea-level rise, protection of the marine environment, and international responsibilities (Tanaka 2022).

4.5 INSTITUTIONS

Interviewees described a number of examples of loss and damage ranging from those at the macro-level (e.g., loss of GDP after a storm, stranded assets) to the micro-level (e.g., loss of fishing traps as a result of hurricanes), suggesting high levels of awareness across institutions. Moreover, interviewees discussed a wide range of types of losses and showed familiarity with the distinction between economic and noneconomic losses. For example, one interviewee from the Fisheries Division described the effects of storms for the sector that they work in: the loss of equipment for fishers; the loss of fishing infrastructure, such as docks and access to clean water; the "downtime" for fishers in the period after a storm while their equipment is being replaced or repaired; and the damage to or loss of coral reefs and marine life (Interview 3). Several interviewees also touched on the foregone development opportunities associated with having to deal with the adverse effects of climate change:

> So when we talk about climate change loss and damages now, they're looking at things in terms of the loss and damage over the long term and loss of ecological services, how you quantify those and so on. And then you come into the whole argument of quality measurement versus quantity measurements and how do you do your green accounting for loss of services from climate change things and so on, and loss of investment now that you're investing into mitigation to protect other productive sectors. (Interview 5)

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An interviewee from the DoE also noted the challenge of operationalizing loss and damage governance and practices: "What does the loss and damage project look like? When do you say 'This is a loss and damage project' … a transition from an adaptation project to … 'okay, this is loss'? When do you have the funeral party, and the eulogy, and so on? When do you have that? And nationally, we need to have that conversation" (Interview 2). This highlights the ambiguity around loss and damage and the problem of trying to translate an abstract concept developed at the international level to practical technical solutions that grapple with loss on the ground and across sectors.

Different departments also had different incentives for engaging with adaptation and loss and damage projects. For example, the MoF had recently incorporated a focus on climate finance and was involved in the development of GCF adaptation proposals as a source of funding: "We recognize that with Antigua not being eligible for development assistance on account of our high-income status we have to pay attention to alternative sources of financing. And climate financing is one of those things that, within the Ministry of Finance, we have decided we need to pay close attention to" (Interview 1). Interviewees in the MoF highlighted that they were very aware of the adverse effects of climate change and the current and forthcoming costs for the country of managing climate risks and resulting loss and damage. While several interviewees spoke about the role of the CCRIF favorably as a source of finance after extreme weather events, there was also a growing sense that other forms of climate finance might be necessary. The aforementioned quote also alludes to the politics behind the official development aid metrics which are seen by some stakeholders as further disadvantaging a country like Antigua and Barbuda by excluding them from official development finance.

4.5.1 Investing in Resilience across Institutions

One area of close overlap between conceptions of loss and damage at the international level and the way interviewees discussed core national economic interests concerned the idea of climate change resilience. The term "resilience" has come to prominence in climate change discourse in the last two decades. It refers to the capacity of a system to absorb disturbances and still retain the same structure and function, while maintaining options to develop (IPCC 2012). Interviewees identified multiple forms of climate resilience across the range of sectors we covered. They acknowledged growing recognition across government of the need for climate change-resilient infrastructure and an economy that is resilient after extreme weather events. They also noted the investment that building this resilience requires: "We recognize that from the Ministry of Finance perspective, we can't invest [USD] 100 million in an asset that's going to be destroyed the next day if we get a hurricane or very heavy rains. It needs to be built in such a way that the investment is protected, and there's a cost to protecting that investment" (Interview 1). An interviewee from

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the NODS looked at this from a DRR perspective: "Most people look at disaster management as a response, but disaster management is more of a developmental issue. As such, you have to look now at the way we actually invest in it, not more as an expenditure but more so as an investment" (Interview 5). Some interviewees noted the challenges to procurement processes and the additional investment required upfront to deliver climate change-resilient infrastructure. One particular example was discussed by a number of interviewees: the government's Road Infrastructure Rehabilitation project. Funded by the UK Caribbean Infrastructure Fund under the CDB, the goal of the project was to cover the incremental cost of adaptation along a number of main roads. The design took into account the projected rainfall extremes for the island as well as the environmental, social, gender, and disability safeguards and access requirements, including adequate sidewalks and space for public transportation. An interviewee noted as part of the contracting process that the government was, at the time of the interview, asking for quotes for both the business-as-usual version of infrastructure and climate-resilient models. They mention that cost is the main barrier to building more climate-resilient roads: "We have to build in some 'resilience' in the rules [regarding contracting for the building of roads] … Obviously, if we want to protect the investment, then it's best to do it, but it's just the cost would prohibit us from doing what everybody says: 'Build back better'" (Interview 1). Civil servants were also turning their attention to the resilience of other systems. For example, an interviewee from the MoF noted an increased focus on what is needed to promote resilience within the economy after an extreme weather event: "[Hurricane Irma] affected us fiscally significantly. It affected us fiscally, because September is generally a revenue slow month, and then it just ground to a halt … What's priority for us now is looking at those things that we need to fix, so that the economy can get going as soon as [possible] after a disaster like this" (Interview 1). Another interviewee from the MoF noted that there was a Canadian-funded World Bank and Global Facility for Disaster Reduction and Recovery project underway at the time of the interview to improve the resilience of public financial management systems in the aftermath of a storm. Finally, one interviewee from the Fisheries Division noted that they try to incorporate resilience into everything they do but also noted that "fisherfolks typically are very adaptive, very resilient … they tend to have the issue of occupational plurality and that has made them very resilient" (Interview 7).

4.6 IDEAS

Different types of knowledge and ideas were highlighted across the interviews as being important in the loss and damage context. This section focuses on three: (a) public sector data; (b) local knowledge; and (c) experiential knowledge. The first type of knowledge that policymakers said they use is data collected through existing or planned projects in the public sector or in collaboration

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with NGOs. This included, for example, environmental data gathered by the DoE, hydro-meteorological data gathered by the Met Office, or data on wildlife species collected by the Environmental Awareness Group and their partner NGOs (Interviews 2, 9, 10).

Some departments signaled an awareness of the need for quality data about loss and damage. An example of a department that relies heavily on data-gathering and analysis was the NODS. An interviewee noted that "we work through all arms of the states. We also rely heavily on the technical expertise of the various government agencies as well as NGOs" (Interview 5). NODS actors also rely on both systematic data-gathering through public sector bodies and local knowledge (discussed later). Interviewees from the MoF also highlighted their reliance on data: For example, the ministry was at the time of the interview considering subscribing to the CCRIF's excess rainfall policy based on information provided by the government's climatologist (Interview 4). One interviewee at the DoE noted the advantages of having a strong evidence base: "I think it's really important to have scientific rigor for economic analysis, financial decision-making, health reasons, like the basic things. So I love this work because it's so science-based. And in this world of politics and intimidation, you know, you cannot beat science" (Interview 2). The interviews also identified important connections between the collection of national-level data and the debates about loss and damage in the UNFCCC. For example, one interviewee involved at both the international level and the national level noted the way in which collecting data could help advance the issue at the international level: "We're at a stalemate [at the international level]. We've run out of things to talk about for loss and damage. We need to start to know, show the data … We need to start saying 'This is as scary as we think,' or 'It's as scary as we think, but hey now, we have to get it done'" (Interview 2). A second form of data on loss and damage that was relied on across government departments is local knowledge. The climate change adaptation literature suggests that local knowledge may contribute to adaptation to climate change in a number of ways (Naess 2013). Our research shows this may also be true for loss and damage. For example, in the Fisheries Division there were established channels of communication between fishers and the division (Interviews 3 and 7). It is also clear that sometimes local knowledge acts as a supplement when more systematic data collection is not possible or sustainable. An interviewee working in NODS noted the complementarity of the different forms of data they gathered, saying that NODS had established a system that had been institutionalized to allow local knowledge to feed into planning:

> The district disaster committee volunteer system is a very crucial component because these volunteers … they have been trained in different aspects of disaster management and they are actually in the communities. They actually monitor things and report back. So when they notice certain issues, they also provide feedback for us. So we're getting information not only from assessments being done and work being done by the

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public sector but also persons living in communities who notice certain issues. They flag certain things, whether it be flooding issues, land degradation, improper building … anything like that, general concerns that come up. (Interview 5)

Interviewees at the Fisheries Division, the Department of Marine Services and Merchant Shipping, and the DoE also noted their reliance on forms of local knowledge and anecdotal data collection when systematic data was not available (Interviews 6, 7, 11).

A third type of knowledge that several interviewees implicitly identified can be classified as experiential. Experiential learning theory defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb 1984). Interviewees identified a growing awareness among politicians and policymakers about the need to understand and address extreme weather events, especially hurricanes, since the country's and region's experiences of the storms of 2017. For example, one interviewee spoke positively about a project about data-gathering for more precise risk assessments:

INTERVIEWEE: So we're on our way to being prepared [for when international financial institutions ask for risk assessments]. And I have to say that the government has been very supportive in having really good technical people to collect the data. And we're spending money to … Three million dollars just on the data collection, and economic data collection exercises … But they were willing to pay.

INTERVIEWER: It feels like that's shifted, that willingness. Do you think that's right? What do you think has changed the politician's minds on that?

INTERVIEWEE: Well, hurricanes have helped a lot. (Interview 2)

Another interviewee also noted that the experience of the 2017 storms has made policymakers more receptive to information about disasters and climate change: "It has somewhat gotten better because now for many years we've been warning them [politicians] about certain things. They didn't believe us. After 2017, I believe we have quite a few more people that are willing to listen now" (Interview 5).

4.6.1 Knowledge about SOEs

Given the huge impact of extreme events like hurricanes on Antigua and Barbuda, SOEs are largely absent from the country's discussions about loss and damage. When prompted, several interviewees discussed SOEs but approached this issue quite differently depending on the nature of their work. For example, an interviewee from the MoF, when asked about SOEs, downplayed the issue: "Well, what I would say is when you said 'slow onset impacts,' I thought of an expression that we would use 'First world problems' … because we have some very pressing issues" (Interview 1). In contrast, an interviewee from NODS said that SOEs are incorporated in the comprehensive risk management approaches

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that they deploy: "We look at everything. We look at extreme weather, slow onset, human-based, etc. Because we're looking at it comprehensively, we attempt to look at the whole gambit of things" (Interview 5). An interviewee from the Fisheries Division also highlighted the fact that a lot of attention goes to building resilience and rehabilitating after hurricanes but noted the impact of droughts on the sector:

> When we're thinking about climate change from a fisheries point of view a lot of focus tends to be on the immediate big, you know, the hurricanes. But obviously there are other issues, so for instance for us droughts are a big problem because that can impact the industry as well if you're talking about the water supply or food and safety issues. (Interview 3)

Data-gathering on SOEs was much more sporadic or nonexistent at the public sector level. Interviewees noted that SOEs are less well documented and the documentation is not as comprehensive or may not consider the full range of damages associated with different types of SOEs:

> One of the things, however, that makes it kind of difficult is that traditionally, there hasn't been … documentation of slow onset hazards, especially in this region in terms of the damages they cause. It's easier to do the assessment for an intense event, a high-impact event. But the damages done by, for example, droughts … They would look at it from an agricultural perspective or even an environmental perspective. But [what about] for example, the impact of drought on public or physical infrastructure, drying of the earth, cracking damage to pipes, resulting flooding after droughts and so on, loss of soil, land slippage, that sort of thing and so on. It is not as clearly defined or well documented as high-impact and sudden onset. (Interview 5)

Bottom-up local knowledge seemed to be the main source of information about a variety of SOEs. For example, when asked about the monitoring of SOEs such as sea-level rise or ocean acidification, an interviewee from the Fisheries Division noted: "Well we haven't really been monitoring. We have in the past had sensors and [monitored] some other things like pH, but it's not something we've been able to sustain" (Interview 3).

4.6.2 Tension between Economic Interests and Loss and Damage Data Collection

Some interviewees noted the politically sensitive nature of public sector data-gathering at the national level: Some data may have potential implications for the state's material interests. Paradoxically, in international negotiations on loss and damage, developing countries (AOSIS in particular) have sought to demonstrate liability for climate change loss and damage and benefit from compensation; yet at the national level, data shows climate change impacts can have negative political or economic impacts.

In many ways, addressing loss and damage becomes a Catch-22 situation for developing countries. For example, one interviewee from the DoE

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noted that as they start to collect more detailed data about climate-related risks, this will have an effect on financial decision-making regarding, for example, the risks to properties in Antigua and Barbuda's "hot zone." The interviewee highlighted the types of questions that any country trying to develop in the context of climate risks and loss and damage will face: Should that information about risks to specific properties be released? Who should it be released to? This raises fundamental questions about the relationship between data quality, how transparent the government should be, and whose interests are protected by varying degrees of transparency (Interview 5).

Another interviewee suggested that data for adaptation planning needs to be of a high quality so that the government can use it confidently and transparently. Quality data also sends a signal that the government takes planning for climate change seriously. The interviewee noted the disadvantages of lesser quality data, specifically the link to potential liability claims:

> So as a civil servant … If I do something that opens a door for liability, my government has to pay for the cost. So we have to be very careful about what we say in the public, and how transparent we are going to be … So all of the information that we have to provide, it has to have a rigorous review process to ensure that we have good data quality. (Interview 2)

The interviewee further suggested that different government ministries viewed these issues differently:

> And right now, for example, we wanted to develop a project for the Green Climate Fund to collect a lot of detailed data … And then have an overlay of financial information – economic and financial information over that for the whole island … And [there are concerns] … that that is going to be too open and too transparent. In a world where it's so easy to blacklist a small island state. (Interview 2)

The interviewee also noted the increasing involvement of the private sector in these considerations, pointing to growing interest from banks and insurance companies in the information held by the government. Even interviewees in the DoE factored in economic considerations to their decision-making about data collection. They tended to see economic interests as being symbiotic with planning in anticipation of the risks associated with climate change:

> So I thought it would have been nice to do a national study so as not to caution the people away from investing in Antigua … that Antigua's still a great place to invest. But we can now be an honest, open type place where you can invest with confidence … So I think we can be a little bit more surgical and focused when we're conducting the assessment of the risk of any particular property. (Interview 2)

This discussion highlights the dual pressures on countries facing climate change-related loss and damage. On the one hand, the ability to monitor, document, and understand loss and damage of various sorts is crucial in improving

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ways of averting and/or minimizing future loss and damage and in pursuing financing to address these issues where possible. On the other hand, the very existence of this data (particularly if it is in the public realm) further enhances a country's economic vulnerability as international finance, banking, and insurance sectors (among others) gain a better understanding of the risks of potential loss and damage. The story of loss and damage knowledge governance at the national level risks becoming one of "you are damned if you do and damned if you don't," further underscoring the profound justice questions raised by the adverse effects of climate change.

4.7 CONCLUSION

While applying the four-pronged analytical framework developed in Chapter 2 (Table 4.1), this chapter has particularly emphasized the role of international leadership, ideas, and knowledge in an emerging area of climate change policy in a state that faces multiple climate change risks. It has provided empirical evidence to illustrate how national policy actors conceptualize loss and damage. Loss and damage has historically been an ill-defined concept within the UNFCCC (Boyd et al. 2017; Calliari 2016; Vanhala & Hestbaek 2016), spanning DRR and climate change adaptation. This ambiguity – while facilitating progress at the international level – has often acted as a barrier to promoting national-level understanding of what constitutes loss and damage governance. For many of the interviewees, loss and damage is very much understood through a DRM or development lens, and interviewees tended to point to regimes or international institutions other than the UNFCCC as relevant in their work on loss and damage. Further research can continue to explore which international actors have ideational influence and how.

The research in this chapter also shows that policymakers are acutely aware of the need for data to support loss and damage policymaking. Creative approaches that draw on systematic public sector data and local knowledge are relied on across ministries in Antigua and Barbuda. However, a number of civil servants see the sustainability of data-gathering and monitoring projects as a challenge. There was also a consensus that while politicians' awareness of the need for data to help with the preparation for and rehabilitation after extreme weather events such as hurricanes had increased with recent experiences of high-impact events, many pointed to the fact that there is relatively little evidence-gathering related to SOEs.

The research also highlights some of the paradoxes associated with translating loss and damage policy decision-making from the global to the national level: Calls to explore liability as part of a policy response to loss and damage at the international level have generally come from the Global South and their civil society allies. In the UNFCCC sphere, those understood to be liable are the Global North, that is, historically high-emitting states. At the national level,

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TABLE 4.1 *Summary of Antigua and Barbuda*

Key climate change hazards, risks, and impacts	Key policies in adjacent policy domains	International influences	Institutional insights	Ideas
• Higher-intensity hurricanes • More frequent droughts • Temperature increases • Sea-level rise and coastal erosion	• Environmental management policy • Environmental Protection and Management Act (2019 amended) ○ Sustainable Island Resources Framework • Disaster Management Act (2002) • UNCCD National Action Plan (2015) • SDG Medium-Term Development Strategy (2015) • Road Infrastructure Rehabilitation Project • NAP is being developed out of a GCF funded project on Readiness and Preparatory Support (using model data and the country's Geographic Information System database to create vulnerability map) • Updated Nationally Determined Contribution (2021)	• Sendai, CARICOM, finance-related (World Bank, GCF, CDB), United Nations Development Programme, few mentions of UNFCCC • Commission of Small Island Developing States and International Law (Litigation partnership with Tuvalu [2021] and ITLOS) • Regional: CDEMA, CCRIF	• Commonhold land-tenure and land-use practices shape DRM strategies (common land use since 1834, but disputes over land ownership after 2017 hurricane season) • Path dependencies from colonialism account for construction of social vulnerability to climate change impacts • High-level awareness of loss and damage across national institutions • A lot of work on climate change in Antigua and Barbuda has always been carried out by the DRR community but frustration that DRR and climate change community speak past each other at international level • Awareness of climate change-related stranded assets • Ministry of Finance is very climate change aware, involved in GCF proposals • Climate change resilience is one of the core cross-institutional themes	• Rise of "disaster capitalism" • Relevance of public sector data: Institutions across Antigua and Barbuda are aware of the need for a strong evidence base on loss and damage (e.g., environmental data, hydro-meteorological data, wildlife species data) but sustainability of data collection is still challenging • Local knowledge on loss and damage can act as supplement for nonavailable systematic data; local knowledge as communication device between public and authorities • Experiential knowledge about extreme events that are occurring makes authorities more receptive and assessments more precise • Gaps on SOEs in terms of both public sector engagement and evidence-gathering; role of local knowledge in bringing in experiences • Tension between gathering better loss and damage data and potential liability of national governments (especially when associated with investment decisions)

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however, there is a tension between gathering better and more data to assist with loss and damage assessments and with predicting potential future loss and damage on the one hand and the potential liability of national governments that might come with this information, particularly when it is associated with investment decisions (including potentially by corporations, such as insurance companies, banks, and hotel chains, for instance, in the Global North), on the other. This reversal of liability from Global North governments to Global South governments through the process of translating ideas and concepts from the international to the national level shows that ideas and information are not neutral but are underpinned by sociopolitical arrangements that can exacerbate existing vulnerabilities.

Antigua and Barbuda has developed national-level expertise to allow it to take a leadership role within UNFCCC negotiations on loss and damage, culminating in the establishment of a loss and damage fund at COP27. While many of the details remain to be worked out at the time of writing, COP27 marked a historic turning point in achieving a consensus that there is a need to address loss and damage directly and concretely. This recognition of the need for finance has the potential to correct some of the injustices we highlight here, but it remains to be seen whether this potential will be realized.

This chapter complements recent scholarship which has highlighted the influence of another, more amorphous, institutional landscape that shapes Antigua and Barbuda's engagement with the loss and damage agenda: the legacies of colonialism. Look et al. (2019) argue that colonial land-tenure and land-use legacies are preserved, modified, and threatened during periods of extreme events. Future research on this could situate some of these recent policy developments and forms of engagement at the international level within the longer-standing history of colonial practices. This chapter follows work that calls for empirical and contextual studies that pay explicit attention to how responses to climate change – even those that may appear to be at the more technocratic end of policymaking – will have specific implications for which institutions have power, whose voice is heard, and which forms of knowledge are privileged and which are shut out.

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