

# The Knowledge Politics of Climate Change Loss and Damage Across Scales of Governance

Lisa Vanhala, Michai Robertson and Elisa Calliari, UCL

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## Abstract

Whilst the international politics of climate change-related loss and damage has received growing scholarly attention, there has been less focus on national level policy responses. This is puzzling because climate change impacts are inherently local and political, and the need for national policy action is increasingly urgent. What knowledge and ideas do policy actors at the national level draw on when conceptualising the problem of climate change loss and damage? What are the attendant injustices that result from multi-scalar processes of the construction of governance problems? Drawing on insights from Science and Technology Studies about the politics of knowledge production, we analyse how governance problems are constructed and explore resultant injustices associated with trans-scalar problem construction. To do so, we focus on the paradigmatic case study of Antigua and Barbuda, illustrating the multiple and complex interactions between knowledge and politics in governing loss and damage. We conclude by calling for greater scholarly attention to the production of epistemological injustices, as specific forms of knowledge and ideas are translated across scales of action.

**Keywords:** Climate Change Loss and Damage; Knowledge Politics; Science and Technology Studies; Sociological Institutionalism

## Introduction

Scholars of environmental politics have long led the way within the wider disciplines of political science and international relations in enhancing understanding of the relationship between knowledge, ideas and governance (see e.g. Allan 2017; Haas 1992; Grundmann 2007; Lövbrand *et al.* 2009; Lövbrand 2011). Over the last decade there has been a growing challenge to the conventional view that science and society are independent of each other and that knowledge feeds into environmental policy-making in a linear fashion. Recent work has drawn on insights from the field of science and technology studies (STS) to show that states can sometimes steer the development of scientific knowledge; that selection among forms and sources of knowledge will always be contested; and that the use of one set of knowledge inputs rather than another will further some agendas over others (Ascher *et al.* 2010; Jasanoff and Wynne 1998; Jasanoff 2004; Methman 2013; Wagner *et al.* 2018). Scholarship in this vein takes the co-production of scientific claims and political and social order seriously (Latour 1987; Jasanoff and Wynne 1998).

However, this research has neglected three important factors. First, there has tended to be a selection bias: these studies often focus on case studies where knowledge, expertise and evidence (however uncertain, contested or flawed) exists. While some scholars have queried the relationship of scientific uncertainty to policy making (Ascher *et al.* 2010; Fisher 2013; 2016; 2018) this is distinct from the question of how *a lack* of knowledge, expertise and evidence shapes governance. Second, this research tends to not pay sufficient attention to the processes by which knowledge (or its absence) translates into policy-making behaviour by overlooking the role that the meaning-making activity of agents plays in the generation, adoption, use (and non-use) of certain ideas and evidence and the way in which ideas and knowledge shape perceptions of national interests. Third, this research often focuses on one

level of governance ignoring how the construction of governance objects occurs differently at different scales and the tensions and injustices that arise from this process.

Studying the governance of climate change-related loss and damage (known as L&D) – those residual impacts of climate change that cannot be adapted to – offers a paradigmatic case that can help us to better understand these dynamics. The risks and impacts of climate change are already being felt globally (IPCC 2014; Tschakert et al. 2019). They include an increased likelihood of extreme weather events — such as hurricanes and heatwaves — as well as forms of what Rob Nixon (2011) has called ‘slow violence’; those inhabited slow-onset impacts such as sea level rise and biodiversity loss which occur gradually and sometimes invisibly (IPCC 2018). As a result of these impacts there is a set of growing risks — and experience of — economic losses (e.g. loss of infrastructure, tourism) but also of what has been coined ‘non-economic losses’ (NELs) such as loss of place, culture and biodiversity (Adger *et al.* 2009, Serdeczny *et al.* 2018). The Parties to the United Nations Framework Convention on Climate Change (UNFCCC) have acknowledged that there is a need for the development of better knowledge, governance institutions and policies at the global, regional and national levels that grapple with loss and damage. However, progress has been slow because of divergences over whether the international governance response should be based on historical responsibility for carbon emissions, whether there is state liability for climate change-related harms and over the role compensation might play as a remedy (Burkett 2014, Roberts and Huq 2015, Roberts and Pelling 2018, Calliari 2016, Vanhala and Hestbaek 2016, Iris Allan and Hadden 2017, Johnson 2017a, Calliari *et al.* 2019, Calliari et al.2020).

The existence of a burgeoning literature on L&D politics at the international level highlights a lacuna: we know far less about how national level actors approach the L&D problem and the types of knowledge, expertise and ideas they are drawing on (but see Roberts and Pelling 2018; Thomas and Benjamin 2020, 2018a, 2018b). This matters because the

impacts of climate change are inherently multi-scalar and political (Adger et al., 2005; Hall and Persson 2018; Javeline, 2014). The way in which the L&D problem is constructed by different actors across levels of governance will shape whether and how it is understood, prioritised, institutionalised and operationalised in research and policy making. It also matters in addressing what Petra Tschakert and her co-authors (2019) call an “epistemological injustice” based on their finding that most accounts of lived experiences with climate change-related harm are from developed (not developing) countries. They join with others who have called for the advancement of a “socially-engaged and situated science of loss” (Barnett et al. 2016; Tschakert et al. 2019).

Our contribution is to explore how knowledge and power are interrelated in L&D governance, and how the construction of governance problems across scales can compound injustices. We address three specific research questions: what knowledge and ideas do policy actors at the national level draw on when conceptualising the L&D problem? How does a lack of data and knowledge on L&D shape political agendas across different scales? What are the attendant tensions that result from multi-scalar processes of the construction of governance problems?

This account contributes to the development of a grounded, politically-situated and place-based understanding of what L&D means in particular contexts by exploring the concept from the perspective of national policy-actors. First, we present the theoretical framework which bridges sociological institutionalist theory with insights from STS to suggest that it is worth exploring how ideas about the types of knowledge matter. Second, we present the research design and argue that the case of Antigua and Barbuda can help analyse these dynamics and contribute to theory building. The third section presents the findings. It identifies four distinct types of knowledge and ideas that policy-makers draw upon and then goes on to

show how these are shaping understandings of national interests across scales of governance. The final section concludes.

### **Theoretical Framework**

More than 20 years ago Peter Haas's ground-breaking article introduced the idea of "epistemic communities" and showed how scientists produce knowledge that can influence state behaviour and shape the likelihood of international environmental cooperation. In recent years, however, scholarship has challenged the implicit separation in the literature on epistemic communities of the production of knowledge from political activity. The STS literature has long paid attention to the social construction of science and the way in which knowledge is situated in cultural and socio-political landscapes (Jasanoff and Wynne 1998; Jasanoff 2004; Lövbrand *et al.* 2009; Methman 2013; Wagner *et al.* 2018). Bentley Allan's (2016) important study of the construction of the problem of climate change debunks the idea of being able to separate knowledge and politics suggesting that while it is intuitive to assume that the climate is a natural kind that can be represented scientifically in only one form, in fact there are competing and contentious representations of "the climate" in the scientific literature with different implications for the most appropriate governance arrangements.

Existing research has, however, tended to overlook several issues. First, these studies often focus on case studies where scientific claims exist (often either as the independent or dependent variable). We have very little understanding of how the absence of knowledge, expertise and evidence shapes policy making. Second, this research has tended to overlook the agency that policy actors exert at the ideational level in the way in which knowledge (or its absence) translates into policy-making behaviour. Third, this process of problem definition and construction occurs at different governance scales yet most existing studies focus implicitly on one level of governance. How is the L&D problem understood at different levels and what are the implications of this multi-scalarity?

In order to address these overlooked issues we bring insights from STS together with a sociological institutionalist approach that emphasizes the role of ideas and agents as ideational brokers. By examining how the problems of governance are constructed and come to be seen as legitimate we complement existing discursive approaches that can be overly structural. March and Olsen (1989) use the term “logic of appropriateness” to capture the essence of the mechanism by which knowledge is understood to be meaningful by policy makers: organizational norms are “followed because they are seen as natural, rightful, expected and legitimate” (March & Olsen 2004). The case of L&D policy making can help understand how a governance problem emerges. In order to explore how different ideas and forms of knowledge become relevant, meaningful or appropriate and the implications of this it is important to look at the role of the actors at the heart of this process and to uncover the tensions among these processes between the international and the nation-state level.

### **Research Design**

While on a conceptual level L&D policy is considered by some scholars and practitioners to be “beyond adaptation”, for others the overlap with adaptation policy is fuzzier rendering it difficult to operationalize. For example, two countries may be pursuing the same type of program, e.g. building resilience to storm surges, moving a community because of sea-level rise or promoting the adoption of new livelihoods, but one country might explicitly label their activities as part of a “loss and damage” programme of work while others would refer to this as part of their adaptation or development work. The challenge on one level is an epistemological one: in studying the construction of governance objects do we focus on the policy language and labels, or is it possible to identify policies that are “implicitly” related to L&D even if they are not referred to as such? Adopting an interpretivist epistemological approach allows us to articulate *in-situ* understandings of what the L&D problem is and how actors attempt to govern it.

We explore these issues by taking the vulnerable Caribbean small islands state of Antigua and Barbuda as a useful illustrative case study. The country is already experiencing impacts from extreme weather events, as exemplified by the three-year drought in 2012 - 2015, and the unprecedented 2017 hurricane season (category five hurricanes Irma and Maria) that left the island of Barbuda devastated causing around US\$ 155 million in physical damages and economic losses (GFDRR, 2017). Climate change is expected to lead to prolonged periods of drought, intense floods and increase in intensity of hurricanes (Government of Antigua and Barbuda, 2009). Climate projections indicate a decrease in average annual rainfall, increase in rainfall intensity leading to flooding, likely increase the intensity of tropical storms, and accelerated coastal erosion and inundation by 2080 (Simpson et al. 2012).

Antigua and Barbuda's economy is highly dependent on natural resources, and tourism represents the largest economic sector. Studies have estimated that 10 per cent of the major tourism properties, 2 per cent of road networks, and 100 per cent of seaports in the country are at risk from 1 metre sea level rise (GCF 2017). Sea level rise and coastal erosion could cost the national economy between 62 and 209 per cent of GDP in 2080 for mid-range sea level rise and high sea level rise scenarios respectively (Simpson et al. 2017).

Given the gravity of these projections and recent experiences with extreme weather events, policy-makers in Antigua and Barbuda are beginning to grapple with what L&D policy-making entails. Taking a socially-situated and place-based perspective inherently limits the extent to which specific findings will apply to other contexts but we believe that focusing on this single case-study can generate important insights on the relationship between knowledge and political processes in the realm of L&D governance and also helps to address the epistemological injustice of the geographic focus of research on loss and damage to date.

The analysis draws on a variety of data: twelve semi-structured interviews conducted in April 2019 with policy actors and civil servants from the Department of Environment, the

Ministry of Finance, the National Office of Disaster Services (NODS), the Fisheries Division and the UN Development Program (among others) as well as NGO representatives; analysis of legislation and policy and media coverage and participant observation at the parliamentary committee hearings for the passage of the *Environmental Protection and Management Act 2019*.

### **Knowledge Politics and Problem Construction**

The discussion below first explores some of the key features of the construction of the governance problem of L&D at the international level before it then turns to a discussion of how policy actors at the domestic level in Antigua and Barbuda draw on different ideas, forms of knowledge and evidence (and lack thereof) to define the L&D problem in a place-based way. The discussion identifies some of the tensions and injustices in problem construction across governance scales.

#### ***Problem Construction at the International Level***

Two key insights from the rapidly growing literature on the international politics of L&D are particularly relevant for understanding the tensions associated with the problem definition process across levels of governance. First, there is a scholarly consensus within the literature on L&D that there is no global consensus on what L&D means and no officially adopted UN definition to-date (Calliari et al. (2019); Calliari et al. (2020), Tschakert et al. 2019; Vanhala and Hestbaek 2016). This stems from historic and contemporary disagreements over multiple issues. This includes, for example, strong contention over whether ideas of liability and compensation as a remedy underpin this area of policy making (with developed country parties being firmly opposed to any notion of liability or compensation); whether addressing the loss and damage problem should be a part of adaptation policy making or is something ‘beyond adaptation’; whether the UNFCCC or the UN Disaster Risk regime is better placed to deal with the problems of L&D. This ambiguity of the problem of L&D at the international level has

implications for problem definition at the national level as the next section will show. Second, there are growing tensions between developed countries and developing countries over how the international community should be addressing L&D: developing countries consistently argue that work on the third function of the WIM on “enhancing action and support, including finance, technology and capacity-building” is neglected at the expense of the WIM’s first function on “enhancing knowledge and understanding of comprehensive risk management approaches” (UNFCCC Decision 2/CP. 19, para 5). Agreement at the UNFCCC negotiations in December 2019 to establish the Santiago Network for Averting, Minimizing and Addressing Loss and Damage and to invite the Green Climate Fund (‘GCF’) Board to “facilitate efficient access” to financial resources for loss and damage and to take account of the WIM’s strategic workstream on “enhanced action and support”, was seen as a victory for developing countries in potentially fostering more support. It is clear that remedying the lack of evidence and knowledge on losses and damage has been prioritized by developed countries at the international level with developing countries suggesting that there has been disproportionate emphasis on this objective.

### ***Problem Construction at the National Level***

With our interlocutors in Antigua we explored the different types of knowledge and ideas that they drew on in developing L&D relevant policies and practices. We identified four different types 1) public sector data; 2) local knowledge; 3) experiential knowledge; and 4) heuristics about loss and damage-relevant topics from the international and regional level.

The first type was data collected through existing or planned projects in the public sector or in collaboration with NGOs. This included for example, environmental data gathered by the Department of Environment, 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). An example of a department that relies heavily on data-gathering

and analysis was the National Office of Disaster Services (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 as well as on community-level knowledge. Interviewees from the Ministry of Finance 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 Department of Environment 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 interviewee also identified important connections between the collection of national level data and the UNFCCC L&D negotiations.

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).

The interviewee framed the lack of data as potentially contributing to the stalemate at the international level. The construction of the causal problem of the lack of data leading to a lack of progress in this way contrasts with how developing country negotiators and ExCom members are increasingly framing this issue at the international level: as a zero-sum relationship between *understanding* loss and damage on one hand and *addressing* loss and damage on the other.

A second form of data on L&D that was relied on across government departments in discussions about how to define climate change loss and damage is local knowledge. The climate change adaptation literature suggests that local knowledge may contribute to effective

adaptation measures (Naess 2013). Our research shows this may also be true for L&D responses. 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 (at least in this small state context) that local knowledge can act 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. NODS had established a system 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 monitor things and report back. So when they notice certain issues, they provide feedback for us. We're getting information not only from assessments being done and work being done by the 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 Department of Environment also noted their reliance on forms of local knowledge and anecdotal data collection when systematic data was not available (Interviews 6, 7 and 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 policy-makers 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 hurricanes has made policymakers more receptive to information about disasters and climate change.

It has gotten somewhat 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).

A fourth source of ideas that fed into how policy actors define loss and damage as a governance problem came from different international and regional regimes. Interestingly, the international institutions and regimes that were mentioned most frequently included the World Bank and UNDP (which together with the EU had played an important role in the immediate aftermath of Hurricane Irma 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. Every interviewee mentioned regional institutions including the Caribbean Development Bank, Caricom, the Caribbean Disaster Emergency Management Agency (CDEMA) and the Caribbean Catastrophe Risk Insurance Facility (CCRIF).

Interview data showcases the central but slow-moving process by which international policies influenced thinking about how to define the L&D problem at the national level. An

interviewee at 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. They can't yet agree on what is loss and damage among themselves, never mind ... it's a moving goal post. It's a moving goal post (Interview 5).

When asked about where the interviewee had encountered this ambiguity about what L&D is the interviewee noted:

You encounter it at a national level, 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).

...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).

Thus the very ambiguity which contributed to the institutionalisation of climate change loss and damage as a governance problem within the UNFCCC and which was seen as a victory for developing countries (Vanhala and Hestbaek 2016), nonetheless poses significant challenges for actors at the domestic level particularly in developing countries facing capacity issues.

### **Tensions and Injustices in Problem Construction Across Scales of Governance**

Problem construction is never situated at single level of governance. By looking at three illustrative examples of how policy actors in A&B navigate some of the challenges associated with the process of defining and understanding a governance problem we begin to understand some of the tensions and injustices that emerge.

### *Slow Onset Events*

At the international level, work on responses to slow onset events – such as sea-level rise, drought and salinization, for example – has been a core part of the workstream on L&D since the establishment of the WIM in 2013 (though it has moved at a slower pace when compared to other action areas). Slow onset events are a central part of the understanding of the loss and damage problem at the international level. This is at least in part because of advocacy efforts on the part of pacific small island developing states who are facing significant losses as a result of sea-level rise. Yet this topic was scarcely mentioned by interviewees in Antigua suggesting it does not feature in the construction of the problem within this context. Most interviewees focused on extreme weather events when discussing climate risks and specific forms of losses and damages. This is unsurprising given the nature of the hazards in this region and assessments of future climate risks. When prompted, several interviewees discussed slow onset impacts but approached this issue quite differently depending on the nature of their role highlighting the situated nature of problem construction and the agency exerted to determine whether an issue is of relevance for governance processes. For example, an interviewee from the Ministry of Finance when asked about SOEs said: “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 highlighted that slow onset impacts are incorporated in the comprehensive risk management approaches 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 slow onset impacts was much more sporadic or non-existent at the public sector level. Interviewees noted that slow onset hazards are less well documented:

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).

Similarly, when asked about monitoring of slow onset impacts such as sea-level rise or ocean acidification an interviewee from the department of fisheries 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). The sustainability issue was highlighted across interviews. It was noted that data-gathering is often project-based and systematic data can be collected for a time but when donor funding stops the project often ceases meaning that there are data gaps over time that can also undermine effective decision-making.

This lack of prioritization of understanding slow onset events and their attendant losses and damages makes sense given current lived experiences of extreme weather events and resultant losses and damages. It also shows how the governance problem of loss and damage

is ultimately shaped through a combination of material and ideational features that are navigated by policy actors.

### *The Costs of Addressing L&D*

Interviewees in A&B described a number of examples of losses and damages ranging from those at the macro-level (e.g. loss of GDP after a storm) to the micro-level (e.g. loss of fishing traps as the result of hurricanes). Moreover, interviewees discussed a wide-range of types of losses and showed high-levels of awareness of ideas distinguishing economic and non-economic losses even though these terms were not explicitly used. 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 as well as the damage to or loss of coral reefs (Interview 3).

Different departments also had different incentives for engaging with adaptation and loss and damage projects. For example, the Ministry of Finance had recently incorporated a focus on climate finance and was involved in the development of GCF adaptation proposals.

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 Ministry of Finance highlighted that they were becoming all too aware of the adverse effects of climate change and the current and forthcoming costs for the country of managing climate risks and resulting losses and damages. While several interviewees spoke about the role of the CCRIF favourably as a source of finance after extreme weather events, there was also a growing awareness of the need to explore other forms of climate finance. The

quote above also alludes to the politics behind the official development aid metrics which are seen by some stakeholders to further disadvantage a country like A&B by excluding them from official development finance.

Interviewees also acknowledged growing recognition across government of the need for climate change-resilient infrastructure and an economy that is resilient after extreme weather events:

We recognize that from the Ministry of Finance perspective, we can't invest 100 million [dollars] 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 the National Office of Disaster Services (NODS) looked at this in a similar way:

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).

An interviewee from the Department of Environment also noted the challenge of operationalizing L&D 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).

### ***The Construction of Liability and L&D related Knowledge Production***

Engaging with L&D governance in terms of public sector data-gathering was understood by some interviewees to be politically sensitive at the national level with potential implications for the state's material interests. Paradoxically, while the ideas of liability for climate change impacts and compensation as a potential remedy have been historic touchstones for developing

countries – and AOSIS in particular – in the international negotiations on L&D, these dynamics were beginning to play out very differently at the national level.

In many ways, beginning to address L&D becomes a catch-22 situation for developing countries. For example, one interviewee from the Department of Environment 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 the “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). The interviewee suggested that data for adaptation planning needs to be of high-quality so that the government can have confidence in it and use it in a transparent way which will also have the advantage of sending a signal about the Government’s seriousness about planning for climate change impacts. 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 also noted 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 backlist a small island state (Interview 2).

The interviewee also noted the growing 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 Department of Environment had economic considerations situated squarely within 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 that countries facing climate change-related L&D face. On one hand, the ability to monitor, document and understand losses and damages of various sorts is crucial in improving ways of averting and/or minimizing future L&D and in pursuing financing to address these issues where possible. It may also play a pivotal role in advancing international governance initiatives on L&D. 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 losses and damages. 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.

## **Conclusion**

Our analysis explores the relationship between ideas, knowledge and the construction of governance problems in an emerging area of climate change policy. While on a conceptual level the L&D problem has its origins in the global climate change regime, scholars have

argued that it is set to have “increasing meaning and value at the national policy level especially in the wake of its inclusion in the Paris Agreement as a separate article to adaptation” (Roberts and Pelling 2018). By exploring politically-situated understandings of L&D among national level policy-makers and civil servants and the types of data they draw on, we make a number of contributions.

First, we provide empirical evidence to illustrate how national policy actors conceptualise L&D. As previous research has shown, L&D is an ill-defined concept within the UNFCCC (Boyd et al. 2016; Calliari 2018; Calliari et al. 2020; Vanhala and Hestbaek 2016). Spanning disaster risk reduction, climate change adaptation and engaging with the idea of limits to adaptation, the range of policy issues included under the L&D umbrella at the global level has been relatively widespread and progress has been slow. Evidence presented here suggests that this ambiguity - while facilitating progress at the international level (Vanhala and Hestbaek 2016) - can be a barrier in promoting national-level understanding of what the governance problem is. For many of the interviewees, L&D is very much understood through a disaster risk management or development lens and interviewees tended to point to regimes or international institutions other than the UNFCCC as relevant in their work on L&D. Further research could explore in more depth which international – and importantly regional – actors and institutions have voice and power in defining the problem of climate change loss and damage.

Second, we show that policy-makers are acutely aware of the need for data to support L&D policy-making. Creative approaches that draw on systematic public sector data and local knowledge is relied on across ministries in A&B. However, there are problems with the sustainability of data-gathering and monitoring projects. 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 slow onset events. Our findings also suggest that climate change-induced erosion of development gains and resilience can also impact on national policy processes directly not just through a lack of data (see also Benjamin, Thomas and Haynes 2018).

Finally, we highlight some of the paradoxes associated with translating L&D policy decision-making from the global to the national level: calls to explore liability as part of a policy response to L&D at the international level have generally come from developing countries and their civil society allies. In the UNFCCC sphere, those understood to be liable are the historic high emitting developed states. At the national level, however, there is a tension between gathering better and more data to assist with loss and damage assessments and with predicting potential future losses and damages on 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 (Benjamin and Thomas 2019). This reversal of liability from developed countries to developing country governments through the process of translating ideas and concepts from the international to the national scale shows that ideas and information are not neutral but are underpinned by socio-political arrangements that can exacerbate existing vulnerabilities.

This work is part of an emerging research agenda that seeks to critically analyse the politics of L&D at the national, regional and international level (Thomas and Benjamin 2020; Tschakert et al. 2019). It 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 policy-making - will have specific implications for which institutions have power, whose voice is heard and which forms of knowledge and ideas are privileged and

which are shut out. Finally, these insights also matter for the future of *Environmental Politics* in terms of the role the journal will play in addressing epistemological injustices.

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## APPENDIX 1: LIST OF INTERVIEWEES

<b>Interview reference</b>	<b>Organisation</b>	<b>Date of interview</b>
1	Ministry of Finance	1 April 2019
2	Department of Environment	1 April 2019
3	Fisheries Division	2 April 2019
4	Ministry of Finance	2 April 2019
5	National Office of Disaster Service	2 April 2019
6	Department of Environment	3 April 2019
7	Fisheries Division	3 April 2019
8	Department of Environment	4 April 2019
9	Environmental NGO	5 April 2019
10	Meteorological Services	9 April 2019
11	Department of Marine Services and Merchant Shipping	9 April 2019
12	International Organisation	12 April 2019

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