

**The Interaction of Climate Change with Territorial Sovereignty:
Tuvalu as a Case Study**

Submitted in partial fulfillment of the requirements for the degree of
BA Environment (Honours)

Jacob Oosterhoff

Simon Fraser University

GEOG 491: Honours Essay

Dr. Nicholas Blomley

April 26, 2020

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"We don't want to leave this place. We don't want to leave, it's our land, our God given land, it is our culture, we can't leave. People won't leave until the very last minute"

- Paani Laupepa, former assistant secretary at Tuvalu's Ministry of Natural Resources, Energy and Environment. (Ralston, Horstmann & Holl 2004, n.p.).

**But for me,
my story is what
I leave behind for my children
and their children
may they won't be scared
to retell our story
so that others know
about who we are
and where we come from
this is what climate change
cannot take from us
the Pacific warriors
of change.**

- Tolu Muliaina, Senior PISFCC member (2019) (PacificClimateResistance.org n.d.)

Introduction

Halfway between Hawaii and Australia, nestled in the Polynesian Pacific, lies the small-island developing state (SIDS) of Tuvalu. Under contemporary international law, Tuvalu is institutionalized as one of the sovereign territorial states forming the assemblage of sovereign territories through which international relations theory tends to be conducted and understood. As a sovereign state, Tuvalu is often defined by practitioners of international law as an institution of “supreme authority within a given territory” (Philpott 2016, n.p.). In recent years, the small territorial state of just over 10,000 people has received international attention due to narratives of encroaching sea level rise promulgated by various media outlets. Indeed, there exists a distinct and increasing threat that some or all of the land within the territory of Tuvalu will erode and disappear beneath rising ocean waters due to factors resulting from anthropogenic global warming, including rising sea levels resulting from ice-melt and the thermal expansion of ocean water, as well as the death of corals which form the foundations of atoll islands (Yamamoto & Esteban 2014). Human activity is influencing the erosion of Tuvaluan land, and in so doing, is undermining one of the key tenets of state sovereignty as understood within the modern era. The Tuvaluan example is one of many in which climate change has rendered contemporary norms of sovereignty absurd and incongruous.

Sovereignty is a social creation which today has taken on a rigid territorial form by which international relations are conventionally understood, through which international relations are conducted, and on which international law is predicated. This essay will use Tuvalu as a case study in order to examine the ways in which climate change has and will increase pressure for a rethink

of territorial state sovereignty in the 21st century. This essay will begin by introducing the concepts of sovereignty and territory, in order to show how they are currently defined and codified in law, but more importantly to illustrate how they are evolving concepts that have been linked to each other in the contemporary era in the form of territorial sovereignty, which is not an immutable concept, but rather one that has increasingly been challenged by new global developments. With this understanding in mind, this essay will illustrate four challenges that climate change poses to territorial sovereignty. First, it will be argued that, due to the transboundary nature of climate change's impacts on the atmosphere and on sea-level, the problems of the 'territorial trap' of international relations will be further brought to light; the conventional definitions given for sovereignty will come into question; and one of the most important components of sovereign territory, namely, land, will be compromised. Second, it will be shown that international climate mitigation policy itself has been unsuccessful partly due to its framing along territorial lines, and it will be argued that a continued lack of mitigation progress will place pressure on the assumption of territorial sovereignty which informed these strategies. Third, it will be shown that self-determination and sovereign equality, both influential and important norms that flow from territorial sovereignty, are either violated or rendered dysfunctional as result of climate change. For each of these first three challenges, Tuvalu will be used as a case study to reveal the implications of these challenges. Finally, the case will be made that, if contemporary territorial sovereignty persists in its rigid state, global 'sacrifice zones' may begin to manifest themselves; an unjust outcome that should be avoided, but one that will itself place further pressure on the continued existence of the modern form of territorial sovereignty if it comes to pass.



Figure 1: Part of the land constituting Funafuti, the most populous Tuvaluan island (from Taylor 2018).

Sovereignty and Territory

Sovereignty is most commonly defined as *supreme authority within a territory* (Philpott 2016, p.1). There does not exist a specific conventional definition of statehood under international law (Blanchard 2015), however the 1933 *Montevideo Convention on the Rights and Duties of States* set out the customary legal identification of a sovereign state, namely, that it should possess the following four criteria: a permanent population, a defined territory, a government, and the capacity to enter into relations with other states. The UN Charter prohibits interference in “political independence and territorial integrity” (Article 2(4)) and restricts the intervention of other states in the domestic jurisdiction of another (Article 2(7)) (Philpott 2016, n.p.) Sovereignty, defined in such politico-legal senses, is a concept that is often invoked, and

informs the practice of international law, in spite of the concept's ambiguity (Arcanjo 2019) and its sometimes circular (Storr 2016) and contradictory definitional nature (de Benoist 1999).

A basic contemporary understanding of a territorial state leads to its definition as 'a geographically-contained structure whose agents claim ultimate political authority within their domain' (Biersteker & Weber, 1996). Physical territory plays an essential role for the construction of the sovereign territorial state under contemporary norms. As mentioned, the influential *Montevideo Convention* requires the existence of a defined territory. Other examples of the codification of physical territory includes the Declaration on General Security – a 1943 conference between the United States, the United Kingdom, China and Russia which contributed to the formation of the United Nations – which implies the need for territory, 'large and small', for the development of sovereign equality (Ansong 2016, p.14). In discussions around norms of sovereignty during the San Francisco Conference of 1945, it was emphasized that the territorial integrity of states must be respected in order to uphold sovereign equality. These discussions were fundamental in informing the text of the UN Charter itself (Ansong 2016).

Codes of sovereignty have been constantly evolving since the inception of the concept, and they will continue to evolve into the future, contingent on the evolution across time of the various needs which these codes are reflections of (Jennings 2002). Definitional and rules-based understandings of sovereignty and territory are useful for analysis of contemporary politico-legal norms regarding them, however they are inadequate in developing a comprehensive understanding of the concepts. The *Montevideo Convention* itself is illustrative of this; it has often been criticized as a product of its time, and increasingly obsolescent as a means of understanding state sovereignty (Blanchard 2015). In their discussion of the social construction of state

sovereignty, Biersteker & Weber refer to Nietzsche, that; 'only that which has no history can be defined' (1996, p. 3). Sovereignty should not be assumed as an unquestioned constancy, but rather as a product of socio-spatial processes continuously developing across time.

Although not all agree, historians often identify the 1648 Peace of Westphalia as the origin of today's demarcated system of sovereign states. Components of this system had preceded Westphalia, but the ending of the Thirty Years War in 1648 represented a major turning point for two reasons. First, the authority of sovereign states was no longer contested in any meaningful way by the Holy Roman Empire. Second, the authority of monarchs over religious institutions was established, and as such, intervention within territorial states by non-territorial states, notably the Catholic Church, became rare (Philpott 2016). This turning point represented a transition from the religious hierarchical arrangements of ill-defined territorial states in Europe where supreme authority was lacking (Philpott 1995). Feudal obligations 'gradually dissolved', political identity became associated with residence within particular territorial spaces, and over time 'sovereignty shifted from the person of the monarch... to the territory of the state and state institutions' (Agnew 1995, p. 85). Over the following centuries, the basic form of the sovereign, territorially defined, state would be implemented across the European continent and beyond. Influential thinkers such as Machiavelli, Luther, Bodin, Hobbes, and Rousseau would either implicitly or explicitly endorse territorial sovereignty under a supreme ruler (be it a Prince, a Leviathan, or 'the People'), rejecting extraterritorial or independent intraterritorial forms of political organization within particular delineated scopes of land; the idea of sovereignty as supreme authority within a territory became legitimized and normalized (Philpott 2016).

This territorial conceptualization of sovereignty has been inherited by theorists of today, and has been put into service by contemporary hegemonic institutional structures, including states, legal systems and international organizations like the United Nations. Other important norms also developed as a result of the evolution of territorial sovereignty, such as sovereign equality and self-determination. Ansong argues that a 'consequential connection' exists between state equality and state sovereignty (2016, p.25). Further, he argues that a consequence of the equal rights and duties of states is self-determination (2016, p.26). The norm of territorial sovereignty, and the norms of state equality and self-determination which are logical consequences of territorial sovereignty, are powerful, global ideas that have been codified. Philpott writes that following the decline of the colonial empires in the mid-20th century, the territorial state became 'the only form of polity ever to cover the entire land surface of the globe' (2016, n.p.).

Many scholars offer more critical perspectives on the concept of sovereignty. For example, Biersteker & Weber make the case that sovereignty is a social construction which is defined by the practices of states, yet different from statehood. They warn that sovereignty should not be taken for granted as an 'immutable' concept (1996, p.11). John Agnew argues that territorial sovereignty often is taken for granted. In 1994, he famously diagnosed international relations theory as caught in 'the territorial trap'. He wrote that this trap was the result of (i) viewing states as fixed and unchanging spaces of territorial sovereignty; (ii) creating an arbitrary analytical barrier between foreign and domestic political spaces and; (iii) unthinkingly allowing the territorial state to serve as a 'container' for society, which existed before it (Agnew 1995, p. 100). Agnew writes that there is strong normative appeal to rely on the state as a political

reference point, and that the territorial state does remain an important political actor, however it is inadequate as an independent means of understanding emerging trends in international relations and in the global political economy (1995, p. 99).

Biersteker and Weber write that not only is territorial sovereignty socially constructed, but that the constituent elements of territorial sovereignty (they believe that these are 'territory', 'population', 'authority', and 'recognition') are also socially constructed elements (1996, p.3). Elden goes into great detail on this point regarding the element of territory (2010). He characterizes territory as a concept which renders space as a political category (p. 810), and as such, it can be understood as a political technology for measuring land and controlling terrain (p. 811). Similarly to Agnew, Elden warns against viewing territorial space as simply a power container, arguing that it is a concept in and of itself worthy of critical examination (2010).

The arguments of these scholars are all critical of the ways that sovereignty and territory are typically thought about, and of the norms that have developed around them in the present day. Today, there exists clear examples of phenomena that challenge and defy the territorial trap of international relations theory, the state as a power container, and assumptions of territory. For example, already in 1995, Philpott referenced the European Union, the United Nations, proxy military interventions and humanitarian aid without domestic consent from territorial states. Based on these examples alone, he reasons that the first major reshaping of sovereignty since medieval times may soon take place (p. 354-55). There are many more transboundary challenges than these that are not adequately captured or analyzed through the classic contemporary lens of the territorial state. Agnew describes global spatial divisions of labor that are not bound by territorial borders. Additionally, he argues that capital investments of large economic actors

transcend the bounds of territorial states, and often bend their respective governments to their will. Transnational capitalism has in many ways decreased the power of governments over affairs within their own territorial states (Agnew 1995, p. 98-99). Other examples of transboundary challenges to territorial sovereignty include international flows of refugees, the ease of all manner of communication via the internet, international trade, and the potential for the rapid global spread of disease. Yet, in spite of the growing porosity of territorial state borders and new transboundary challenges to territorial sovereignty, the norms of territorial sovereignty have so far remained quite rigid. Agnew (1995) writes that, for good reason, the territorial state retains its normative appeal, and still plays a valuable juridical role, but in the face of emerging global developments, the idea of the 'fixed' and 'absolute sovereign state of conventional modern political theory' (p. 99) is inadequate in understanding global realities of international relations and political economy.

Climate change as a transboundary challenge

Climate change is a particularly challenging process to contemporary norms of territorial sovereignty. Drawing on Tuvalu and other SIDS as a case study, this essay will now illustrate the ways in which the contemporary understanding of territorial state sovereignty is challenged by climate change. By examining the atmospheric commons and sea-level rise, it will be shown that (1) climate change is a diffuse problem which challenges the territorial trap, and (2) climate change challenges the definition of territorial sovereignty as 'supreme authority within a territory'. Additionally, by examining sea-level rise it will be shown that (3) climate change is a threat to territory itself, which is one of the key criterion today for establishing territorial sovereignty.

The atmospheric commons

Hydrocarbons have and continue to be extracted and combusted into the atmosphere at a massive rate, fueling great economic growth, but also resulting in an unprecedented accumulation of greenhouse gases; a phenomenon that scientists have for decades argued will have massive planetary consequences. Following the industrial revolution, atmospheric concentrations of carbon dioxide rose above 300 parts per million for the first time in human history, and have now risen well over 400 parts per million (Ritchie and Rosie 2020). Since carbon dioxide can stay in the atmosphere for well over a century, and since warming takes place over very long timescales, the impacts of these past emissions on global temperatures (without even accounting for future emissions) have not yet manifested themselves, but so far, they have resulted in an associated rise in global average temperatures of approximately 1.1°C since 1850 (Ritchie & Roser 2020). 90%-100% of actively publishing climate scientists agree that humans are causing the global warming that has been experienced over the course of the past century (Cook et al., 2016).

In the modern assemblage of territorial states, global processes are often understood, written about, and codified as bound and regulated by territorial borders. This is what Agnew was referring to when describing the territorial trap. 'Domestic' and 'foreign' political spaces are categorized separately and studied on their own, and the territorial state is regarded as a societal container (1995). One of the primary challenges to this 'territorial trap' is any transboundary process that is not limited, even in part, by territory and by borders, but rather that is in constant, unchallenged transgression of the delineations of what Elden argues are mistakenly understood as 'bordered power containers' (2010, p. 1). Atmospheric emissions, including greenhouse gases

like carbon dioxide, are excellent examples of this. Regardless of their geographic point of origin, once they are released into the atmosphere, through anthropogenic combustion or otherwise, they exert a global influence in concert with other emissions from countless other points of origin. As Lövbrand and Stripple write “emissions emitted anywhere on the globe will have consequences everywhere on the globe” (2006, p. 217).

Habib questions whether or not it is appropriate to rely on sovereign territorial states as a frame of reference for understanding the problem of greenhouse gas emissions. He writes “Greenhouse gases emitted in Melbourne will diffuse through the atmosphere to affect global climatic perturbations not only in the Melbourne area but over the entire planet” (2015, p. 1). Air pollution in the United States is illustrative of the way in which emissions are a diffuse transboundary problem. A recent study in *Nature* found that 41 to 53 per cent of premature mortality due to poor air quality in the United States was a result of emissions from another state (Dedoussi, Eastham, Monier, and Barrett, 2020). The compositional evolution of the atmosphere over the past century is a conceptually similar problem on a truly global scale. The rapidly increasing parts per million of carbon dioxide in the atmosphere above Mauna Loa, as measured by the Scripps Institute of Oceanography and by NOAA over the past half century, are not indicative of the condition of the atmosphere above Mauna Loa alone, rather, it is representative of the varying increases of atmospheric carbon dioxide across the globe, which result in increases in average global temperatures unconfined by territorial borders.

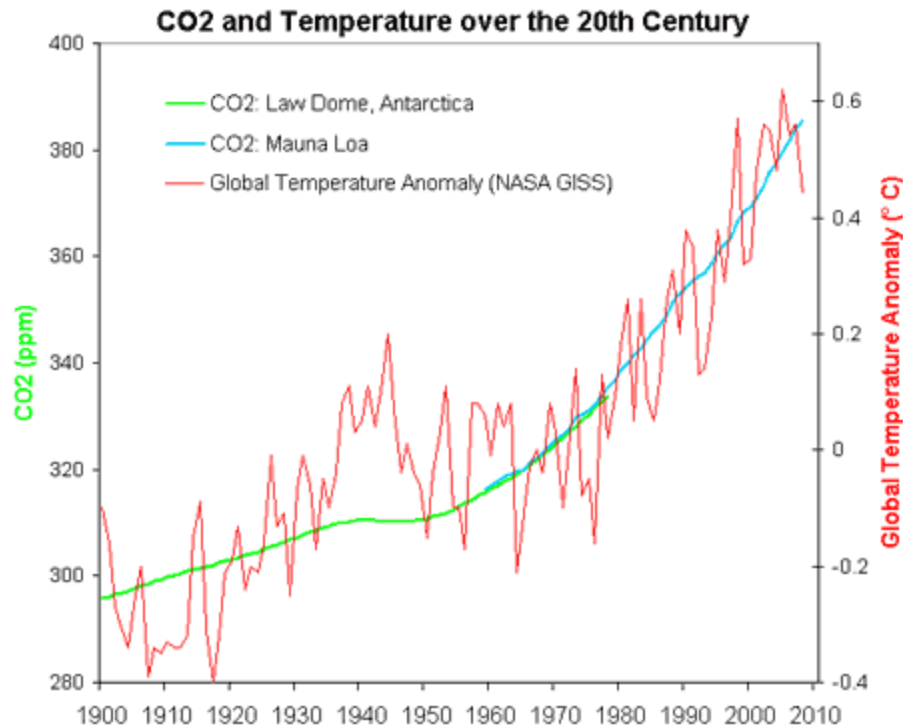


Figure 2: Comparing global temperature anomalies with carbon dioxide levels over the past century (from Nuccitelli 2013). Note that all five of the hottest years on record all occurred after 2014, and are not depicted here.

In addition to bringing to light the problems of the territorial trap, the diffuse nature of atmospheric emissions also challenges the idea of sovereignty as ‘supreme authority within a territory’ as described by Philpott and others. Philpott writes that ‘absolute’ supreme authority, that is, authority over all matters within the territory of a state, is the form of sovereignty with which the layperson is most familiar (1995, p. 358). Although it is nearly impossible to establish direct causality between particular greenhouse gas emissions and particular climate impacts due to what Arcanjo describes as the ‘indivisible nature of the atmosphere and global emissions’ (2019, p. 4), it is still clear that a multiplicity of actors from outside of any given territorial state have a large influence over the atmosphere above that state, in spite of the supposed supreme authority of that territorial state over the affairs within it. ‘Air space’ found in the atmosphere

above the land of a territorial state, is legally understood as falling under that territorial state's sovereign jurisdiction (Lövbrand & Stripple 2006 p. 220): However, it is really under a global influence. The importance of this influence, even if it is indirect, cannot be understated; the evolving composition of the atmosphere leads to changes in temperature, which leads to new weather patterns, which can (and has) resulted in harmful natural disasters and ramifications for agriculture. Those in poverty across the world are particularly vulnerable to these changes. Subsistence farmers who may have an existential dependence on a good harvest, for example, are among the most vulnerable groups to climate variability (Thorlakson & Neufeldt 2012). These human induced changes, and the vulnerabilities that result from them, compel the governments of various territorial states to responsively invest in climate adaptation measures, even if a miniscule portion of the greenhouse gas emissions causing them such large problems actually originated from points within their territorial state. This illustrates how one of today's purported definitive characteristics of sovereignty - supreme authority within a territory – is undermined by the emissions of a global combination of actors outside of a territorial state, and a sector as fundamental as agriculture is one of many examples of sectors experiencing negative resulting impacts within that territorial state.

Sea-level rise and territory loss

Another one of the impacts of climate change that is similarly unbound by the borders of territorial states is sea-level rise. Global mean sea level has steadily risen approximately 8-9 inches since 1880, and between 2006 and 2015 the pace of this rise doubled the average pace of the 20th century. Sea level rise is caused by the melting of glaciers and ice sheets as well as the thermal expansion of bodies of water due to rising temperatures. There exists regional variation

in sea level rise due to factors like winds and ocean currents influencing ocean heat. Nevertheless, sea level rise is a truly global problem. Scientists predict at least 0.3 meters of sea-level rise relative to 2000 levels by 2100 under a low emissions scenario, and under an extreme high emissions scenario there exists a chance of 2.5 meters of sea level rise by 2100 (Lindsey 2019).

Sea-level rise is similar to climate-induced changes in weather patterns in that it is a diffuse problem that challenges the notion of supreme authority within a territory. Globally, it is estimated that already in the year 2000, 625.2 million people lived within low elevation coastal zones, including most of the world's megacities (Neumann, Vafeidis, Zimmermann & Nicholls 2015). In the case of one meter of sea-level rise, for example, it is estimated that 56 million people in developing countries alone would be displaced (Dasgupta & Meisner 2009). Processes entirely beyond the control of the territorial states in which these people and cities are found will have severe consequences on economies and livelihoods. This is already taking place, for example, in Dhaka, one of the most populous and densest cities in the world. Migrants are entering the city, partially due to pressures brought on by rural flooding and storm surges closer to the coast as well as from rivers experiencing unusual levels of flooding due to Himalayan permafrost melt (Rabbani, Rahman & Islam 2011). As a result, the government of Dhaka is forced to alter its budget in order to adapt to the impacts being brought on by climate change, while the Bangladeshi territorial state invests in the protection of coastal assets (Araos, Ford, Berrang-Ford, Biesbroek, and Moser 2017). All this is while the carbon dioxide emissions per capita of actors within the territory of Bangladesh are among the lowest in the world (The World Bank 2019). The Bangladeshi example is not unique. In Miami, for example, the city must invest heavily in pumps

and raise its roads because it was built under the assumption that seas would not rise as they have (Loria 2018). Sea-level rise can lead to “(f)looding, inundation, erosion, saltwater intrusion, impeded drainage and changes in wetlands” which leads to “loss of and damage to coastal land, infrastructure and ecosystems” (McAdam, Burson, Kälin & Weerasinghe 2016, p. 5). If sovereignty is to be understood as absolute supreme authority within a territory, then the sovereignty of any territorial state with a coastline is being undermined by sea-level rise brought on by human-induced climate change.

Perhaps an even greater challenge that sea level rise poses to modern sovereignty is that it actively erodes and covers land itself. As has been argued earlier in this essay, territory, and the land that constitutes it, is one of the key components in the construction of a sovereign territorial state. One of the norms set by the Montevideo Convention for the existence of sovereignty is the presence of a defined territory, and as such, some scholars of international relations have been forced to grapple with the consequences of territory involuntarily redefined and wiped out by sea-level rise. Territory does extend beyond coastlines into maritime zones, however, the extent of those maritime zones (which often contain crucial natural resources) is legally determined by coastlines, and with the submersion of land, maritime zones can shrink and even disappear (Doig 2016). Eleanor Doig writes that loss of territory due to climate change has large implications for international law, and questions whether it can even cope effectively with such dynamics (2016, p. 74). Catherine Blanchard is led to question the viability of the ‘classical notion of statehood’ as it has been codified in international law due to the pressures on territory brought on by sea-level rise. She writes that, due to the physical disappearance of the territory of states, the territorial state may no longer be the appropriate basis for the international legal

system (2015, p. 71). Stratford, Farbotko & Lazrus ask, in the face of the loss of the territory 'which comprises the land-based totality' of the territorial state, and especially when that territory disappears entirely; 'whither sovereignty?' (2013, p. 69).

Climate-induced sea-level rise leads to critical questions about norms of territorial sovereignty and the meaning of territory itself, and this is evidenced by the burgeoning chorus of international legal scholars questioning fundamental modern norms of sovereignty. The territorial trap described by Agnew - the reification of territorial states based on assumptions that they are and will remain 'fixed units of secure sovereign space' – and especially the arbitrary divide often made between the domestic and the foreign (1995, p. 100) is forced into question due to the pressures of climate change, as has been shown in the preceding paragraphs. When territory itself is under existential threat, in this case by sea-level rise, it can no longer be taken for granted, as is often the case under modern conceptions of territorial sovereignty.

Case Study Part One: Tuvalu and other SIDS

In order to examine the practical unfolding and implications of these challenges to territorial sovereignty, and other challenges that will be described further on, this paper will now begin the first of a three-part case study. The case study in this paper will primarily focus on the Tuvaluan territorial state, however it may also reference territorial states facing similar challenges. Small Island Developing States (SIDS) are particularly vulnerable to climate change, and studying the impacts of climate change on them sheds light on the challenges climate change poses to contemporary norms of territorial sovereignty and reveals the inability of the current system of international relations and law to address the predicament of territorial states, given

prevailing norms of territorial sovereignty. The transboundary challenges that have been described so far in this paper, like new weather patterns and sea-level rise, are especially poignant in SIDS like Tuvalu.

Tuvalu is a coral atoll territorial state comprised of nine islands, with a population of just over 10,000 people (Doig 2016). The land area of Tuvalu is about 26 km², but its exclusive economic zone (EEZ) extends for approximately 900,000 km² (UNDP 2010). Tuvalu (meaning “Cluster of Eight” in Tuvaluan) was first settled by Samoans, and then other Polynesian islanders, probably in the 14th century AD. Many Tuvaluans were enslaved in the 1800s by labor recruiters from surrounding states, and in 1916 Tuvalu became a British colony. Tuvalu regained independence in 1978 (Encyclopaedia Britannica n.d.). Today, Tuvalu is primarily a fishing and tourism based economy (Yamamoto & Esteban 2014).

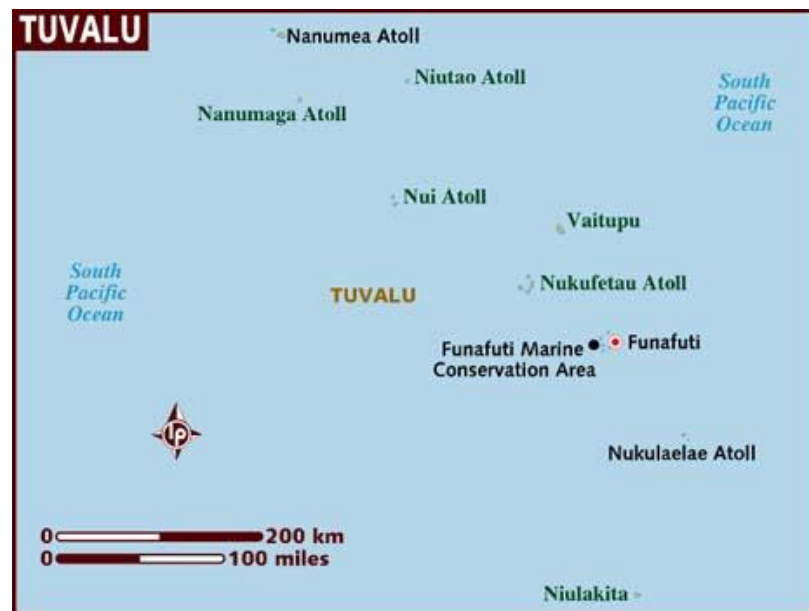


Figure 3: A map depicting the nine Tuvaluan islands (from Lonely Planet n.d.).

The lack of 'supreme' Tuvaluan authority over affairs taking place within its territory is very much apparent. Climate change could pose grave consequences for the inhabitants of Tuvalu – Allen writes that because it is 'fragile, remote, resource-poor, and low-lying' it is especially vulnerable to the impacts of climate change (2004 n.p.). On Funafuti, the main island, the population has more than doubled since 1980, and Tuvaluans do not lack their own problems in local environmental stewardship (Allen 2004). However, many of their largest environmental problems are the result of anthropogenic climate change, a process far beyond the local control of a territorial state with a miniscule emissions profile. Fundamental aspects of the Tuvaluan economy are impacted; for example, agriculture is constrained by highly saline soil, which can be worsened by sea level rise, leading to an expensive reliance on food imports (UNDP 2010). National surveys show that 70% of the inhabitants of Tuvalu and the neighboring territorial state Kiribati would migrate if climate stressors continue (Sims 2015). Scientific research suggests that tropical cyclones are likely to increase in intensity due to warming temperatures, and Tuvalu is especially vulnerable to these events (Yamamoto & Esteban 2014 p. 57-59). Since the 1980s, cyclones near Tuvalu, which are accompanied by storm surges, have become worse (Sims 2015). Tuvalu is also sensitive to freshwater shortages that can result from variable rainfall and droughts (Yamamoto & Estaban 2014, p. 15). At the Paris Climate Summit, the Tuvaluan Prime Minister Enele Sosene Sopoaga declared "Pacific islanders are facing the brunt of climate change impacts and are increasingly finding themselves with few options" (Sims 2015).



Figure 4: A woman on a motorbike near Tuvalu's airport runway (from Taylor 2018).

Tuvalu is not unique among SIDS; the sheer scale of impacts experienced by SIDS due to anthropogenic climate change is striking, and reveals the extent to which local political decision-making is at the mercy of human decisions far beyond the control of SIDS. For example, the Micronesian territorial state spent 7% of its entire 2009 budget in order to ferry bags of rice and freshwater to its islands because abnormally high tides destroyed its agricultural soil, making it impossible to grow its staple food, taro (Morris 2010). In Kiribati, residents have built seawalls of coral stone around their homes to defend themselves from coastal erosion (Yamamoto & Esteban 2014, p. 88). Coral bleaching, which results from warming seas, is taking place near Pacific Island states, and this can deplete fish stocks (Yamamoto & Esteban 2014, p. 135), which many Pacific island states, including Tuvalu, rely heavily on for local income (Yamamoto & Esteban 2014, p. 30). It turns out that SIDS hold very little authority over important aspects within their territory,

which leads to the question; do low-lying SIDS like Tuvalu really possess de facto sovereignty at all under the classic modern definition? The necessity of such a question may indicate that the conventional modern definition of sovereignty is itself problematic.

In addition to all these problems, many of which are also replicated outside of SIDS, it is important to emphasize that anthropogenic climate change poses a qualitatively greater obstacle to Tuvaluan sovereignty than it does to almost any other state, by constituting no less than an existential threat. The territorial trap assumes that states are 'fixed territorial entities' (Agnew 1995, p. 78), and Tuvalu illustrates how this could not be further from the truth. In examining the implications of sea-level rise on territorial integrity, McAdam et al. categorize three cases: Case one, in which states will experience a 'limited loss in habitable territory', like Australia; case two, in which 'substantial habitable territory will be lost', like Bangladesh; and case three, in which states are threatened with losing their habitable territory entirely – this case is entirely composed of SIDS like Tuvalu (2016, p. 7-8). It has been predicted that Tuvalu will become the first island rendered uninhabitable by climate change, as a result of sea-level rise (Willcox 2012). Measurements around Funafuti show that the total rate of sea-level rise between 1950 and 2009 was three times larger than the global mean (Becker et al. 2012). It should be noted, however, that coral atolls are not static structures, because they are built on living, growing coral. As such, Tuvalu has not lost total land mass in spite of sea-level rise since the 1970s, and has even made slight gains in land mass on some islands. The territory of Tuvalu is dynamic, and it adjusts with sea-level rise (Kench, Ford & Owen 2015). Although significant evolution of Tuvaluan land due to sea-level rise is certain, its inundation is not certain, but it is possible. High emissions scenarios (RCP 8.5) could cause a large acceleration of sea-level rise, resulting in uncertainty regarding the

likelihood of sea-water inundation (Kench et al. 2015). The area of greatest concern for coral atoll SIDS is that warming seas and ocean acidification (both a result of anthropogenic climate change) will result in coral death, and growth of coral is crucial in order for Tuvaluan land growth to outpace rapid sea-level rise (Yamamoto & Esteban 2014, p. 42). Sea-level rise in Tuvalu shows that territorial states are by no means 'fixed', and the assumption that the land on which its territory is predicated will exist in perpetuity is a faulty one.

These faulty assumptions have been built into international law, and have informed conventions of sovereignty – as has been argued earlier in this paper, institutions like the United Nations have been built around these assumptions. The codified territorial trap has broad and harmful implications in the context of climate-induced territory loss in SIDS. For example, Yamamoto & Esteban write that even though the possibility of 'disappearing states' has been understood since the 1980s, potential victims who would need to relocate to new lands could not be considered 'refugees' under the 1951 Refugee Convention (2010). International refugee law assumes the territorial state to be a fixed entity; this is not unique to international refugee law, but rather is reflected in other legal norms, including conventions on sovereignty like the Montevideo Convention. The undermining of the territorial integrity of SIDS seems to be receiving some increased scholarly attention in recent years (Blanchard 2015) (Yamamoto & Esteban 2014) (McAdam et al. 2016) (Doig 2016). Many of these authors have proposed potential solutions, including new legal mechanisms and compensation schemes. However, as it will be argued later on in this paper, these solutions tend to fall short in the realm of justice. Regardless of how sovereignty may be reconceptualised or re-codified in future years, the situation faced by Tuvalu

and other SIDS makes it clear that the transboundary processes that result from anthropogenic climate change pose significant challenges to today's norms of territorial sovereignty.

Territorial Climate Mitigation

The global processes of climate change clearly pose challenges to contemporary territorial sovereignty by undermining many of the assumptions on which it rests. It will now be shown that the hegemonic global solutions, which have been proposed by governments of territorial states and by institutions like the United Nations, have been problematic and may also pose a challenge to territorial sovereignty depending on collective perceptions of their success. In describing the territorial trap, Agnew writes that intersocietal 'practices', including diplomacy, are based around territorial sovereignty, as a 'commonsensical' unquestioned approach (1995 p. 95). The current international approach to greenhouse gas mitigation certainly exists under such a framework. The Paris Agreement of 2015, which is a heavily scrutinized multilateral climate agreement between territorial states, is considered by many as the modern-day metric on progress in global climate mitigation. At the time of this writing, it has been ratified by 189 of the 197 parties to the convention (UNFCCC 2020). These parties are all territorial states, which are required to report their progress towards their 'Nationally Determined Contributions' (NDCs) which are "at the heart of the Paris Agreement" (UNFCCC 2020). NDCs are the national mitigation and adaptation targets of the Paris Agreement, which inform the domestic efforts which territorial states are to undertake in order to contribute to the main overarching goal of the Paris Agreement; which is to mitigate emissions in a manner consistent with keeping global temperatures from rising further than 2 degrees Celsius above pre-industrial levels during this century, and to also pursue efforts to further limit warming below 1.5 degrees Celsius during this

century (UNFCCC 2020). Only a tiny number of territorial states are currently on track to meet the targets that they have set, and the mitigation progress of high-emitting territorial states in particular has been critically insufficient in contributing to the Paris Agreement target (Climate Action Tracker 2020).

Lövbrand and Stripple argue that since the Rio conference of 1992, climate change has been acknowledged by heads of states as a global problem transcending borders, as has been shown in the first two challenges of this essay. However, they argue that in spite of this acknowledgement, the response in international relations has been to ‘reproduce the spatial assumptions of the discipline’ by focusing on mechanisms like regimes and institutions that enable a response to climate change through the sovereign state system (2006, p. 224). As the impacts of climate change manifest themselves, thereby increasing the urgency for an effective response, problems with the current territorial approach may themselves challenge territorial sovereignty. This is because - if the current approach to mitigation remains unsuccessful – many actors within mitigation regimes will begin to question if existing strategies are really so ‘commonsensical’, which may also place the assumption of territorial sovereignty, on which current mitigation strategies are built upon, under building scrutiny. This essay will now highlight three of the problems that exist under the territorial mitigation approach.

Relative gains and a race to the bottom

In their work on the international climate policy role of regime complexes, that is, ‘a loosely coupled set of specific regimes’ (p. 7) – which are made up of territorial states – Keohane and Victor note that there can be a resulting gridlock, rather than innovation, resulting in a ‘race

to the bottom' (2011, p. 15). Habib (2015) expands on this same argument, making the case that actors within the assemblage of territorial states have two interests. On the one hand, they have the interest of limiting greenhouse gas emissions in order to avoid further impacts from climate change, and on the other hand, they have the interest of increasing greenhouse gas emissions for the sake of a higher GDP. Acting on either of these interests tends to be a decision based around 'relative gains', in which territorial states may defect from regimes like the Paris Agreement if they gain less from mutual cooperation than their cooperation partners – especially when coupled with the temptation of short-term economic growth. This, Habib (2015) writes, is especially likely if these cooperation partners are adversarial to begin with.

Recent evidence of such a phenomenon attests to the reality of such disincentives for climate mitigation under a cooperating regime of territorial states. The United States, which has contributed by far the most greenhouse gas emissions of any territorial state across history, is in the process of pulling out of the Paris Agreement, arguing, *inter alia*, that it threatens to erode its sovereignty (even though the agreement is voluntary) (Johnson 2019), and that it would offer an unfair advantage to other countries (McBride 2017). These 'relative gains' decisions from territorial states with highly developed economies can have a cascading effect. Developing states like the Group of 77 already argue that since the 'overwhelming majority' of historic emissions come from industrialized economies – which have gained tremendous economic benefits from the products of them - and since this has resulted in disproportionately heavy present and future climate impacts on less developed states, a just course of action would be for developed economies like the United States to bear the brunt of responsibility for emissions reductions now (Habib 2015, n.p.). If wealthy territorial states are perceived as doing just the opposite of this,

then developing states like those in the Group of 77, with their relative lack of capacity to affect change, may also lose incentive to pursue domestic climate mitigation as they attempt to industrialize, resulting in a cynical race to the bottom.

Carbon leakage

Like gas itself, the sources of greenhouse gases are diffuse and difficult to attribute to particular territorial states under a globalized economic order (Habib 2015). Related to the problem of the race to the bottom, carbon leakage is another problem resulting from a territorial approach to climate mitigation. Carbon leakage is the result of differing impositions of emission reduction policies within the legal jurisdictions of two or more territorial states, resulting in the translocation of an emitting actor to the territorial state with less stringent policies. This leads to an increase in emissions in one territorial state as the emissions of the other territorial state are reduced. Carbon leakage reduces the efficacy of territorial climate mitigation efforts, and it can sometimes even result in increased total global emissions if the territorial state to which an emitting actor translocates tends to rely on more emissions-intensive industrial processes or supply chains (Helm, Hepburn & Ruta 2012). The problem of carbon leakage is a direct result of what Helm et al. describe as a 'multispeed carbon world', as a result of differing domestic climate policies (2012, p. 392).

Carbon leakage has significant ramifications for climate mitigation because it can serve to discourage stringent policies within a territorial state. In Canada, for example, the Output Based Pricing System (OBPS) was created as an exception to the general federal backstop carbon price across the rest of Canada for the sake of large industrial actors, due to concerns over

competitiveness and carbon leakage (Government of Canada 2019). These emitters, which contribute significantly to Canada's total emissions, were required to reach a 'performance standard' relative to standard industry performance, rather than paying the federal backstop carbon price (Government of Canada 2019). The mobility of these large emitters in a multispeed carbon world results in less effective climate mitigation from the pragmatic decisions of governments.

Unclear Culpability

Both the problems of relative gains and of carbon leakage can result in tension between territorial states. For example, when the Brazilian government facilitated the Amazon forest fires of 2019, other territorial states reacted with consternation and offered aid in fighting the fires, due in part to the vital importance of the Amazon to the global climate. The governments of G7 nations offered Brazil millions of dollars in aid, which the Bolsonaro government was initially loath to accept, accusing France in particular of interfering with its sovereignty (Global News 2019). While territorial states may successfully use carrots, like in Brazil, to influence the domestic climate policies of other territorial states, it is much more difficult to use sticks under the contemporary system of territorial sovereign states. Eckersley correctly writes that it would be inappropriate and dangerous to respond to the 'diffuse, transboundary, and unintended' ecological problem of climate change with military intervention (2007, p. 295).

A different stick in the arsenal of territorial states is through a legal path, by bringing another territorial state before the International Court of Justice (ICJ). Environmental disputes have been settled at the ICJ before, and a dispute over climate change could be justified in a

number of ways. These could include demonstrating that a state has failed to meet certain obligations under the Paris Agreement, or by demonstrating culpability in transboundary harm, for example, in the case of a natural disaster (Stephens 2019).

The problem with such a legal approach is two-fold. First, it is very difficult to establish culpability, due to the current limitations of attribution science in linking specific climate impacts to specific emissions. Attribution science is “the extent to which anthropogenic climate change has altered the probability or magnitude of the particular weather event or class of weather events that are the subject of study” (Marjanac & Patton 2018, p. 268). Although attribution science is a growing field with potential for adoption by courts in the future, it is currently not generally considered to be sufficient by courts for identifying specific perpetrators and victims (Marjanac & Patton 2018). Even if evidence of certain degrees of culpability for transboundary harm, quantified by state, was made available and legitimized, there would still exist the question of which territorial state could then be held accountable? The impacts of emissions take place everywhere, but they also come from everywhere, and the emitting actors within territorial states, as has been shown, are often highly mobile. Second, many territorial states do not accept the jurisdiction of the ICJ to begin with, including the United States (Stephens 2019).

Case Study Part Two: A magnified problem for Tuvalu

The implication of the logic of relative gains, as described by Habib (2015), means that the governments of certain territorial states, especially under the influence of powerful economic actors within them, lack the short term incentive of a territorial state like Tuvalu to reduce emissions immediately, in spite of their capacity to do so. The problems of the territorial climate

mitigation approach, informed by the territorial trap of international relations theory, have contributed to slow mitigation progress, and these problems may begin to pose a greater strain on modern territorial sovereignty as various territorial states begin to more seriously grapple with the threats posed by climate change. In the meantime, this slow progress has put Tuvalu in a very dangerous position. As has already been described in this essay, Tuvalu is in danger of losing its land during this century due to a sea that is both rising and warming. The Tuvaluan Prime Minister Enele Sosene Sopoaga made the strong statement at the 2015 Paris Conference that, “Tuvalu’s future at current warming, is already bleak, any further temperature increase will spell the total demise of Tuvalu” (Sims 2015, n.p.).

In spite of the imminent danger posed by climate change on Tuvalu, it finds itself counted, supposedly on an equal footing, as one of many territorial sovereign states with competing stakes represented at climate negotiations like the Paris Conference. The Tuvaluan government’s desire for rapid emissions reductions are made apparent at such negotiations. In order to amplify their voice, they joined with other similarly concerned territorial states to form the Alliance of Small Island States (AOSIS) during the early climate negotiations of the 1990s. AOSIS is a coalition of small island and low-lying developing territorial states, which have allied together in order to leverage international negotiations in their favour, especially at climate negotiations (AOSIS 2019). Even under this alliance of numerous different states, Betzold writes that AOSIS is ‘limited’ in size and lacking in ‘political clout’ as opposed to other states present at negotiating tables (2010, p. 131). AOSIS has punched above its weight (Betzold 2010), and it has been instrumental in increasing mitigation ambition as recently as the 2015 Paris Agreement (AOSIS 2019).

Nevertheless, the success of AOSIS in increasing the ambition of mitigation targets paints a gloomy picture for Tuvalu, and is an indictment of the lack of mitigation ambition existing around the world. AOSIS frames the goal of keeping warming well below 1.5 degrees Celsius as a matter of continued existence (Ourbak & Magnan 2018), and Tuvalu itself is one of the most vulnerable of those AOSIS territorial states to the impacts of further warming (Betzold 2010). In spite of this, the 1.5 degree Celsius goal of AOSIS is only included as an ‘aspiration’ in the Paris Agreement, tacked onto the goal of keeping warming below 2.0 degrees Celsius. Following the Paris negotiations, the AOSIS Presidency took the floor and stated: “This is an historic agreement, though we must remember that history will judge us not by what we did today, but by what we do from this day forward. That is how the Paris agreement will be measured: by future generations” (Ourbak & Magnan 2018, p. 2206). Five years later, progress towards the 2.0 degrees Celsius target has been critically insufficient, let alone the aspirational 1.5 degrees Celsius target which AOSIS wishes to keep far below of. The work of AOSIS in mitigating their own emissions is evidence of their own seriousness on the matter of climate change – they have adopted ambitious mitigation targets in their own NDCs in spite of their tiny contribution to total global emissions (Ourbak & Magnan 2018). Small island states are responsible for less than 0.06 per cent of global emissions, and in spite of their emissions reductions, they cannot take mitigation action on a meaningful scale, and as such, they find themselves depending almost entirely on emissions reductions in other territorial states while simultaneously being under the most immediate threat (Betzold 2010).

The territorial approach to climate mitigation, predicated on the territorial trap, has left the potential for the continued existence of the supposedly sovereign territorial state of Tuvalu

utterly dependent on the decisions of powerful actors outside of its borders. Under the current approach, mitigation progress is considered to rest in the hands of territorial states, yet, as has already been shown, these same territorial states are nigh impossible to effectively challenge over their harmful lack of action due to the legal hurdles a plaintiff would face. In spite of this, in 2002, Tuvalu did attempt a lawsuit against the United States at the ICJ due to its refusal to ratify the Kyoto protocol. This lawsuit was expected to fail due to the challenges associated with suing a specific territorial state for climate damages (Jacobs 2005), but it was cancelled by a newly elected Tuvaluan government that same year before much progress could be made (Allen 2004). The logic of the territorial trap has informed diplomatic practices in such a way that the Tuvaluan government has been left with little means to assert its will any further than it already has.



Figure 5: A woman weaving a tapola, or basket, which is used for cooking and storing food, with a fishing vessel in the distance, both of which play important roles in the Tuvaluan economy (from Taylor 2018).

Sovereign Equality & Self-determination

The lack of options for Tuvalu, and for many territorial-states like it around the world, raises questions regarding self-determination and equality between sovereign territorial states. The concept of sovereign equality, Ansong (2016) writes, developed alongside the modern development of sovereignty, in which states were likened to the human community, where all humans should be considered equal under the law, without regard to their attributes. Additionally, just as sovereignty was necessitated because it was believed that there should be no power above the state, so was equality between sovereign territory states necessitated (2016, p. 25). Sovereign equality is a fundamental norm of sovereignty that has also been codified: Article 4 of the Montevideo Convention essentially states that territorial states should enjoy equal rights and equal capacity to exercise those rights under international law, regardless of the power that they possess (Ansong 2016, p. 26). Ansong writes further that state self-determination is itself the 'incontrovertible logical consequence' of sovereign equality. These norms, Ansong argues, are the 'logical extension' of state sovereignty and they lead legal practitioners to argue that the territorial state must not infringe upon the rights of other sovereign territorial states when exercising their sovereign power (Ansong 2016, p. 27). Arcanjo agrees with Ansong, writing that sovereignty is the foundation for self-determination (2019, p. 2).

A final way that climate changes challenges norms of territorial sovereignty, is by posing an obstacle to these two necessary outcomes of territorial sovereignty; the equality and right to self-determination of territorial states. As has already been portrayed in this essay, climate

change shows that, in fact, large inequalities exist between territorial states, with some territorial states experiencing large negative impacts as a result of other territorial states exercising their own sovereign power to their detriment. Figure 5, from Scott Metcalfe's work on the health impacts of climate change, compares the emissions profile of territorial states (top), with the projected mortality rates that result from these emissions (bottom) (2015, p. 15). These maps paint a clear picture of injustice, in which emissions, largely from the Global North, have mortal consequences for those in the Global South, especially on the African continent and in South Asia.

One might respond to this by arguing, correctly, that the contemporary norm of sovereign equality does not call for equal outcomes to be experienced by every territorial state. Ansong writes that sovereign equality does not mean territorial states should possess equal 'military and

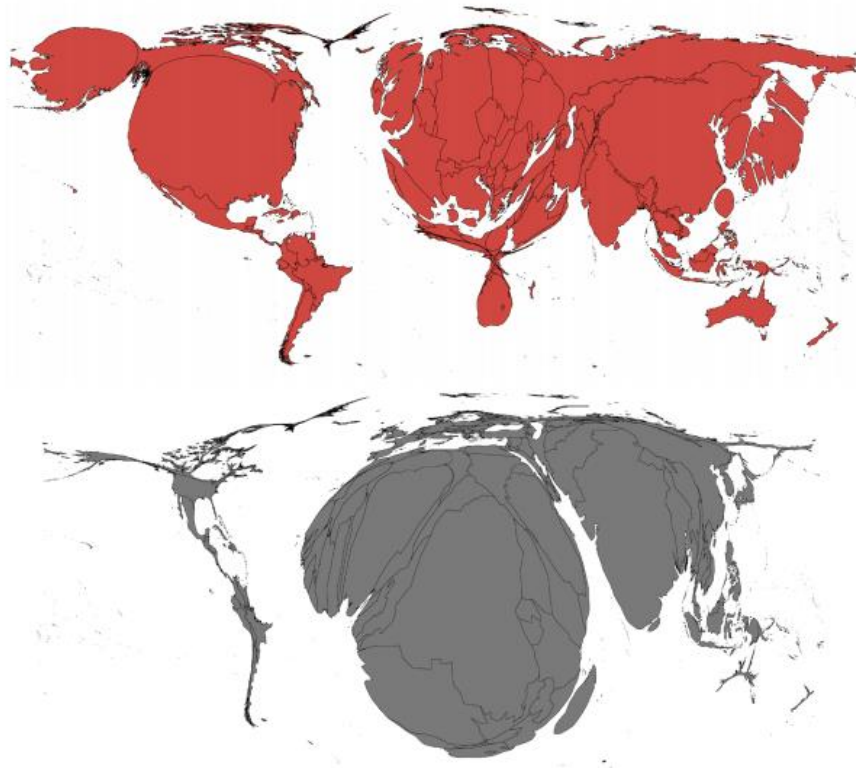


Figure 6: Reprinted from Metcalfe, S. (2015). "Fast, fair climate action crucial for health and equity", by Metcalfe, S., 2015, New Zealand Medical Journal, 128, p. 15.

economic prowess', but rather, that they should have equal rights and duties under international law (2016, p. 26). However, if territorial states really had equal standing under international law, the stark and unjust outcome depicted by Metcalfe would never have been allowed to happen. Key to understanding this is remembering that climate change is a diffuse and transboundary problem. In the world depicted by Metcalfe, national laws and policies of territorial states regarding greenhouse gas emissions have global impacts, as has been shown earlier in this essay. In this world, actors within one collection of sovereign territorial states undertake economic activities which contribute to the deaths of those in another collection of sovereign territorial states, in violation of the sovereignty of the latter states. These less powerful territorial states find themselves disadvantaged under an international legal regime which allows for such practices. Although territorial states are not finding themselves formally subjected to laws outside of their national jurisdiction, the dramatic degree by which they are impacted by these national laws is a challenge to the spirit of sovereign equality, which is that territorial states should not find their well-being, government budgets, and, most fundamentally, their continued existence subjected to other territorial states. Such actions constitute an interference in the internal affairs of a sovereign state. Again, in the face of climate change, contemporary norms of sovereignty do not seem to function in the ways they were expected to when they were reified in law, when, for example, Hans Kelsen – an influential legal philosopher on the matter of states rights in the mid-20th century – argued that “the State is ‘sovereign’ since it is subjected only to international law, not to the national law of any other state” (Ansong 2016, p. 21).

Another influential figure in the development of contemporary norms of sovereignty, Sir Robert Jennings, argued that rule must ‘supersede might’ through an internationally binding legal

system in order for just relations to occur between territorial states within 'the community of sovereigns' (Ansong 2016, p. 21). However, in the context of climate change, many of the 'mighty' territorial states (which also have the highest emissions profiles and relatively high capacity to adapt to climate change) act as roadblocks to mitigation progress. For example, the UN Security Council states - the US, China, Russia, the UK, and France - any of which can veto multilateral action, and all of which are failing to meet their Paris Agreement targets (Climate Action Tracker 2020), have been unwilling to address climate change at the United Nations (Eklow 2020). Less 'mighty' territorial states often find themselves as geopolitical tools for the 'mighty' territorial states within international fora. One of many examples of this is the somewhat ironic tendency of Pacific Island States to represent the smattering of votes along with the United States and Israel against Palestinian sovereignty. Nauru, Palau, Micronesia, and the Marshall Islands voted with the coalition of nine territorial states, including the United States and Israel, against the overwhelming majority of UN member-states, to oppose granting the Palestinian Authority non-member observer status in 2012. These votes were due to the political allegiance, foreign aid, and technical assistance in sectors like agriculture and health that both the United States and Israeli governments have offered these SIDS (Fisher 2012). Ansong writes that powerful territorial states, or a collection of powerful territorial states, may use their power to leverage international institutions in order to internationalize their preferred domestic policies (2016, p. 32). This would seem to have already taken place under international climate negotiations, given their lack of meaningful progress, which suits the governments of certain territorial states in the short term, to the detriment of many others, as Metcalfe shows. Under this scenario, where territorial states do not retain their supposed equal rights and duties, there does not exist sovereign equality.

If climate change reveals a lack of sovereign equality between territorial states, then it must also result in a lack of self-determination for various territorial states, since self-determination follows from sovereign equality. Supposedly, the establishment of the UN charter was to usher in an era in which sovereign territorial states did not need to exercise 'economic or military might' in order to defend themselves from other states (Ansong 2016, p. 20). Susannah Willcox writes that self-determination, which is a 'prerequisite for all other human rights', entails 'extraterritorial obligations' from the international community in order to ensure that it is upheld, respected, and promoted (2012, p. 6-7). As this essay has already shown, those obligations are not being fulfilled, and climate change poses a large threat to self-determination. The second edition of DARA's Climate Vulnerability Monitor argues that inaction on climate change can be considered a leading cause of death on the international scale. It estimates that in 2012, climate change was causing approximately 400,000 additional deaths per year due to diarrheal infections, temperature-related illnesses, hunger, malaria and vector-borne diseases, meningitis, and environmental disasters (DARA & the Climate Vulnerable Forum 2012). The fifth assessment report of the IPCC found that there is high to very high confidence that climate change will lead to a greater risk of death due to a changing natural environment (IPCC 2014). Willcox argues that the threat to the self-determination of states is prominent in cases, such as that of SIDS, where climate change can lead to loss of land, which can result in the loss of other things, such as mobility, property, livelihoods, access to healthcare, and culture (2012). Anthropogenic climate change violates self-determination and sovereign equality, and since sovereignty is the other 'side of the same coin' as these norms (Ansong 2016, p. 25), this is further evidence of the challenge that climate change poses to norms of sovereignty.



Figure 7: One of Tuvalu's many church services, which local families walk to on Sunday mornings (from Taylor 2018).

Case Study Part Three: Equality and Self-determination for Tuvalu

Few places exemplify this present-day inequality of sovereign territorial states under international law, or violations of state self-determination by other states, more than Tuvalu does. In 2014, Tuvalu emitted 11 kt of carbon dioxide emissions. That same year, China emitted 10 million kt, and the US emitted 5 million kt (The World Bank 2020). In 2014, Tuvalu emitted 1 ton of carbon dioxide per capita (The World Bank 2020). In 2016, the territorial states of Saudi Arabia, Australia, the United States, and Canada each emitted 16.3, 16.2, 15.0, and 14.9 tons per capita, respectively (Union of Concerned Scientists 2019). A similar story can be portrayed with many other SIDS. The potential for the continued existence of territorial sovereignty for these territorial states is no longer within the control of actors within them, regardless of the national laws that they implement. The inability of the Tuvaluan government to effect substantial change within international diplomatic fora even as an AOSIS member, as well as the difficulties

associated with implementing legal action (which was highlighted in part two of the case study), reveals that international law has not served the interests of Tuvalu. Equal standing under international law has little meaning with such evidence that the creation and operation of international laws allows for a less 'mighty' state like Tuvalu to be threatened in the way that it has. And, of course, as has been argued, Tuvalu is also subjected to the heavy consequences of a variety of domestic legal regimes across the globe when it comes to environmental policies.

The attempts of SIDS at bilateral and multilateral legal action is also evidence of a lack of sovereign equality. Power imbalances have made legal action a risky process for SIDS like Tuvalu, and one that may bear little fruit in spite of its risks. Small island states are often reliant on more powerful territorial states for foreign aid, which can make them somewhat beholden to them (Morris 2010). For example, Tuvalu receives aid from both the United States and China, both of which are among the top three country donors to Pacific Island states (Dornan & Pryke 2017), as they wrestle over Tuvalu's recognition of Taiwan (Packham & Barrett 2019). Losing foreign aid could be disastrous for the fragile Tuvaluan economy (UNDP 2010). In 2011, Palau planned to propose that the UN General Assembly request an advisory opinion from the ICJ regarding the legal responsibility of the world's largest emitters for climate change, however this initiative did not move forward due to apparent threats from the United States (Blanchard 2015). More recently the Tuvaluan government has taken a cautious stance, warning against aggressive litigation; Enele Sopoaga, former Tuvaluan prime minister, stated in 2015 to the UK Parliament that "litigation... is certainly not the way Tuvalu ourselves would want to take", arguing instead for greater cooperation in order to achieve multilateral goals (Pashley 2015). The fruitlessness of lawsuits against territorial states with a penchant for ignoring international rulings, as well as the

economic and diplomatic threats posed by such aggressive action, have no doubt played a role in guiding the Tuvaluan government, and governments of SIDS like it, down this less aggressive path.

In the meantime, the self-determination of SIDS like Tuvalu are being threatened in ways that the world has never seen. Across history, the phenomenon of the physical disappearance of the entire land of a territorial state has never been recorded (Atapattu 2014). Even without total sea-water inundation, climate change can make the land of SIDS unliveable due to increased soil salinity or drought (Yamamoto & Esteban 2014) (Odalen 2014). Odalen is led to ask “Is it possible for a state to remain self-determining even if it lacks a stable population residing on a specific territory?” (2014, p. 225). Policy-makers are forced to think about means of repopulation of refugees of some SIDS, while populations on other SIDS have their mobility restricted in order to process refugees (Mountz 2014). Questions of self-determination in SIDS also lead to questions of ‘identity, citizenship, and governance’ as individuals relocate (Mountz 2014, p. 642). Regarding forced relocations brought on by sea-level rise and salination in the Carteret Islands of Papua New Guinea, George Monbiot has stated “The disaster has begun, but so far hardly anyone has noticed” (Willcox 2012, p. 2).

Students across SIDS in the Pacific, including Tuvaluans, have certainly taken notice, forming an organization called Pacific Island Students Fighting Climate Change (PISFCC). PISFCC formed in March 2019, when twenty-seven law students from the University of the South Pacific, hailing from eight different Pacific Island territorial states (including Tuvalu), came together with the mission of convincing governments of the world to bring the issue of climate change and human rights to the ICJ. The stance of PISFCC, unbound by diplomatic pressures experienced by

the governments of Pacific Island territorial states, is both aggressive and ambitious. On the homepage of their website, the PISFCC states that they “believe in fundamental human rights, in the dignity and worth of the human person, in the equal rights of... all nations, both large and small” (PacificClimateResistance.org n.d.). One of the fundamental rights that the PISFCC appeals to in this statement is self-determination, as one of the foundational principles of international law (Willcox 2012). They also make a clear appeal to the importance of sovereign equality. They wish to influence international law and its institutions so that it might “remain a global beacon of respect for a just and peaceful international order” (PacificClimateResistance.org n.d.). PISFCC are exemplary of the building global pressure for international reform in addressing climate change, and their arguments rely on but also challenge norms of self-determination and sovereign equality, which are fundamental to the contemporary understanding of territorial sovereignty. As this essay has illustrated, halting the increase of Tuvaluan precariousness in the face of climate change depends on the success of such extraterritorial reforms.

Case Study Part Four: Solutions and Sacrifice Zones

Many activist organizations like PISFCC will certainly continue to bring the challenges they grapple with to the attention of the world. The ways in which governments and other powerful actors around the world respond to the challenges described so far in this essay will play a large role in determining what sort of outcome is experienced by Tuvalu, and other vulnerable territorial states like it, in the coming decades. This essay will now describe some of the possible paths forward for Tuvalu under the contemporary normative framework of territorial sovereignty, and it will describe how these paths could make possible global ‘sacrifice zones’, an unacceptable outcome which may pose a final challenge to territorial sovereignty.

A number of solutions for the Tuvaluan predicament, operating within the bounds of contemporary norms of territorial sovereignty, have been proposed by various scholars. Yamamoto & Esteban (2014) have done significant work in outlining the range of potential paths forward for coral atoll territorial states, which will now be briefly referenced. These include legal arguments to recognize barren depopulated rock as eligible to an Exclusive Economic Zone (EEZ) under the United Nations Convention on the Law of the Sea (UNCLOS), so that depopulated territorial states could still conduct economic activities in the water around their island after being forced to abandon it. In case of the submersion of the barren rock as well, a lighthouse could be constructed out of the sea to act as a sort of sovereign marker. There could be a permanent fixing of ocean territorial boundaries as they currently exist, including the EEZ of SIDS, also through legal arguments under UNCLOS, or through diplomatic treaties. New international treaties could also be drafted, recognizing the ocean borders of SIDS in perpetuity. Rather than pursuing a legal path, complex coastal defenses could be erected around parts of SIDS to hold off rising seas; houses could be built on piles like in Venice and the Maldives; or an artificial island could be created, either by building up the land, or by creating a floating island, either using parts of the existing atoll, or as a reconstruction after the atoll has submerged (Yamamoto & Esteban 2014). The legal approaches described here would be difficult to achieve, even for AOSIS – Yamamoto and Esteban write that their success partially depends on the geopolitical implications of such a path for more powerful territorial states, adding that the South China Sea is one example of an area particularly sensitive to changes in UNCLOS (2014). The proposed engineering solutions, on the other hand, are not feasible for the governments of most SIDS due to the prohibitive costs associated with such projects. Tuvalu, for example, would need to construct 54

km of sea defences in order to protect a mere 2.5 km² of land, both an expensive and an impractical task (Odalen 2014, p. 228).

Other solutions have been proposed for displaced populations after they have abandoned their sovereign territory. Other territorial states are not under any legal obligation to assist those who have been displaced as a result of sea-level rise (McLeman 2013). Scholars have proposed various forms of a 'government-in-exile', in which former inhabitants retain sovereign control over their former territory, holding regular elections, and continuing to represent themselves at the international level, while operating as a 'cultural community' in a new territorial-state or while dispersed around the world (Odalen 2014, p. 227). However, Odalen continues to argue that the rules of sovereignty pose large barriers to such an outcome, since a deterritorialized population no longer legally possesses a 'domain of political control independent of other political units' (2014, p. 232), thereby creating a kind of 'overlapping' sovereignty. Blanchard writes that, today, there are "no new territories available" (2015, p. 86). Perhaps a SIDS could purchase land from another territorial state, but not only would this be expensive, it is unlikely that a territorial state would be willing to modify its territory, and certainly not any valuable or large portions of it (Blanchard 2015).

Irrespective of the likelihood of any of the outcomes described above, none of them are outcomes that Tuvaluans would choose, given the option. Even if the purchase of new territory, coupled with the phasing out of the old island, were an affordable and negotiable solution for SIDS, it would also have massive cultural impacts by modifying the relationship of people to their land (Blanchard 2015). As stated by the Paani Laupepa, former assistant secretary at the Tuvaluan Ministry of Natural Resources, "We don't want to leave this place. We don't want to leave, it's

our land, our God given land, it is our culture, we can't leave. People won't leave until the very last minute" (Ralston, Horstmann & Holl 2004, n.p.). From Tuvaluans, there is a resistance to their categorization as 'climate refugees', as it results in an implicit defeatist focus on migration rather than mitigation. Tuvaluans still wish for the rest of the world to focus on reducing their contributions to climate change, rather than dwelling on relocation options (McNamara & Gibson 2009). Further, they argue that placing an emphasis on protecting Tuvalu and SIDS like it is of global importance, because this will lead the world to address the root cause of the problem immediately, avoiding patchy solutions which will see more and more states negatively impacted (McNamara & Gibson 2009). The people of Kiribati also reject the climate refugee terminology, arguing that it denies them their dignity and typifies them as passive and lacking in future prospects (Yamamoto & Esteban 2014). The solutions for SIDS that have been proposed under current international law are unjust, and they are illustrative of the shortcomings and blind spots of contemporary territorial sovereignty. As stated by the Marshallese in their submission to the OHCHR:

(L)and is not viewed as interchangeable real estate, but instead as a foundation of national, cultural, and personal identity and spirit... (The) assertion that a low-lying, remote developing island nation can simply "adapt" to the physical loss of its homeland and nationhood by removing the population to a foreign nation is ... unacceptable as an affront to self-determination and dignity (as cited in Willcox 2012, p. 19).

It would seem that, under the current trajectory of international relations between sovereign territorial states, within the context of climate change, the characterization of SIDS as 'sacrifice zones' is appropriate. The term 'sacrifice zone' may have first been used in the Soviet

Union to describe populated areas rendered unliveable by nuclear fallout (Washington Post 2010). In the United States, it was first used in the context of strip mining, in which a National Academy of Sciences report coined the term “National Sacrifice Area” to describe land that could not be rehabilitated as a result of pollution brought on by mining activity (Huntington Smith 1975). In all of these cases and in others where the term ‘sacrifice zone’ is used, irrevocable environmental degradation takes place, usually to the detriment of poor populations (Washington Post 2010), as a ‘price to pay’ in the furthering of political and economic pursuits. By examining the plight of SIDS like Tuvalu, this essay has shown that sacrifice zones are currently forming on a global scale, with the support of governments from wealthy territorial states which have agreed to an inadequate 2 degrees Celsius target, and then subsequently failed to aim for that inadequate target.



Figure 8: Children play on the Tuvaluan shoreline as storm-clouds approach (from Taylor 2018).

SIDS, of course, are not the only geographic regions of the world where the reality of territorial sovereignty is being brought into question, or where self-determination is under threat; SIDS are microcosms of threats also developing elsewhere in the world. It is not only sea-level rise that can render land unliveable. According to the World Bank, Pakistan has been very susceptible to drought over the past decade. It relies on the largest contiguous irrigation system in the world, called the Indus Basin Irrigation System (IBIS). Without this irrigation system, farming would not be possible in Pakistan due to its arid and semi-arid climate. Pakistan's main water source, including the water used for IBIS, is from the rivers flowing in the Indus basin. About 50-80% of the water that flows there comes from glacier and snow melt in the Hindu-Kush-Karakoram portion of the Himalayan mountain range. The World Bank projects through modelling that under the most extreme climate change scenarios, there would be a decrease in total water runoff from glaciers into the Indus basin. They project that under less extreme climate change scenarios, there would be a change in the seasonal meltwater peak (Yu et. al. 2013). Decreased meltwater is extremely concerning, but a seasonal change in peak meltwater is also concerning, because it may result in a lack of water at times when it is most needed (for example, during droughts, or during summer months).

The story in Pakistan is one regional example of many similar stories that can be told about the negative impacts of the extra-territorial climate change problem, which are not unique to SIDS. Yet SIDS are a pressing and illuminating example of the problem that the world faces. The international community should not give up on protecting Tuvaluan interests – it should not allow for sacrifice zones – as such a path forward, beyond simply being unjust to Tuvaluans, is also unsafe for many more people, in that it sets a precedent for failing to act in the global interest

and instead acting in the short-term interests of some actors in particular territorial states until some arbitrary point in the future when such sacrifices are finally brought to an end. As a Pacific ambassador argued,

(O)f course we would want to believe that we could still save, not only my country, but the rest of the world because if the problem continues ... (E)verybody who lives in the coastal low-lying areas of the world will feel the bites of what we are going through already now. (McNamara & Gibson 2009, p. 479).

Allowing for an international forms of 'sacrifice zones', as each territorial state suffers what it must, is an unsustainable and dangerous path forward. As problems resulting from climate change, like those experienced in Tuvalu, manifest themselves in other territorial states with reverberating impacts across borders, this will become increasingly apparent. Derek Wong writes that international problems require international solutions (2013). For many on this planet, the need for rapidity in such solutions is paramount, and, as this essay has illustrated, this will place pressure on what has so far been a rigid response from powerful actors mired in the territorial trap. If global sacrifice zones are allowed to exist, the potentially resulting political pressure, refugee flows, conflict, and public outcry, would place a final strain on the continued existence of contemporary territorial sovereignty.

Conclusion

Sovereignty has proven to be an inflexible concept today, rooted in territory and justified by a legal system that has failed to evolve along with international processes. However, this essay has also shown that sovereignty is something that has indeed evolved across history, and it will

continue to evolve based on the societal needs that it reflects – that is, the societal needs of global actors backed by serious political power. It is apparent that if small territorial states like Tuvalu had greater recourse to political power, this evolution may have already transpired. The goal of this essay has been to be descriptive of the strains that climate change places on territorial sovereignty both by violating it and by evidencing its dysfunctionality in the face of global socio-spatial processes, rather than to be prescriptive of how it should evolve in the future. Nevertheless, this essay has offered much evidence that, at least within the context of climate change, norms of territorial sovereignty have been undermined to a significant extent. This essay has argued that the diffuse nature of climate change challenges the very definition of territorial sovereignty as well as one of its key tenets – territorial integrity. It has shown that the hegemonic means of addressing climate change along territorial lines has been unsuccessful in part due to the territorial trap. It has outlined how the norms of sovereign equality and self-determination, both of which flow from territorial sovereignty, have also been undermined by climate change. Finally, it has argued that the continued emphasis on territorial sovereignty in addressing climate change may result in the creation of sacrifice zones in certain regions of the globe, an outcome which itself could pose a challenge to territorial sovereignty. Taken together, and combined with other extraterritorial forces that interact with climate change, like refugees and financial flows, these challenges will place a strain on contemporary understandings of sovereignty which may very well create the socio-political ingredients necessary for the first major reshaping of sovereignty since it began to take its current form during the medieval era, an event which some scholars of state sovereignty have predicted (Philpott 1995).

An understanding of the precarity of Tuvalu and SIDS like it further accentuates the immediacy of these challenges, and highlights the need for a preparatory reconsideration of the meaning of sovereignty and its implications for international law. A number of scholars are coming to this conclusion; some, like Ödalen (2014), have begun to grapple with the potential for a deterritorialized state within existing legal and normative frameworks. Others have questioned this framework, and proposed that a new way forward is necessary. Willcox (2012) writes that in the face of the loss of territorial sovereignty, the human rights regime must no longer 'rely on the state as the central domain of moral concern' (p. 1). Blanchard (2015) has begun speculating on the 'practical and legal' (p. 72) consequences of territorial disappearance. She acknowledges the continued importance of the state as a 'primary subject of international law' (p. 117), but she uses a theoretical lens to contemplate an entirely new version of the state – one that is not 'anchored in territory' (p. 117). As for the Tuvaluans, one might expect that they would hope a rethinking of sovereignty, like the ones posited above, will not be necessary as a reaction to their loss of territory, but rather as a means of bringing to an end the way that global forces have historically contributed to it. Such an outcome would be good for people both within and outside of the demarcations of Tuvaluan territory.

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