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Abstract

One of the most existential threats posed by climate change is the threat posed to the number of small island states scattered around the world's oceans. Given the fact that many of these countries are low-lying and have average elevations in the single digit of meters, sea level rise of even a few meters over the coming decades and centuries runs the risk of completely submerging many of these islands, and in the process, extinguishing their sovereignty as nation states. Since traditional notions of statehood require an element of territoriality, as first defined in Article 1 of the 1933 Treaty of Montevideo,[1] we may be forced to redefine what constitutes a "state" for the purposes of international relations. This paper will focus primarily on the issue of state sovereignty as it applies to small island states in a time of climate change and sea level rise. In addition, it will address and critique some of the potential solutions to the issue of sovereignty of small island states. Finally, it will advance a proposal that a new series of bilateral treaties, based upon the Compacts of Free Association (CFAs) between the United States and three Pacific Ocean island states, the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau (the Compact States) could strike the best balance between the protection of these states' sovereignty, the preservation of their political and cultural independence, and providing for the necessary resources and infrastructure to allow these states to continue to exist as distinct entities in the international community.

Introduction

Climate change is considered one of the gravest threats to a number of small island states scattered across the world. Given the silence of international law on what happens to a state if it loses its entire territory due to climate change, there is no established plan for how these countries will continue to exist as sovereign

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1. Montevideo Convention on the Rights and Duties of States, art. 1, Dec. 26, 1933, 49 Stat. 3097, 165 LNTS 19.

entities should sea levels continue to rise at their current rates and cause these island territories to become submerged. A further question remains as to how the island states most threatened by climate change will be able to adapt to rising sea levels while maintaining their sovereign personality, their economic vitality, and their cultural and political autonomy. Beyond these concerns, there is also an issue of what gaps exist in current international legal instruments and what instruments need to adapt to these circumstances to maximize the potential of these island states to not only survive rising sea levels, but thrive in the new environment.

One potential solution that could facilitate the survival and adaptation of the island states most threatened by rising sea levels involves the development of bilateral treaties between these nations and more developed nations. Such bilateral treaty structures can be modelled on the extant "Compacts of Free Association" that are in force between the United States and three Pacific island states: The Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI) and the Republic of Palau (hereinafter, the "Compact States"). Such treaties would create a structure that would allow developed nations to shoulder the financial and technical burdens to protect the territoriality and sovereignty of these island states. This paper will argue that such treaties can facilitate the survival of states threatened by rising sea levels through land reclamation and other "island hardening" infrastructure projects that many of these nations would not ordinarily be able to afford, given their economic situations. Furthermore, these treaty structures allow for the possibility for developed nations—many of which emitted large amounts of the greenhouse gases responsible for the problems faced by these island nations—to help shoulder the financial burdens faced by these smaller nations in the decades ahead.

The discussion of the threat posed to small island nations by rising sea levels is not by any means new, and the potential effects of sea level rise on island nations have been recognized and discussed for almost three decades. In 1989, President of the Marshall Islands, Amata Kabua, stated the issue succinctly:

> It is truly frightening to think that our ocean will turn against us. We have been sustained by the ocean for two millennia. . . . We have learned that this harmony may be interrupted by the action of nations very distant from our shores. I hope that the appeal of the peoples of the Pacific can help convince the industrialized nations to discontinue their profligate contamination of the atmosphere.[2]

However, even though climate change and the prospect of rising sea levels has become more accepted and the need for action more urgent, there are no existing proposals that completely solve the threat posed by rising sea levels to

2. Patrick D. Nunn & Nobuo Mimura, *Vulnerability of South Pacific Island Nations to Sea-Level Rise*, 24 J. OF COASTAL RESEARCH 133, 134 (Fall, 1997).

these island nations' respective sovereignty.[3] Indeed, there is the potential that these nations could be completely submerged over time, placing climate change as not just a costly burden to these nations, but as an existential threat. Currently, there are no clear routes about how these nations will adapt to rising sea levels, either in terms of how they are represented in the international community or how they will survive and exist in a potentially "post-submerged" state.[4] Besides the loss of sovereignty, many of these nations also face threats to their ability to have an effective economy due to the loss of territory of smaller outlying islands, as well as the rights these nations once held to their territorial seas and their Exclusive Economic Zones (EEZs), as defined by the United Nations Convention on the Law of the Sea (UNCLOS).[5] Since many of these outlying areas are at risk of submerging under rising sea levels within a matter of decades, immediate action needs to be taken in order to preserve these areas, and by extension, these nations' territorial seas and exclusive economic zones.

This paper will discuss the overall nature of the problem of rising sea levels and the effects upon some of the island nations most at risk to rising sea levels. In addition, this paper will examine several of potential means of addressing rising sea levels, both from the perspective of actual physical adaptations (artificial land similar to the islands created in the South China Sea, or floating islands), as well as legal instruments meant to ensure the long-term survival of the nation states themselves in the event that they become submerged and lose their entire landmass. The potential solutions discussed include (but are not limited to) the evolution into nations "in exile" and the as of yet theoretical entity called the nation "ex-situ." Each of these proposals will also be critiqued in terms of the solutions they purport to solve and other issues that arise in the event of their implementation. Finally, this paper will focus on a new solution to address the issues faced by small underdeveloped islands nations, and will seek to show that an already existing treaty structure (namely, the Compact of Free Association) can be utilized as a model between developed nations and small island states in order to establish a line of aid by which these developing nations can fund and assist in developing the infrastructure necessary to adapt to rising sea levels, while maintaining their political independence, their territoriality, as well as their societal and cultural autonomy.

The Threat of Climate Change

Since the First Assessment Report to the Intergovernmental Panel on Climate Change (IPCC), the IPCC has anticipated at least a sea-level rise of about 0.3-0.5

3. Derek Wong, *Sovereignty Sunk – The Position of Sinking States at International Law*, 14 MELB. J. INT'L L. 346, 383 (2013).

4. *See* Maxine A. Burkett, *The Nation Ex-Situ, in* THREATENED ISLAND NATIONS: LEGAL IMPLICATIONS OF RISING SEAS AND A CHANGING CLIMATE 89 (Michael B. Gerrard & Gregory E. Wannier eds., 2013) ("This loss of land [by threatened island nations] may create a conundrum for international law, which is only equipped to deal with neater circumstances of stateless individuals and expiring states.").

5. Rosemary Rayfuse, *International Law and Disappearing States*, 41 ENVTL. POL'Y & L. 281, 282 (2011).

meters by 2050 and about 1 meter by 2100, together with a rise in the temperature of the surface ocean layer of between 0.2°C and 2.5°C.[6] The updated Fifth Assessment Report, as applied to small islands, states that sea level rise, in conjunction with other "high-water events," will threaten low-lying coastal areas with a high degree of confidence by the time period between the years 2080-2100.[7] Even though the estimates for sea level rise are projected to be one meter by the year 2100 at an average rate of between 2.8 millimeters and 3.6 millimeters per year since 1993,[8] these numbers tell only a part of the story. Further research indicates that the rate at which sea level rise is occurring varies in different oceans. In particular, in the western tropical Pacific region, sea level rise is estimated to be "at a rate up to 3–4 times larger than the global mean between 1993 and 2010" according to satellite altimetry data.[9] It is with this data in mind that the Fifth Assessment Report to the IPCC stated that it is virtually certain that global mean sea level rises are accelerating and that it presents a particular threat to small islands due to particular vulnerabilities brought about by different stressors.[10] The stressors mentioned by the IPCC include the degradation of fresh water resources, the prospect of reef bleaching, and sea flood and erosion risks.[11]

Issues Faced by Small Island States Due to Climate Change

While many nations will be affected by the prospect of climate change in one manner or another, low-lying island nations are uniquely susceptible to these

6. Tegart, W.J.M. et al., *1990: Policymakers' Summary, in* CLIMATE CHANGE: THE IPCC IMPACTS ASSESSMENT. CONTRIBUTION OF WORKING GROUP II TO THE FIRST ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1 (Tegart, W.J.M. et al. eds., 1990), http://www.ipcc.ch/ipccreports/far/wg_II/ipcc_far_wg_II_spm.pdf [https://perma.cc/NRV5-QD99].

7. Christopher B. Field et al., *IPCC, 2014: Summary for Policymakers, in* CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY: PART A: GLOBAL AND SECTORAL ASPECTS: CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 24 (C.B. Field et al. eds., 2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/ar5_wgII_spm_en.pdf [https://perma.cc/8SDH-AY4Q].

8. Leonard A. Nurse et al., *Small Islands, in* CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY. PART B: REGIONAL ASPECTS: CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1613, 1619 (V.R. Barros et al. eds., 2014), http://www.ipcc.ch/pdf/assessment-report/ar5/wg2WGIIAR5-Chap29_FINAL.pdf [https://perma.cc/MSH8-WMKM]; *see also* Merrifield, M.A., S.T. Merrifield & G.T. Mitchum, *2009: An Anomalous Recent Acceleration of Global Sea Level Rise*, J. CLIMATE, 22, 5772–5781, https://doi.org/10.1175/2009JCLI2985.1 [https://perma.cc/3TW 4-AUJ2].

9. *IPCC Working Group II 2014 Report*, *supra* note 7, at 1619; *see also* M.B. Becker et al., *Sea Level Variations at Tropical Pacific Islands Since 1950*, GLOB. PLANET. CHANGE, 80, 85 (2012).

10. *IPCC Working Group II 2014 Report*, *supra* note 7, at 1616.

11. *Id.*

effects of climate change compared to larger "continental" nations. These issues manifest themselves in three distinct areas: first, in the increasingly ephemeral nature of the territory and Exclusive Economic Zones of these nations, which will disappear under rising sea levels; second, in the financial challenges already faced by these small island states, many of which are particularly underdeveloped compared to many other nations; and third, the existential threat to the sovereignty of these nations, due to the idea under customary international law that nation-states must possess territory, and the lack of action in the international arena in defining the role of a sovereign state that does not include the aspect of territoriality. Underscoring these points is the irony that these nations are among the nations least responsible for the emission of greenhouse gases into the atmosphere, but nevertheless will be among the first to suffer the horrifying consequences of climate change and sea level rise.[12]

Geographic Challenges

The basis for much of the territorial claims of states in and around bodies of water are governed under the United Nations Convention on the Law of the Sea (UNCLOS). For example, under UNCLOS, Article 121, islands are defined as such:

> An island is a naturally formed area of land, surrounded by water, which is above water at high tide.
>
> Except as provided for in paragraph 3, the territorial sea, the contiguous zone, the exclusive economic zone and the continental shelf of an island are determined in accordance with the provisions of this Convention applicable to other land territory.
>
> Rocks which cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf.[13]

However, another part of the Convention distinguishes between islands, under Article 121, and so-called "low tide elevations" under Article 13, which are defined as follows:

> A low-tide elevation is a naturally formed area of land which is surrounded by and above water at low tide but submerged at high tide. Where a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the

12. Ranee K., Panjabi Lal, *Can International Law Improve the Climate – An Analysis of the United Nations Framework Convention on Climate Change Signed at the Rio Summit in 1992*, 18 N.C. J. INT'L L. & COM. REG. 491, 532 (1992).

13. United Nations Convention on the Law of the Sea, art. 121, Dec. 10, 1982, 1833 U.N.T.S. 442.

> mainland or an island, the low-water line on that elevation may be used as the baseline for measuring the breadth of the territorial sea.
>
> Where a low-tide elevation is wholly situated at a distance exceeding the breadth of the territorial sea from the mainland or an island, it has no territorial sea of its own.[14]

Here, the application of Article 13 as applied to lower-lying islands would begin to have a dramatic effect on the territory of these island states, even assuming that more populated landforms will remain above sea level. If and when certain low-lying islands situated at the outer fringes of these nations' territories become "demoted" to low-tide elevations, Article 13(2) of UNCLOS states that they will lose the territorial seas that were formerly a part of the that state. For many of these nations, it is not a matter of these territorial seas reverting to the sovereignty of neighboring nations, but rather, would revert to the state of being "high seas," which are defined as, "all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State."[15]

In addition to the loss of territorial seas, the loss of territorial waters due to rising sea levels also impacts the extent of these nations' Exclusive Economic Zones (EEZs). For many of these nations, the EEZ provides valuable resources for these countries, due to the grant in UNCLOS of the sovereign right "of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil . . . ."[16] With the regression of coastal baselines because of sea level rise, the end result of landmasses devolving from islands to low-tide elevations (if not complete submersion) as a result of climate change is not just the loss of territorial seas themselves, but the EEZs which are measured off of existing baselines[17] Once the Exclusive Economic Zone of a nation vanishes, the waters are then considered "high seas"[18] under Part VII of UNCLOS, and bestows upon all states the right to, among other thing, the freedom of constructing "artificial islands and other installations permitted under international law"[19] as well as "the freedom of

14. United Nations Convention on the Law of the Sea, art. 13, Dec. 10, 1982, 1833 U.N.T.S. 403.

15. United Nations Convention on the Law of the Sea, art. 86, Dec. 10, 1982, 1833 U.N.T.S. 432.

16. United Nations Convention on the Law of the Sea, art. 56(1)(a), Dec. 10, 1982, 1833 U.N.T.S. 418.

17. *See* United Nations Convention on the Law of the Sea, art. 57, Dec. 10, 1982, 1833 U.N.T.S. 419. ("The exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.").

18. *See* United Nations Convention on the Law of the Sea, art. 86, Dec. 10, 1982, 1833 U.N.T.S. 432.

19. United Nations Convention on the Law of the Sea, art. 87(1)(d), Dec. 10, 1982, 1833 U.N.T.S. 432.

fishing[.]"[20] The acute nature of the loss of the resources provided by EEZs are discussed further in the next section.

Beyond the loss of territorial seas and EEZs, sea level rise, if it was to continue unabated, would have dire consequences on the existence of many of the islands that make up most of these countries. The Republic of Maldives for example, in the Indian Ocean, has a mean elevation of just 1.7 meters above sea level (its highest point, the eighth tee of a golf course located on Villingi Island, is just five meters above sea level).[21] In comparison, the Republic of Kiribati, in the Pacific Ocean, has a mean elevation of just two meters above sea level.[22] Other island nations in the Pacific are similarly situated, including Tuvalu (average elevation of two meters)[23] and the Marshall Islands (average elevation of two meters).[24] It becomes very clear that if the sea-level rise predictions of the IPCC's Fifth Assessment Report come to fruition, large portions of the landmasses for these island states will become submerged below rising sea levels, resulting in the loss of land, territorial seas, and Exclusive Economic Zones.

Financial Challenges

Compounding the issues faced by island states as a result of climate change is twofold in terms of the financial difficulties. First, the lack of international law in preventing the loss of Exclusive Economic Zones would disproportionately impact the ability of these nations to fund their own governance and local economy. Second, a further obstacle for these nations arise in the removal of previously available resources in former EEZs to develop and maintain the infrastructure meant to preserve existing shorelines and territory and to prevent flooding and inundation of their existing landmasses without large scale foreign aid.

One example of the potential economic impacts of these nations stems from just the potential loss of EEZs as a result of sea level rise turning landmasses from islands to low-tide elevations, if not the complete submergence of the land mass. To stress the relative import of the Exclusive Economic Zones, the Republic of Kiribati has a landmass of only 811 square kilometers, roughly comparable to

20. United Nations Convention on the Law of the Sea, art. 87(1)(e), Dec. 10, 1982, 1833 U.N.T.S. 432.

21. *Maldives, The World Factbook*, CENTRAL INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/resources/the-worldfactbook/geos/mv.html (last visited Nov. 10, 2017) [https://perma.cc/6ABZ-DELZ].

22. *Kiribati, The World Factbook*, CENTRAL INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/kr.html (last visited Nov. 10, 2017) [https://perma.cc/K9W6-UFMM].

23. *Tuvalu, The World Factbook*, CENTRAL INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/tv.html (last visited Nov. 10, 2017) [https://perma.cc/F99K-8HA7].

24. *Marshall Islands, The World Factbook*, CENTRAL INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/rm.html (last visited Nov. 10, 2017) [https://perma.cc/4DV5-4GQ5].

about four times the size of Washington, D.C.[25] Its Exclusive Economic Zone, however, totals approximately 3.5 million square kilometers,[26] roughly one-third the total land area of the United States.[27] This Exclusive Economic Zone is of great importance to Kiribati, and is largely responsible for supporting the national economy, due to the fact that half of the government budget is funded from the granting of fishing licenses to foreign vessels in the EEZ.[28] The Kiribati national budget in turn is responsible for more than half of the GDP of the country as of 2008.[29]

This problem of the degradation of EEZs is not limited to just Kiribati, however. Many Pacific island nations, given their relatively small land areas, were granted enormous EEZs, along with the wealth they could generate as a result of the regime created under UNCLOS, primarily through the valuable fish stocks located within these zones.[30] The situation with Kiribati is hardly unique, as many of these island nations have EEZs ranging from a hundred to a thousand times their landmass, a disproportionate scale unlike other countries by virtue of their relative remoteness, and the sprawled out nature of their island landmasses.[31] While many of these nations are relatively poor (GDP per capita for Kiribati, the Solomon Islands and Papua New Guinea was less than US$1,000 as of 2008),[32] the fees that these countries are able to collect from foreign fishing vessels provide a critical component to their economies, particularly in light of the fact that many domestic fishing industries are unable to take advantage of the potential wealth of their respective EEZs.[33]

Even though there is the potential for these nations to unlock the wealth available from their Exclusive Economic Zones, such potential prosperity is diminished with the knowledge that these zones are under threat of receding due

25. *Kiribati, The World Factbook*, CENTRAL INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/the-world-factbook/geos/kr.html (last visited Nov. 10, 2017) [https://perma.cc/K9W6-UFMM].

26. ASIAN DEVELOPMENT BANK, KIRIBATI SOCIAL AND ECONOMIC REPORT 1 (2008), https://www.adb.org/sites/default/files/publication/29733/kiribati-economic-report-2008.pdf (last visited Nov. 10, 2017) https://perma.cc/2XHB-U8EM].

27. *United States, The World Factbook*, CENTRAL INTELLIGENCE AGENCY, https://www.cia.gov/library/publications/resources/the-worldfactbook/geos/us.html (last visited Nov. 10, 2017) [https://perma.cc/J7NF-5MB6] (Total Area: 9,833,517 sq. km.).

28. ASIAN DEVELOPMENT BANK, *supra* note 26.

29. *Id.*

30. *See* R. Hannesson, *The Exclusive Economic Zone and Economic Development in the Pacific Island Countries*, MARINE POLICY 32, 886, 889 (2008) ("The Pacific island countries were among the main beneficiaries of the EEZ. Most of these are small and not well endowed with natural resources, except for the fish within their EEZs. The main resource wealth of the EEZs is the tuna stocks that are located there.").

31. R. Hannesson, *The Exclusive Economic Zone and Economic Development in the Pacific Island Countries*, MARINE POLICY 32, 886, 889 (2008).

32. *Id.*

33. *Id.*

to climate change. It is clear that long term sea level rise would have a deleterious effect on the outer fringes of these states' Exclusive Economic Zones, the end result being a diminished EEZ, which would have a smaller portion of resources available to these nations under Article 56 of UNCLOS.[34] The decline in their respective EEZs will compound their already precarious financial situation, even without the financial impacts of implementing adaptation and mitigation measures to stem the effects of climate change.

While several of these states have already embarked on a course of adaptation and mitigation measures to blunt the impact of climate change on their respective territory, many of them are faced with the long-term vulnerability of being able to continue funding these programs without a substantial infusion of long-term aid, most likely through other foreign governments or international organizations. It cannot be stressed enough that the financial resources required to adapt to and mitigate the effects of climate change are enormous. To give an example of the costs associated with coastal defenses, Japan spent approximately US$200 million in the late 1980s to construct coastal defenses to protect Okinotorishima, a small grouping of rocks at the far southern end of its territory in an effort to preserve both their EEZ as well as their continental shelf rights.[35] While this is an admittedly extreme example, large-scale efforts would be required to preserve the landmasses of many of the islands that make up these nations. For example, in Fanafuti, the main island of Tuvalu, it is estimated that 54 kilometers of coastal defenses would be required to be constructed to protect its 2.5 square kilometers and 2,700 inhabitants.[36]

Some island nations have already begun the process of creating infrastructure meant to mitigate the effects of climate change. The Republic of Maldives, for example, has embarked on a "National Adaptation Programme of Action" (NAPA) which is meant to "communicate the most urgent and immediate adaptation needs of Maldives as stipulated under UNFCCC Decision 28/CP.7."[37] Among the projects discussed in NAPA include "Coastal Protection of Safer Islands to Reduce the Risk from Sea Induced Flooding and Predicted Sea Level Rise," estimated to cost US$13.9 million,[38] the Coastal Protection of Malé International Airport, costing an estimated US$18.5 million,[39] and a project entitled "Protection of human settlements by coastal protection measures on safer islands," estimated to

34. *See* United Nations Convention on the Law of the Sea, art. 56(1)(a), Dec. 10, 1982, 1833 U.N.T.S. 418.

35. Clive Schofield & David Freestone, *Options to Protect Coastlines and Secure Maritime Jurisdictional Claims in the Face of Global Sea Level Rise*, *in* THREATENED ISLAND NATIONS: LEGAL IMPLICATIONS OF RISING SEAS AND A CHANGING CLIMATE 155, 156 (Michael B. Gerrard & Gregory E. Wannier, eds., 2013).

36. James Lewis, *Sea Level Rise: Some Implications for Tuvalu*, 18 AMBIO 458, 459 (1989).

37. Ministry of Environment, Energy and Water, *National Adaptation Programme of Action, Republic of the Maldives*, UNFCC (2007), http://unfccc.int/resource/docs/napa/mdv01.pdf [https://perma.cc/528L-D5QE].

38. *Id.*

39. *Id.*

cost US$60.6 million.[40] Other projects that Maldives has embarked on include the development of coastal protection as a part of its "Safer Islands Strategy," consisting of lining the coastline of certain islands with tetrapod concrete units at an estimated cost of US$4,000 per meter.[41]

It is apparent that other island nations will face many financial challenges in enacting any sort of comprehensive plan to adapt to the reality of climate change and sea level rise. Indeed, in 1990 the IPCC ranked Maldives, Kiribati, Tuvalu, Tokelau, Anguilla, Turks and Caicos, Marshall Islands, and Seychelles as among the 10 nations with the highest protection costs in relation to GNP.[42] In the case of Kiribati, coastal protection was estimated in the report to cost approximately 18% of its annual GNP, while protection for Tuvalu was estimated to cost approximately 14% of its annual GNP.[43] Even though many of the most vulnerable island nations are among the smallest and least populated in the Pacific and Indian Ocean regions, even the relatively developed and more populated island nations face onerous financial burdens moving forward if they are to adequately address the issues posed by climate change. The Republic of Fiji, for example, is estimated to require almost 100% of its GDP in the development of projects meant to "strengthen Fiji's resilience to climate change and natural hazards for the decades to come."[44] Even with the high costs associated with these projects meant to adapt to the effects of climate change, the current status quo is perhaps even more untenable for Fiji, as the fraction of GDP lost every year due to cyclones and floods could increase by 50% by the year 2050, equivalent to more than 6.5% of the country's GDP for every year.[45]

While the costs of adapting to climate change for these countries are merely representative of the individual projects they come from, they also serve as a warning for the sheer costs that will occur as the need to adapt to climate change becomes all the more apparent and urgent for small island states. While these costs are great, and indeed beyond the resources of many of these countries, such expenses may be seen as necessary given the potential for even greater losses due to the extinguishing of these countries' EEZs through the degradation of their outer landmasses from islands to low-tide elevations or submerged landmasses without the rights of territorial seas or EEZs.

40. *Id.*

41. LILIAN YAMAMOTO & MIGUEL ESTEBAN, ATOLL ISLAND STATES AND INTERNATIONAL LAW: CLIMATE CHANGE DISPLACEMENT AND SOVEREIGNTY 87 (2014).

42. Tsyban, A., J.T. Everett, & J. Titus, *1990: World Oceans and Coastal Zones*, *in* CLIMATE CHANGE: THE IPCC IMPACTS ASSESSMENT, 6-1, 6-4 (1990).

43. *Id.*

44. WORLD BANK, CLIMATE VULNERABILITY ASSESSMENT: MAKING FIJI CLIMATE RESILIENT 27 (2017), http://documents.worldbank.org/curated/en/163081509454340771/pdf/120756-WP-PUBLIC-nov-9-12p-WB-Report-FA01-SP.pdf [https://perma.cc/N7X2-Y2Y7].

45. *Id.*

Sovereignty Challenges

As a final matter, there is an even more existential issue faced by these nations, beyond the financial burdens and the loss of territoriality. That is the potential loss of total sovereignty of these nations, and the associated geopolitical consequences that would flow from the end of their sovereignty. Currently, there is no procedure in international law to account for the abrupt extinguishing of a nation's sovereignty due to climate change.[46] Indeed, there are no circumstances in international law to account for the possible situation here where no successor State exists and the predecessor State has been rendered uninhabitable or has physically disappeared.[47] This issue stems from the fact that customary law has a very discrete definition of what actually constitutes a "state." While there was no historical definition of a state for the purposes of international law, customary international law adopted the definition from the Montevideo Convention on the Rights and Duties of States from 1933, which says that states under international law should possess the following qualifications:

(a) A permanent population

(b) A defined territory

(c) A government

(d) The capacity to enter into relations with other states.[48]

In addition, the United Nations Charter states that membership in that body "is open to all other peace-loving states which accept the obligations contained in the present Charter and, in the judgment of the Organization, are able and willing to carry out these obligations."[49] While there is no procedure in the charter to allow for the withdrawal of member states (to avoid the weaknesses inherent in the predecessor League of Nations),[50] the question remains unresolved about what would happen to a member state which has lost its entire territory. The potential complete loss of a state's territory could be marked as an inability to carry out the obligations of the Charter under Article 4(1) and could potentially be used to expel member states, or could force these states to be relegated to a sort of "Observer" status.

46. Burkett, *supra* note 4, at 93.

47. *Id.*

48. Montevideo Convention on the Rights and Duties of States, art. 1, Dec. 26, 1933, 49 Stat. 3097, 165 LNTS 19; *see also* Jenny Grote Stoutenburg, *When Do States Disappear?: Thresholds of Effective Statehood and the Continued Recognition of Deterritorialized Island States*, *in* THREATENED ISLAND NATIONS: LEGAL IMPLICATIONS OF RISING SEAS AND A CHANGING CLIMATE 57 (Michael B. Gerrard & Gregory E. Wannier, eds., 2013).

49. U.N. Charter, art. 4, ¶ 1.

50. H. Kelsen, *Withdrawal from the United Nations*, THE WESTERN POLITICAL QUARTERLY 29 (1948).

It is precisely these unanswered questions on sovereignty and membership in the international community that are the most difficult challenges faced by small island states. While international law has previously provided definitions of what a "state" is for the purposes of being able to exercise a sovereign personality, the prospect of the end of one of the primary requirements of a state (where states possess a territory) is throwing that customary definition into flux. There is also the tension between the ability of island states to maintain their territoriality, balanced with the realities of the financial burdens that it would require, balanced further with the financial implications of not acting to save their territory, resulting in a loss of territorial seas and EEZs. The financial issues of adapting to and mitigating the effects of climate change become more apparent as funding for such activities will be taken on by the entire international community. While global investment and involvement is very much needed in these circumstances, this also brings a host of issues for island states, which could have deleterious effects long-term on their sovereignty and national agency.

It is with these concerns in mind that potential solutions can be categorized broadly into two main bodies: the first is the idea of island states having their territorial integrity extinguished, but the sovereign nation-state continuing to exist as a member of the international community in another capacity, as perhaps a nation "in exile" or as a "nation ex-situ." Another method of preserving these nations' respective sovereignty comes about as a result of the preservation of their territoriality (and by extension, their populations) through some method of extensive coastal defenses, land reclamation, or even floating or artificial islands. These categories seek to answer the same question through vastly different means, and while neither set of approaches is ideal in all respects, they do bring certain desirable aspects to the forefront. These methods of preserving island nation sovereignty in an age of climate change and rising sea levels will be discussed in further detail below.

Non-Territorial-Based Solutions for Threatened Island States

The "Government in Exile"

While the sovereignty issues faced by island states in light of rising seas brought by climate change are unique, there are certain non-territorial based solutions to the challenges faced by these countries. Perhaps the most well-known example of a non-territorial based solution to the issue of sovereignty is the concept of the "government in exile." While there is no fully accepted definition of the term "government in exile," the definition used in this context is:

> [A] government in exile consists of an individual or a group of individuals who reside within the territory of a foreign State after being forced to leave their homeland due to enemy occupation or possibly civil war. As a result, a government in exile lacks effective control over the territory of its State. Yet it claims to represent the will of the people of its homeland and, with the consent of the State

> of residence, asserts and possibly exercises governmental powers. The final goal of a government in exile is to (re)gain political power in its homeland.[51]

At several times in recent history, governments in exile have been established in a foreign country. The most prominent examples are from the Second World War, when several governments from the nations of Belgium, Greece, Luxembourg, the Netherlands, Norway, Poland, and Yugoslavia established themselves in London as a result of occupation by the Axis powers.[52] Even though these nations' respective territories (and most of their populations) were under the control of a foreign power, these governments in exile were recognized by the British Government, with Parliament according their members diplomatic privileges and immunities to the members of these governments in 1941.[53]

Since the Second World War, other nations' legal personalities have faced issues of recognition from time to time. Some of the more notable postwar examples include the Baltic states of Latvia, Lithuania, and Estonia during the Cold War (after their annexation by the Soviet Union), and the nation of Kuwait, when it was invaded and occupied by Iraq in 1990-91.[54] However, these examples do tend to share a common thread of belligerent occupation and illegal annexation in violation of the prohibition of the use of force.[55] These violations of one nation's sovereignty by another through the unlawful use of force can be seen as violations of jus cogens norms of international law.[56] In these historical cases, violations of these norms, such as the waging of aggressive war and annexation resulting from an unlawful use of force allow for the continued recognition of the legal personality these occupied or annexed States.[57]

Similar to the examples of invasion and forceful annexation, a strain of thought lends itself to having climate change and the potential effects on threatened island States as a jus cogens violation of international law. These potential violations arise as a result of the fundamental international norms that would be affected by the disappearance of an island State.[58] Such fundamental norms that

51. KATRIN TIROCH, *Governments in Exile*, *in* MAX PLANCK ENCYCLOPEDIA OF PUBLIC INTERNATIONAL LAW (Oxford Univ. Press 2011).

52. *Governments-in-Exile*, 1 DIG. INT'L L. 921, 925 (1963).

53. F. E. Oppenheimer, *Governments and Authorities in Exile*, 36 AM. J. INT'L LAW 568, 576 (1942).

54. Stoutenburg, *supra* note 48, at 59.

55. *Id.*

56. Vienna Convention on the Law of Treaties art. 53, May 23, 1969, 1155 U.N.T.S. 331, 344 (Jus cogens, also known as a peremptory norm of international law, is defined under the Vienna Convention of the Law of Treaties as "a norm accepted and recognized by the international community of States as a whole as a norm from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character.").

57. Stoutenburg, *supra* note 48, at 75.

58. *Id.*

would be affected by sea level rise and the loss of territory can include the right to self-determination and the right to dispose of their natural wealth,[59] which are rights granted to all peoples in both the International Covenant on Civil and Political Rights[60] as well as the International Covenant on Economic, Social and Cultural Rights.[61] If sea level rise was to continue unabated, one obvious consequences would be the loss of each nation's EEZ through the submergence of their outermost islands. A loss of the natural resources inherent in these lost EEZs and territorial waters could constitute a jus cogens violation of international law.[62] The International Court of Justice has gone so far as to recognize the idea of permanent sovereignty over international resources as a principle of customary international law.[63] Furthermore, the failure of the international community to make meaningful contributions towards reducing emissions could be seen as a breach of peremptory norms that are affected by threatened island States.[64] Even though traditional violations of international norms were based on the more direct action of one State against another, the similar consequences that would result to these threatened island States such as the loss of natural resources and the potential loss of sovereignty do lend credence to the idea of these island states continuing to be recognized internationally as nations in exile.

Even if anthropogenic climate change were to be considered a jus cogens violation of international norms that would allow for governments in exile to be established and recognized in a manner similar to other historical examples, practical considerations of maintaining the effectiveness and legitimacy of a government in exile begin to occur. Such concerns, especially in the context of climate change and the timescales involved, become more apparent. Historical governments in exile were always based in the notion that the territory was still extant, but physically occupied by another power. By contrast, the threat posed to island nations is very different, as it is the product of sea level rise rather than aggressive war. The idea of governments in exile being occupied by another state also relates to a more cognizable temporal function. The periods of these governments existing ranged from several months for Kuwait, to several years for the European states during the Second World War, to the multi-decade exile

59. Stoutenburg, *supra* note 48, at 76.

60. International Covenant on Civil and Political Rights art. 1, Dec. 19, 1966, 999 U.N.T.S. 171, 173.

61. International Covenant on Economic, Social and Cultural Rights art.1, Dec. 16, 1966, 93 U.N.T.S. 3, 5.

62. Stoutenburg, *supra* note 48, at 77 ("In view of the fact that it has frequently been labeled an 'inalienable right' and given the respective opinion juris of—particularly developing—States, there is good reason to support the qualification of the right to permanent sovereignty over natural resources as possessing jus cogens character.").

63. Armed Activities on the Territory of the Congo Case (Democratic Republic of the Congo v. Uganda), 2005 I.C.J. 168, 251 (Dec. 19).

64. Stoutenburg, *supra* note 48, at 84, 85.

governments of the Baltic States.[65] However, despite the length of time involved, the return of these governments to their territory was either by the same population who was exiled in the first place, or within a generation or two.

One of the intractable issues that arises in an application of the "government in exile" arrangement to these threatened island states is not legal, but temporal. While there is the possibility that greenhouse gas concentrations could decline in the future, causing a lowering of the sea levels, potentially leading to a reemergence of these islands, there is a great uncertainty in sea levels lowering to the point that habitation on these islands would be feasible.[66] From a practical standpoint, it seems difficult to comprehend a government in exile being able to effectively serve as a sovereign representative of a population and submerged territory. While similar arguments could be made that several nations on Earth have histories that span millennia (including Egypt and China),[67] these areas always had a fairly cognizable, geographically static population and a tangible physical territory that their population could inhabit.

Conversely, the inhabitants of these threatened island states would have no possible recourse to maintain such a coherent identity barring a wholesale resettlement scheme on another territory. While the idea of entire island states moving to another land to start over may seem extreme, such courses of action are under serious consideration. Some island nations have already begun the purchase of land in other countries for the purposes of resettling their population, such as Kiribati, which has purchased twenty square kilometers of land in Fiji for potential resettlement.[68] However, finding land to permanently settle on, as Kiribati is doing, is a solution fraught with challenges. First and foremost is, of course, funding the purchase of suitable land for resettling an entire nation's population[69] Additionally, such resettlement schemes may encroach on existing populations living on those lands, raising the potential for their own displacement.[70]

65. *Id.* at 74, 75.

66. Lilian Yamamoto & Miguel Esteban, *Atoll Island States and Climate Change: Sovereignty Implications*, *in* UNU-IAS Working Paper No. 166 41–42 (2011) ("Even though emissions would be reduced to zero at the year 2100 it would take 100 to 400 years (according to different models) for CO2 concentrations to drop from their maximum range (650 to 700 ppm) to double their pre-industrial level (560 ppm, which is still much higher than the present of around 400 ppm)."); *see also* Gerald A. Meehl, et al., *2007 Global Climate Projections*, *in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS: CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 747, 825 (2007), http://www.ipcc.ch /pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf.

67. Yamamoto & Esteban, *supra* note 66 ("Although these possibilities and time-scales appear pointless in the mind of the lifetime of individual human beings, several nations on Earth (such as China and Egypt) have a history that spans millennia.").

68. Laurence Caramel, *Besieged by the Rising Tides of Climate Change, Kiribati Buys Land in Fiji*, THE GUARDIAN (June 30, 2014), https://www.theguardian.com/environ ment/2014/jul/01/kiribati-climate-change-fiji-vanua-levu [https://perma.cc/CGR3-MLWR].

69. *Id.* ("The Church of England has sold a stretch of land mainly covered by dense forest for $8.77m.").

70. *Skepticism over Kiribati Purchase of Fiji Land*, RADIO NEW ZEALAND (Jan. 13, 2016), http://www.radionz.co.nz/international/pacific-news/294009/skepticism-over-kiriba

One final offshoot of the nation in exile proposal that warrants mention is a proposal floated by Tuvalu to Australia in 2009 for a mass resettlement scheme of the small island nation.[71] The proposal involves moving the entire island nation's 10,000 inhabitants to land in Australia, whereby that nation would continue to act as a sovereign entity in its own right (maintaining a seat and vote at the United Nations).[72] Like a nation in exile, Tuvalu would exist in Australia with the ultimate intention of returning back to its island should conditions allow for it.[73] This arrangement also operates under the assumption that it would also be able to maintain its EEZ (estimated at around one million square kilometers[74]), but no provision is mentioned as to *how* this EEZ would be enforced.

Regardless of the ultimate solution made for threatened island States, there does appear to be merit in the idea of freezing of Exclusive Economic Zones as a means of supporting its continued sovereign existence.[75] Indeed, it may be worth examining additional protocols to UNCLOS to provide for the "locking in" of EEZs for small island States, in addition to other measures that are devised to protect their sovereignty at-large. However, barring some sort of compelling reason for nations such as Australia to effectively "cede" sovereignty of their own territory, actual territorial cessions by existing nations for small island states could be politically infeasible in the ceding countries. Depending on where such territorial entities are created, they run the risk of causing further displacement of local populations. Even if there could theoretically be a high degree of international pressure for highly polluting countries such as the United States or Australia to acquiesce to such territorial cessions, any government which would agree to such an arrangement would ultimately be subject to the democratic accountability of their local electorates. Furthermore, such cessions of territory to different populations could be opposed by other states as well, merely due to the precedential value it could have regarding their own respective territorial integrity in the future.

ti-purchase-of-fiji-land (last visited Dec. 7, 2017) [https://perma. cc/G7GT-QFJU] ("North Carolina geography and development student James Ellsmoor, who recently paid a visit to the plot of land, says it is very remote with inhospitable hilly, swampy terrain . . . . He says the land already has a community of displaced people living on it. Mr. Ellsmoor says the welfare of the community of about 500 ethnic Solomon Islanders living on the land who are descendants of colonial slaves kidnapped to work on Fiji's sugar plantations is also a concern, as they have no land rights elsewhere in the country.").

71. Brad Couch, *Tiny Tuvalu in Save Us Pleas Over Rising Seas*, NEWS.COM.AU, http://www.news.com.au/news/save-us-islands-climate-plea/newsstory/55321c39707d2ea92a5d347c75aa4fe8 (last visited Dec. 7, 2017) [https://perma.cc/KLM4-UGZW].

72. *Id.*

73. *Id.*

74. *Id.*

75. Rosemary Rayfuse, *W(h)ither Tuvalu? International Law and Disappearing States*, *in* UNSW Law Research Paper No. 2009-9 12 (2009), https://ssrn.com/abstract=1412028 (last visited Dec. 7, 2017) [https://perma.cc/Z9VF-3K75].

The Nation "Ex-Situ"

One unique proposal for addressing the issue of state sovereignty among island states comes from Professor Maxine Burkett, who proposes an entirely new category of nationhood, the Nation "Ex-Situ."[76] While Professor Burkett's proposal covers an article in and of itself, the basic outline of the theoretical Nation "Ex-Situ" is as follows: as sea levels continue rising and threaten the territory and population of these island states, the United Nations Trusteeship system would be reestablished in a modified form to act as a continuity of the threatened states and to preserve the sovereign equality of these states.[77] Specifically, the UN trusteeship system that was in place after the Second World War is utilized as the model since it serves to "demonstrate the viability of this kind of removed governance and provides a structure that the international community can most easily replicate given earlier experiences."[78] One key difference from previous trusteeship arrangements however, is that instead of the historical arrangement of a state, a group of states, of the United Nations holding the territory in trust, the new system proposed here would be marked by the UN's comparative absence in structuring the internal arrangement of the trusteeship arrangement.[79] In fact, in order to respect the sovereign equality of the threatened state, the UN and its members could act only to support the transition to ex-situ nationhood.[80]

The overall structure of the trusteeship arrangement would first be as an interim body serving alongside the existing threatened state to facilitate a transition of sovereign functions.[81] The decisions that these interim bodies (referred to as "Interim Missions") could undertake specifically mentioned include: (1) determining appropriate modifications to the current in-situ political and economic institutions; (2) enacting legislation for the continued citizenship as well as distribution of monies from resource rents, adaptation funding, or compensation from other international entities; (3) resolving property disputes and appropriate regimes for compensation; and (4) developing a mechanism for determining what is in the best interests of a diaspora and representing the people in international affairs accordingly.[82] This arrangement would continue for a period of time, but once "complete territorial dislocation" occurs, the interim body would combine with the dislocated governing body to form a single locus of power.[83] This new body, now the central government of the nation ex-situ, would from that point coordinate all social, economic, and commercial matters related to its former territory for the benefit of its citizens.[84] This arrangement, Professor Burkett

76. *See generally* Burkett, *supra* note 4.
77. *Id.* at 109.
78. *Id.*
79. *Id.* at 109.
80. *Id*. at 109, 110.
81. Burkett, *supra* note 4, at 110.
82. *Id.* at 111.
83. *Id.* at 112.
84. *Id.*

writes, could continue to exist in perpetuity, but also notes that it could be subject to dissolution at any time via whatever voting procedures it chooses to use.[85]

Even if Professor Burkett's proposal for Nations "Ex-Situ" seem somewhat far-fetched in bestowing a sovereign character on non-territorial entities, there is both historical and current precedent to suggest that such a course of action is at least theoretically feasible as applied to small island states. In October 1870, the Kingdom of Italy occupied the heretofore Papal-ruled city of Rome, culminating the process of unification of the Italian peninsula while ending the sovereignty of the Catholic Church over the city.[86] At the same time however, this occupation began what was referred to as the "Roman Question" for the next sixty years, as the leaders of the Catholic Church beginning with Pope Pius IX remained in the Vatican as "prisoners" in protest of the move in an effort to avoid recognition of the authority of the Kingdom of Italy.[87] As a result, the Pontiffs had no territorial jurisdiction over any territory for an almost sixty-year period.[88] Despite the lack of territoriality however, the Holy See continued to exercise a certain degree of sovereignty and diplomacy independent of that from the Kingdom of Italy. For example, the Vatican and the German Empire conducted an exchange of diplomats in 1882, and the Vatican assisted in the mediation of territorial disputes between Germany and Spain in 1885.[89] Even the United States Supreme Court recognized this unique situation of the seat of the Roman Catholic Church, writing in 1908 that "[t]he Holy See still occupies a recognized position in international law, of which the courts must take judicial notice."[90]

However, this period of sovereign purgatory for the Vatican was resolved in 1929 with the signing of the Lateran Pacts between the Kingdom of Italy and the Holy See.[91] The Pacts established the full ownership and sovereignty of the Vatican under the Holy See and in "international matters as an inherent attribute in conformity with its traditions and the requirements of its mission to the world."[92] As a result, even with a notional territory in the Vatican, the Holy See is a recognized actor in international law and is a party to various conventions in its own right, including the Geneva Conventions of 1949, the Convention on the Rights of the Child of 1989, and the Vienna Convention on Diplomatic Relations.[93]

85. *Id.* at 112, 113.

86. THOMAS EWING MOORE, PETER'S CITY: AN ACCOUNT OF THE ORIGIN, DEVELOPMENT AND SOLUTION OF THE ROMAN QUESTION 59–60 (1930).

87. *Id.* at 183.

88. Guido Acquaviva, *Subjects of International Law: A Power-Based Analysis*, 38 VAND. J. TRANSNAT'L L. 345, 354 (2005).

89. THOMAS EWING MOORE. PETER'S CITY: AN ACCOUNT OF THE ORIGIN, DEVELOPMENT AND SOLUTION OF THE ROMAN QUESTION 185 (1930).

90. *Ponce v. Roman Catholic Apostolic Church*, 210 U.S. 296, 318 (1908).

91. Lateran Pacts, arts. 2 & 3, Feb. 2, 1929.

92. *Id.*

93. Acquaviva, *supra* note 88, at 355.

Even though the Holy See now exercises a degree of sovereignty over territory, there is also a contemporary example of a non-territorial sovereign entity engaged in international relations and exerting a sovereign personality: The Sovereign Military Order of Malta (SMOM). In this case, the Sovereign Military Order of Malta arose originally as an extraterritorial hospital established outside of Jerusalem meant to treat Christian pilgrims,[94] with the organization taking on more of a military air during the Crusades in the Middle East.[95] Over time, it had moved from one part of the Mediterranean to another, eventually ending up on the island of Rhodes by the 14th century.[96] By 1520, the Order settled on the island of Malta,[97] where they remained until 1798, when they were ejected from the island by France.[98]

Today, SMOM has its seat of government headquartered in Rome, where it is guaranteed extraterritorial rights.[99] Since arriving in there in 1834, SMOM reverted back to its original mission of charity work and assisting those in times of war and other disasters.[100] In addition, the Order notes that it maintains bilateral relations with over 107 states through accredited diplomatic missions,[101] despite having no sovereign territory of its own. Despite not having any "territory" per se, it maintains that it is made up of over 13,500 Knights, Dames, and Chaplains, along with 80,000 volunteers and 25,000 employees.[102] In addition, while it is not a full member of the United Nations, it does maintain a permanent mission to the United Nations and was granted Observer Status in 1994.[103]

However, while the Holy See and SMOM serve as potential examples of the continuity of "deterritorialized sovereign entities," these examples have certain limitations that may prevent their effective application to the situations faced by threatened island states today. First, while the entities themselves may be sovereign (or consider themselves so), there are practical restrictions as to how they express their sovereignty, particularly with regards to individual persons. For instance, attaining citizenship in either the Holy See or SMOM does not necessarily fit within the traditional notions of how citizenship is determined. Traditionally, one's citizenship is determined by one of two factors, *jus soli* (citizenship

94. Jason J. Kovacs, *The Country above the Hermes Boutique: The International Status of the Sovereign Military Order of Malta*, 11 Dig.: NAT'L ITALIAN AM. B. ASS'N L.J. 27, 29 (2003).

95. *See id.* at 31.

96. Kovacs, *supra* note 94 at 32.

97. *Id.* at 35.

98. *Id.* at 37.

99. *Mission*, ORDER OF MALTA, (last visited Dec. 5, 2017) [https://perma.cc/TY4K-P5AC].

100. Kovacs, *supra* note 94, at 39.

101. *Bilateral Relations*, ORDER OF MALTA, (last visited Dec. 5, 2017) [https://perma.cc/HN2J-RSMH].

102. *Frequently Asked Questions*, ORDER OF MALTA, (last visited Dec. 5, 2017) [https://perma.cc/TWR4-78B3].

103. *About*, PERMANENT OBSERVER MISSION OF THE SOVEREIGN ORDER OF MALTA TO THE UNITED NATIONS, (last visited Dec. 5, 2017). [https://perma.cc/R3KC-SYSQ].

determined by one's place of birth),[104] or *jus sanguinis* (citizenship determined by the nationality of one's parents).[105] For obvious reasons, acquisition of citizenship by these methods are either highly impractical (for the Holy See), or outright impossible (in the case of SMOM).

Despite the challenges of defining citizenship under typical norms, both the Holy See and the SMOM have been able to adapt to the peculiar natures of their sovereignties. The Holy See does maintain a distinct citizenship, which it grants to people in three distinct situations: (1) by residents of the Vatican City State when they are authorized by reason of their office or service, (2) by the persons who have obtained papal authorization to reside in the State, independently of any other conditions, and (3) by the spouses and children of current citizens, who are also residents, of the Vatican City State.[106] Conversely, SMOM does not appear to maintain its own distinct form of citizenship, but it does issue passports in limited cases "the members of the Sovereign Council (the government), to heads and members of its Diplomatic Missions (as well as their consort and minor children), and—with very few exceptions—to senior figures in charge of a special missions within the Order of Malta."[107] However, these passports are only meant to last up to four years and are otherwise limited by the duration of the passport holders' assignment.[108] Therefore, under these limited sets of circumstances, it does appear that some idea of citizenship could be retained by deterritorialized states. However, it should be noted that in the case of the Holy See and SMOM, none of the current citizenship holders and passport holders are not "born" or even "naturalized" into their deterritorialized citizenship. Rather, they join at some later point by virtue of their positions within these sovereign entities without necessarily giving up their previous citizenship.

It is this distinction on citizenship of the Holy See and SMOM where the idea of citizenship within the nation ex-situ becomes somewhat far-fetched. Professor Burkett advances the argument that the benefits of citizenship in the nation ex-situ still provides a valuable "psychosocial benefit" of the perpetuation of culture and lifeways indigenous to endangered states.[109] She contends that even without a physical location, the sense of bonded community will continue to have a multi-generational relevance and strength, and that the nationals of an ex-situ nation can continue to enjoy a shared purpose.[110] However, the existence of a non-

104. *Jus Soli*, MERRIAM-WEBSTER ONLINE LAW DICTIONARY, (last visited, Dec. 7, 2017) [perma.cc/Q6ZE-7JN3].

105. *Jus Sanguinis*, MERRIAM WEBSTER ONLINE LAW DICTIONARY, (last visited, Dec. 7, 2017) [https://perma.cc/AS6T-D43H].

106. *See* Dante Figueroa, *The Current Legislation on Citizenship in the Vatican City State*, LIBRARIANS OF CONGRESS (July 18, 2012) [https://perma.cc/Q8 W3-ULFE]; *see also* Law No. CXXXI of Feb. 22, 2011.

107. ORDER OF MALTA, (last visited Dec. 11, 2017) [https://perma.cc/2J9T-4359].

108. *Id.*

109. *See* Burkett, *supra* note 4, at 89.

110. *Id.* at 116–17.

territorial sovereign entity such as the nation ex-situ is by no means a prerequisite for a group of people to have a shared affinity for a common culture: people still don kilts and play bagpipes even though Scotland has not existed as an independent nation for over 300 years. Furthermore, the idea that a nation's culture can persist through the nation ex-situ in a geographically dispersed diaspora over many generations seems to ignore the possibility that such populations would not intermarry and integrate within a larger community.

Territorial-Based Solutions for Threatened Island States

While the concept of non-territorial statehood is being discussed as a potential solution to the island nations most threatened by climate change, other solutions have taken a different look at the situation. The first and most obvious territorial-based solution for islands is the construction of artificial harbor works and structures to protect the land that makes up an island.[111] This sort of construction can take one of two forms. First, implementation of "hard" defenses, including seawalls, breakwaters, quays, or similar structures. Second, use of "soft" protection measures such as beach nourishment[112] or the artificial elevation of the island from material from the seabed.[113] There are several examples of these activities already being carried out by island states to preserve their territorial integrity.

Perhaps the most ambitious of these types of projects is the undertaking of land reclamation projects on already existing islands, with one of the largest examples being the island of Hulhumalé in the Maldives.[114] This project, which began in 2002, is a planned city meant to address the congestion and housing issues in the capital of Malé.[115] As of 2016, it already has a population of 40,000 residents, but the ultimate goal of Hulhumalé is to eventually accommodate around 240,000 residents, about two-thirds of the entire population of the country.[116] However, such development does not come cheap, as Phase II of the Hulhumalé development (along with a bridge to connect it to the capital) is estimated to cost around US$400 million.[117] However, the costs of the project are expected to be recouped in part from the expansion of electricity generation on the island at lower costs, as well as the savings expected from the lower costs of government service

111. Stoutenburg, *supra* note 48, at 62.

112. Speaking broadly, beach nourishment is the process of establishing and replenishment of beach material to restore an eroded beach and to stabilize it as a restored position. *See* U.S. Army Corps of Engineers Coastal Engineering Research Center, SHORE PROTECTION MANUAL VOLUME I 1–19 (1984).

113. Stoutenburg, *supra* note 48, at 62.

114. *Hulhumalé*, HOUSING DEVELOPMENT CORPORATION, (last visited Dec. 5, 2017) [https://perma.cc/VTW4-R6QS].

115. *Id.*

116. *Id.*

117. *2016 Article IV Consultation—Press Release; Staff Report; and Statement by The Executive Director for Maldives*, INTERNATIONAL MONETARY FUND (May 2016) [https://perma.cc/LX2B-RVMC].

delivery.[118] That being said, many of the expenses of these projects are being financed via loans from foreign countries and organizations.[119]

Despite the risks inherent in seeking out a large number of loans from foreign governments and entities for this infrastructure development, one very important advantage of the construction of harbor works and other shoreline structures is that they preserve the territorial baselines for the purposes of defining a nation's territorial sea under Article 11 of UNCLOS.[120] With regards to other sorts of defensive structures, be it the "hard" or "soft" measures, there may be a general acceptance within international law that these sorts of defensive structures do allow the states constructing them to continue to maintain their territorial seas and EEZs based on such structures, even though they are "artificial" in a strict sense.[121] This tacit acceptance of the ability of states to construct defensive measures on their coastlines to preserve their territorial integrity allows for solutions based on coastal works and land reclamation. These solutions can serve as some of the more feasible forms of protecting an island nation's sovereignty. For example, the land reclamation of Hulhumalé would appear to fall into the category of preserving existing territorial seas and EEZs precisely because it is being done on an already existing island. The same could be said of the other coastal defensive measures being undertaken by Maldives as a part of its "Safer Island Strategy."[122]

Another solution that was once seemingly science fiction has gained traction in recent years, to the point of serious consideration by at least one government in the Pacific region. The creation of floating islands seeks to move away from the potentially negative effects of artificial land reclamation and would instead help preserve local populations by allowing them to remain in roughly the same area. In fact, the government of French Polynesia has already begun to take initial steps

118. *Id.*

119. *See Hefty Loans from Everywhere: All Payable?*, MALDIVES TIMES (Oct. 12, 2017), [https://perma.cc/7ZQP-53U7] (describing foreign investors of Maldives domestic infrastructure, to include the Saudi Fund for Development, Abu Dhabi Fund, OPEC Fund for International Development, as well as loans for the China-Maldives Friendship Bridge project).

120. *See* United Nations Convention on the Law of the Sea, art. 11, 1833 U.N.T.S. 402 (1982).

121. Clive Schofield, *Shifting Limits: Sea Level Rise and Options to Secure Maritime Jurisdictional Claims*, 2009 CARBON & CLIMATE L. REV. 405, 411 (2009), fn. 39. ("Although LOSC Article 60(8) explicitly provides that artificial islands, together with artificial installations and structures 'do not possess the status of islands', 'have no territorial sea of their own', and are excluded from affecting maritime boundary delimitation, *it is generally accepted that a naturally formed feature can be preserved or extended through reclamation works*.") (emphasis added); *see also* Stoutenburg, *supra* note 48, at 62; ("Although there might exist some controversy in extreme cases, where the island would have disappeared were it not for the artificial protection, *it is generally agreed that the artificial protection of naturally formed island territory does not turn an island into an artificial island* in the sense of LOSC Article 60(8).") (emphasis added).

122. Ministry of Environment, Energy and Water, National Adaptation Programme of Action, Republic of the Maldives, UNFCC (2007), [https:// perma.cc/528L-D5QE].

of constructing floating islands in collaboration with the Seasteading Institute by signing a memorandum of understanding with them in January 2017.[123] Under the terms of the Memorandum, the Seasteading Institute will study potential economic and environmental impacts, with the goal of eventually raising funds to construct three solar powered pilot platforms, measuring approximately 50 meters across.[124]

While the idea of floating islands seems attractive at first glance, this solution does run into a series of financial and legal concerns. First, prohibitive cost is an overriding issue. The proposed French Polynesian pilot islands are estimated to cost anywhere from US$10 million to US$50 million.[125] This range puts floating islands potentially out of reach of many of these other island nations, many of which are trying to address rising sea levels through other piecemeal projects in order to protect infrastructure that is already in place.[126] Even for French Polynesia, the shift from natural islands to man-made structures would exact a high price on the nation, as even now, they continue to have billions of dollars in investment in tourist infrastructure on the island of Tahiti.[127]

Furthermore, the prospect of floating islands would do nothing to address the impact of the loss of Exclusive Economic Zones through the submergence of island territory to become low-tide elevations.[128] These floating islands would be unable to adopt the status of territorial islands, as per UNLCOS Article 60(8), which states that "Artificial Islands, installations and structures do not possess the status of islands. They have no territorial seas of their own, and their presence does not affect the delimitation of the territorial sea, the EEZ, or the continental shelf."[129] Therefore, the loss of a nation's EEZ and source of revenue for the future would be irrevocably hampered by the transition from natural islands to artificial islands without amendments to UNCLOS to allow for such a situation, possibly to include a "locking in" of baselines used to measure territorial seas and preserving the territorial seas and EEZs for threatened island nations.[130]

In fact, such an allowance for artificial islands would potentially further threaten the sovereignty and economic vitality of these island states. If a nation

123. Sebastien Malo, *Faced with Rising Seas, French Polynesia Ponders Floating Islands*, THOMSON REUTERS FOUNDATION NEWS (Mar. 20, 2017), [https://perma.cc/X3YG-QLVG].

124. *Id.*

125. *Id.*

126. *See generally* Ministry of Environment, Energy and Water, National Adaptation Programme of Action, Republic of the Maldives, UNFCC (2007), [https://perma.cc/528L-D5QE].

127. *See French Polynesia's Economic Growth Pinned on $2bn Resort*, DATELINE PACIFIC (Dec. 23, 2015), [https://perma.cc/W8KA-WPPB] (discussing Chinese Consortium signing agreement to construct the Mahana Beach Hotel Project on the Island of Tahiti).

128. *See* United Nations Convention on the Law of the Sea, art. 121, Dec. 10, 1982, 1833 U.N.T.S. 403; ("2. Where a low-tide elevation is wholly situated at a distance exceeding the breadth of the territorial sea from the mainland or an island, it has no territorial sea of its own.").

129. United Nations Convention on the Law of the Sea, art. 60(8), Dec. 10, 1982, 1833 U.N.T.S. 420.

130. *See* Rayfuse, *supra* note 5, at 282.

were to lose the outer edges of its territorial seas and EEZs due to the submergence of its outer islands, these waters would revert to the status of high seas (defined in UNCLOS as all parts of the sea not included in the EEZ, in the territorial sea or in the internal waters of a State, or in the archipelagic water of an archipelagic State).[131] Once the status of waters is determined to be "high seas" that gives the right of all states (both coastal and landlocked) the freedom to construct "artificial islands and other installations permitted under international law . . . ."[132] One only has to look to the spate of island-building in the South China Sea in recent years to see the deleterious effect of states constructing artificial islands from other geographic features in order to stake competing claims on resources under UNCLOS.[133] So long as the ephemeral nature of maritime boundaries is allowed to continue under the current regime provided by UNCLOS, such disputes will have the potential to cause further conflict between sovereign states.[134]

The Compact of Free Association as a Model for Preserving of Small Island Sovereignty

The final proposal to address the issues faced by small island states could be described either as a new or an old solution. It is "new" in the sense that it has not been seriously considered as a vehicle for addressing the aforementioned issues faced by small island states as a result of climate change. However, it could also be considered "old" in that this solution draws upon an already existing series of agreements as a basis upon which to build a viable relationship between these threatened nations and larger, more developed nations to provide the necessary funding and other assistance that these nations will require in the years and decades to come. This solution is in the form of the "Compacts of Free Association," currently in force between the United States and three small Pacific island states—the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau.

The political emergence of these states into independent and sovereign entities arose after the Second World War, when these islands were collectively administered by the United States as the Trust Territory of the Pacific Islands

131. United Nations Convention on the Law of the Sea, art. 86(1), Dec. 10, 1982, 1833 U.N.T.S. 432.

132. *Id.*

133. *See generally* Suzanne S. Kimble, *Is China Making Waves in International Waters by Building Artificial Islands in the South China Sea*, 24 TUL. J. INT'L & COMP. L. 263, 289 (2015).

134. *See* Alain Khadem, *Protecting Maritime Zones from the Effects of Sea Level Rise*, IBRU BOUNDARY AND SECURITY BULLETIN 76 (1998) ("Changes (in maritime boundaries) of this magnitude could prove a fertile source of inter-state conflict and spark disputes over navigation rights and more particularly sovereignty rights to living and non-living marine resources.").

(TTPI).[135] The United Nations Charter introduced the concept of trust territories, applying them to former League of Nations Mandates and territories "detached from 'enemy States' as a result of the Second World War" in order to "ensure, with due respect for the culture of the peoples concerned, their political, economic, social, and educational advancement, their just treatment, and their protection against abuses[.]"[136] The TTPI was one of eleven different trust territories around the world placed into this type of administration.[137] This arrangement was meant to be temporary in nature, and by the 1970s, the different districts making up the TTPI began to examine alternatives for future status, but were unable to come to a consensus on any one option.[138] For example, while the Northern Marianas District voted to change their status to a United States Commonwealth in 1975 (becoming the Commonwealth of the Northern Mariana Islands or CNMI), the remaining island groups began negotiations with the United States for their respective future statuses.[139] These negotiations culminated in the Compacts of Free Association, which were approved by the United States Congress in 1984 for the Federated States of Micronesia and Marshall Islands,[140] and approved vis a vis Palau in 1986.[141] In 2004, the parties signed amendments to the Compacts regarding the Marshall Islands and Micronesia.[142]

Several sections of the Compacts of Free Association lend well to adaptation to a future bilateral climate change mitigation agreement.[143] One of the key benefits rendered to the Compact States is the disbursements of aid every year through "Annual Grant Assistance."[144] As of 2017, both the Marshall Islands and Micronesia continue to be recipients of this assistance through their respective

135. *Trust Territory of the Pacific Islands*, ENCYCLOPEDIA BRITANNICA (Dec. 28, 2015), [https://perma.cc/3VZF-3UEJ].

136. U.N. Charter, art. 73(a); *see also International Trusteeship System*, THE UNITED NATIONS AND DECOLONIZATION, UNITED NATIONS (last visited Feb. 24, 2017) [https://perma.cc/HS3R-3FB6].

137. *Trust Territories that have achieved self-determination*, The United Nations and Decolonization, United Nations, http://www.un.org/en/decolonization /its.shtml (last visited Dec. 4, 2017) [https://perma.cc/PD82-W2BU**]**.

138. Chimene Keitner & W. Michael Reisman, *Free Association: The United States Experience*, 39 TEX. INT'L L.J. 1, 36–37 (2003).

139. *Id.*

140. 48 USC § 1901 (subd. (a), as applied to the Federated States of Micronesia, and subd. (b) as applied to the Republic of the Marshall Islands).

141. 48 USC § 1931(a).

142. 48 USC § 1921 (subd. (a), as applied to the Federated States of Micronesia, and subd. (b) as applied to the Republic of the Marshall Islands).

143. For the sake of simplicity, this paper primarily discusses the sections in the Compacts of Free Association between the Republic of the Marshall Islands and the United States and the Federated States of Micronesia and the United States under the Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, while noting equivalent sections of the other compacts where applicable.

144. Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, § 211(a), 117 Stat. 2720, 2809; s*ee also* Act of Nov. 14, 1986, Pub. L. No. 99-658, § 211, 100 Stat. 3672, 3687-88.

Compacts.[145] For Micronesia, the amount of funding available through this annual grant assistance is set on a sliding scale, declining from US$76.2 million in Fiscal Year 2004, to US$62.6 million by Fiscal Year 2023.[146] Conversely, for the Marshall Islands, the amount of funding available under Section 211 of the Compact is set on a sliding scale, decreasing over time from US$35.2 million in Fiscal Year 2004 to US$27.7 million by Fiscal Year 2023.[147] The grant assistance for both nations "shall be used for assistance in education, health care, the environment, public sector capacity building, and private sector development, or for other areas as mutually agreed."[148]

Notably, the compacts stress that with regard to the environmental sector that grant assistance will be made available to "increase environmental protection; establish and manage conservation areas; engage in environmental infrastructure planning, design construction and operation, and to involve the citizens of the Republic of the Marshall Islands in the process of conserving their country's natural resources."[149] However, while the explicit language of the Compacts themselves state that the annual grant assistance is to be prioritized for the education and health care sectors,[150] any future amendments to the compact could both increase the actual amount of money disbursed in the annual grant assistance, along with a redirection of how the funds should best be prioritized. Here, the language of the Compact, specifically with regard to environmental infrastructure planning and the desire to protect the Marshall Islands' natural resources, suggests that increased infrastructure development to protect from sea level rise would help fulfill the goals set forth in the compact. Such protective measures, funded by the grant assistance provisions of Section 211, would not only protect the country's natural resources in terms of the islands themselves, but also help preserve the country's long-term economic viability by helping to preserve sovereignty over the natural resources inherent in the country's EEZ. Given the ability to preserve these resources in the EEZ, further grant funding for Compact states could be seen almost

145. It should be noted that although the financial aid given to Palau via the Compact formally ended in 2009, the United States continues to provide assistance to the country equal to the amounts granted in the previous Compact. *See* Interior Department and Further Continuing Appropriations, Fiscal Year 2010, Pub. L. No 111-88, §122(a), 123 Stat. 2931; *see also* Tanya Harris Joshua, *United States Transmits $7.5 Million In Compact Grant Funding to the Republic of Palau*, U.S. DEPARTMENT OF THE INTERIOR (Feb. 3, 2017), [https://perma.cc/NLK4-T6DE].

146. Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, § 216, 117 Stat. 2720, 2775.

147. *Id.* § 217.

148. *Id.* § 211.

149. *Id.* § 211(a)(5).

150. *Id.* § 211(a).

as an inevitability to maintain their national economies. This is, of course, in lieu of further amendments to UNCLOS allowing for EEZs to be "locked" in place.[151]

While such funding to the Compact States would undoubtedly have to be increased to fully adapt to and mitigate the effects of climate change on their territories, the continued annual funding to the Compact States by the United States since the 1980s provides a compelling precedent to continue such actions, particularly given that such treaties would allow for long-range funding commitments to be clearly defined by treaty. In addition, while the current grant assistance to Micronesia and the Marshall Islands is scheduled to conclude in 2023, there is no reason that further funding could not be secured beyond that year (in some instances, the Compacts contain treaty provisions that continue on well past that year).[152] The existing agreements provide grant assistance to the Compact States with the overarching goal of "[promoting] the economic advancement and budgetary self-reliance of its people, and in recognition of the special relationship that exists between the [Compact States] and the United States."[153] Thus, the prospect of additional assistance to the Compact States for infrastructure developments and other island hardening measures will allow these nations the opportunity to properly adapt to the realities brought about by climate change and sea level rise. This grant assistance would not only recognize the special relationship that exists between the United States and the Compact States, but would also allow the United States to make meaningful contributions to help preserve the sovereign status of several of the states most threatened by climate change. In light of the sheer costs associated with creating and maintaining the infrastructure required for these states to survive climate change, the funding that could potentially be earned via a formalized bilateral agreement cannot be understated.

A further effect of the Compacts of Free Association is in the assistance rendered to these states in terms of defense and other forms of direct assistance given by the United States. Section 311(a) of the Compact of Free Associations with Micronesia and the Marshall Islands obligates the United States to have the authority and responsibility for security and defense matters in or relating to the two countries.[154] Besides the defense assistance offered to these nations, other

151. *See* Rayfuse, *supra* note 5 at 282–83 (discussing a potential feasibility of "locking in" of baselines to establish a permanent Exclusive Economic Zone to prevent EEZ losses brought about by sea level rise).

152. Perhaps one of the best examples of the long-term commitments stretching well past the year 2023 is a Military Use and Operating Rights Agreement (MUORA) between the Marshall Islands and the United States, which among other things, allows U.S. use of Kwajalein Atoll until 2066 (with an option to extend until 2086); *see* Compact of Free Association, Military Use and Operating Rights, U.S.-Marsh. Is., art. X(3), Apr. 30, 2003 T.I.A.S. 04-501 3.

153. Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, § 211(a)(5), 117 Stat. 2720, 2810; *see also* Act of Nov. 14, 1986, Pub. L. No. 99-658, § 211, 100 Stat. 3672, 3687.

154. Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, § 311(a), 117 Stat. 2720, 2781; *see also* Act of Nov. 14, 1986, Pub. L. No. 99-658, § 121, 100 Stat. 3672, 3679.

services offered by the United States government include the services and programs of the U.S. Weather Service, the U.S. Postal Service, the Federal Aviation Administration, the Department of Transportation, the Department of Homeland Security, the U.S. Agency for International Development, and the Office of Foreign Disaster Assistance.[155] Such defense responsibilities and other modes of governmental support can be a valuable asset for these countries, particularly with regards to protection and enforcement of their respective Exclusive Economic Zones. These benefits accrued by the Compact States are both in terms of reducing the burdens of bearing the costs of their own militaries, as well as allowing for the functioning of a relatively efficient, well-developed bureaucracy that many newly independent countries face challenges developing.

One further benefit that the Compacts provide to these nations that could potentially be integrated in future bilateral models is the favorable treatment given to nationals who wish to immigrate to the United States. The Compact allows people from these states to "lawfully engage in occupations, and establish residence as a nonimmigrant in the United States and its territories and possessions" without regard to certain provisions of the Immigration and Nationality Act.[156] Specifically, the Compacts provide this privilege to three categories of nationals from the Compact States: (1) persons who were formerly citizens of the Trust Territory of the Pacific Islands, (2) persons who acquire citizens of one of the Compact States at birth on or after the effective date of their respective constitutions, or (3) immediate relatives of persons in the first and second categories, subject to certain conditions.[157] This relaxation on immigration requirements for the Compact states is done "in furtherance of the special and unique relationship that exists" between the United States and the Compact States.[158] As it relates to the potential for inclusion in future bilateral treaties to address climate change, the language of the compacts could (if amended further) provide an outlet to the issues faced by potential climate refugees who would need to evacuate from their homes due to rising sea levels, and even to immigrate to the U.S. if sea levels threaten to inundate these nations entirely.[159]

However, while the Compacts do provide for a close relationship between the Compact States and the United States, it should be noted what these agreements

155. *Id.* § 221(a)(1-5).

156. *Id.* §141(a).

157. *Id.* §141(a)(1-3).

158. *Id.*

159. It should be noted that while there is the possibility of the compacts allowing for more liberalized immigration to the United States, such discussions tend to fall more into the realm of refugee status and climate change, and beyond the preservation of sovereignty that is the focus of this paper. However, others have commented on the applicability of the Compacts to provide a potential for migration of Compact citizens. *See generally* Briana Dema, *Sea Level Rise and the Freely Associated States: Addressing Environmental Migration under the Compacts of Free Association*, 37 COLUM. J. ENVTL. L. 177, 204 (2012).

do to stress the sovereign and independent nature of the Compact States. This is necessary, particularly in light of the potential criticisms lodged against the arrangement, including the idea that the current Compact of Free Association is a holdover from the colonial age.[160] First, the Compacts explicitly provide that the relationship between the Compact States and the United States are governed by the Vienna Convention on Diplomatic Relations.[161] While the Compacts have the United States provide for the defense of these countries (among the other aforementioned governmental services), it should be noted that the Compacts explicitly bestow upon the Compact States the right to conduct foreign relations and to have "the capacity to enter into, in its own name and right, treaties and other international agreements with governments and regional and international organizations."[162] Indeed, all three countries are represented in their own right at the United Nations as full member states.[163] While the relationships between the United States and the Compact States are undoubtedly much closer than many other forms of bilateral relations, it needs to be stressed that the Compact States can and do maintain their nationhood and sovereign status among the other nations of the world. However, because of the implementation of the Compacts of Free Association, these nations can continue to maintain their independence while getting the support for adaptation measures that they will undoubtedly require in the decades ahead, particularly if the Compacts do end up being amended to account for the new realities faced.

After delving into the possibilities provided for by the Compacts, an obvious question that comes up revolves around the potential obligations that may already exist on the part of the more developed nations to enter into such compacts voluntarily with threatened island nations. In the context of the threat posed by global climate change, it is perhaps more important than ever that the largest historical carbon emitters oblige themselves to assist threatened island states through bilateral structures based on the Compacts of Free Association. While the current obligations of the United States to the Compact States is the product of legislation and is based on a history dating back to the Second World War, there is nothing to suggest that future obligations with respect to island resiliency measures cannot be found under the principles of environmental justice. Considering the vast differential in carbon emissions between a country like the United States and a threatened island nation such as the Marshall Islands,[164] future assistance to

160. *See* Burkett, *supra* note 4, at 118, (describing that the Marshall Islands is "quite dependent on the United States" following German colonization, Japanese administration, and United States trusteeship, despite having sovereign status currently).

161. Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, § 151, 117 Stat. 2720, 2764.

162. Compact of Free Association Amendments Act of 2003, Pub. L. No 108-188, § 121(c), 117 Stat. 2720, 2759; *see also* Act of Nov. 14, 1986, Pub. L. No. 99-658, § 312, 100 Stat. 3672, 3695.

163. *See Member States*, UNITED NATIONS, (last visited Dec. 4, 2017) http://edgar.jrc.ec.europa.eu/booklet2017/CO2_and_GHG_emissions_of_all_world_countries_booklet_online.pdf [https://perma.cc/Y27E-FSHU].

164. As a point of comparison, while the Republic of Kiribati emitted approximately 0.053 million tonnes of carbon dioxide in 2016, the United States emitted approximately

threatened island nations serves to remedy the most deleterious aspects of much of the industrialized world's carbon and greenhouse gas emissions, particularly in its effects on other nations.

As a final note, it cannot be stressed enough that other developed nations besides the United States can and should seek to alleviate the effects of their carbon emissions on some of the most vulnerable nations through similar efforts.[165] Considering the threat posed by climate change on all nations, the institution of Compact-like agreements can provide a means for the most developed and industrialized nations to assist in the protection of the most threatened nations. While the main focus of this discussion has revolved around the relationship between the Compact States and the United States, that is not to say that these are the only countries which can use these types of agreements to address the issues of rising sea levels. Besides the establishment of Compact-type treaties between developed nations and threatened island states based on historical and current carbon emissions, such treaties can also arise out of historical links not unlike the relationships between the United States and the Compact States. Other countries with long-standing bilateral relationships with threatened island states can formulate similar agreements. Some countries already have "free association" type relationships, such as between the Cook Islands[166] and Niue[167] with New Zealand. In the future, the basis for these types of treaties can come from other links based on shared language, culture, or historical relations. The most expansive example could be the Commonwealth of Nations, composed of nations that were British colonies at one point, including some of the countries already discussed such as Tuvalu,[168] Kiribati,[169] and Maldives.[170] While the Compacts of Free Association as they stand need not be the model which all threatened island nations use to help preserve their chances of survival, the idea of bilateral agreements established and strengthened through already existing links can help facilitate the development of similar agreements where none currently exist as of this time.

5011.687 million tonnes of carbon dioxide, an amount approximately 94,650(!) times greater. *See* Janssens-Maenhout, G., et al., *Fossil CO2 and GHG Emissions of All World Countries*, EUR 28766 EN 120, 217 (2017), [https://perma.cc/4RLP-GVE6].

165. In 2016, China, the United States, the 28-member European Union, India, Russia, and Japan accounted for 51% of the world's population, but 68% of global CO2 emissions and about 65% of total global greenhouse gases. *Id.* at 3.

166. *Cook Islands*, THE WORLD FACTBOOK, (Dec. 14, 2017), [https://perma.c c/CB3D-E89B].

167. *Niue*, THE WORLD FACTBOOK, (Dec. 14, 2017), [https://perma.cc/N8E9-UR6S].

168. *Tuvalu*, THE WORLD FACTBOOK, (Dec. 14, 2017), [https://perma.cc/PQ6P-R46D].

169. *Kiribati*, THE WORLD FACTBOOK, (Nov. 10, 2017), [https://perma.cc/H9LZ-YCLM].

170. *Maldives*, THE WORLD FACTBOOK, (Nov. 10, 2017), [https://perma.cc/LBJ8-F5PH].

Conclusion

While the issue of climate change and rising sea levels is an issue that requires the attention of all nations, the need for action is perhaps most urgent among the small island states which face total submersion of their territories. Several ideas have been advanced as potential means of preserving the sovereignty of island states threatened by climate change, but none come across as the ideal solution without a compromise on cost, territorial preservation, cultural preservation, or ease of implementation. However, on the balance, bilateral treaties based upon the model provided by the Compacts of Free Association provide one possibility that is worthy of further study. While it is by no means the single solution to address the issues of threatened sovereignty, the compacts do provide a structure that can be emulated by other island states—and in the case of the three Compact States, amended to address the threats currently faced. These treaties can provide a model in which several competing interests find compromise, including the preservation of small island states' sovereignty and territoriality, the preservation of the local societies and cultures present in these island nations, and the prospects of preserving their national economic health. Namely, it is the ability to directly impact island states to preserve their territoriality through the support and obligations imposed on larger nations. The support of these nations can arise out of an increasing sense of obligation to smaller states in light of their historical carbon emissions, and specifically of the moral responsibility of larger nations to assist island nations in developing their infrastructure to survive the existential threat of sea level rise. If such treaties could be enacted along with other solutions being discussed, such as a recalibration of Exclusive Economic Zones, such solutions can address many of the existential concerns faced by these nations. Compacts of Free Association-type treaties, while they cannot address all the issues brought about by climate change, do provide a measured, actionable response to the questions posed by these threats, and can provide one more answer to these larger questions of state sovereignty during these unprecedented times.