

## ***Legal Measures to Address the Impacts of Climate Change-induced Sea Level Rise on Pacific Statehood, Sovereignty and Exclusive Economic Zones***

KYA RAINA LAL\*

*Historically, states have ceased to exist due to conflict, conquest or politics. However, the 21st century is witnessing an additional force capable of redrawing world maps entirely. Climate change and climate change-induced sea level rise will radically alter coastlines and international boundaries; displace millions of people; and, as we are now witnessing, inundate entire islands to the point of extinction. In the Pacific, a region of 22 self-governing nations and 10.5 million people, many low-lying islands and coastal areas are facing the very real possibility of losing their coasts — threatening their very existence. For the most part, issues of displaced peoples and the environmental, economic and security implications of climate change dominate the climate change discourse. This article instead focuses on the legal impacts and implications that sea level rise will have on the existence of Pacific Island statehood, sovereignty and maritime territories. Under contemporary legal frameworks, Pacific peoples face a double harm where climate change deprives them of their land and international law deprives them of their seas. Therefore, this article will examine what sinking islands mean in law, and what they mean for Pacific peoples, their recognition in law and their claim to land and sea territories. This article draws on international law, including the United Nations Law of the Sea Convention, the doctrine of historic waters and regional customary international law.*

### **I INTRODUCTION**

Historically, states have ceased to exist due to conflict, conquest or politics, leading to maps and borders being reshaped and redrawn.<sup>1</sup> Geographically, however, a state has not physically ceased to exist, save for the “fabled state

---

\* BA in Pacific Studies, LLB, LLM (First Class Hons) in Environmental Law, University of Auckland. The author currently practises as a Barrister and Solicitor in the Republic of Fiji.

1 Rosemary Rayfuse “International Law and Disappearing States: Utilising Maritime Entitlements to Overcome the Statehood Dilemma” (2010) <[www.law.unsw.edu.au](http://www.law.unsw.edu.au)> at 1.

of Atlantis”.<sup>2</sup> This may be about to change. Climate change-induced rises in sea levels are radically altering coastlines, redrawing our maps and causing the Pacific Islands to sink.<sup>3</sup> Sea level rise is not a new phenomenon; oceans have risen and fallen for millions of years.<sup>4</sup> Yet with the advent of anthropogenic climate change, sea levels are rising at rates never witnessed before. Scientific modelling suggests that a sea level rise of at least one metre by the end of the century is not unlikely.<sup>5</sup> For the Pacific — a region of 22 self-governing nations<sup>6</sup> with over 10 million people<sup>7</sup> and many low-lying islands and coastal areas — climate change-induced sea level rise is a serious concern — one that threatens their very existence.<sup>8</sup>

The climate change discourse has predominantly focused on displacement,<sup>9</sup> and the environmental, economic and security implications of climate change.<sup>10</sup> In contrast, this article will examine the legal impacts of climate change-induced sea level rise on continued Pacific statehood, sovereignty and claim to maritime territories.<sup>11</sup> Part II introduces these legal impacts. Part III discusses the current international law framework and the double harm it creates in respect of the Pacific Islands: climate change deprives the Islands of their *land*, while international law deprives them of their *seas*.<sup>12</sup> Part IV explores how this double harm might be prevented. The article concludes that coping with this novel legal dilemma requires current international law frameworks to undergo considerable change.<sup>13</sup> It requires a shift from a system that “strives for consistency, universality, and predictability” to one that is flexible, responsive and able to examine issues on a case-by-case basis.<sup>14</sup>

---

2 At 1.

3 At 1.

4 Rosemary Rayfuse “Sea Level Rise and Maritime Zones: Preserving the Maritime Entitlement of ‘Disappearing’ States” in Michael B Gerrard and Gregory E Wannier (eds) *Threatened Island Nations: Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, New York, 2013) 167 at 167.

5 Marcel JF Stive, Roshanka Ranasinghe and Peter J Cowell “Sea Level Rise and Coastal Erosion” in Young C Kim (ed) *Handbook of Coastal and Ocean Engineering* (World Scientific, Singapore, 2010) 1023 at 1023.

6 See Joeli Veitayaki “Staking Their Claims: The Management of Marine Resources in the Exclusive Economic Zones of the Pacific Islands” in Syma A Ebbin, Alf Håkon Hoel and Are K Sydnnes (eds) *A Sea Change: The Exclusive Economic Zone and Governance Institutions for Living Marine Resources* (Springer, The Netherlands, 2005) 150 at 150.

7 Faafetai Sopoaga and others “The role of New Zealand health professional training institutions in capacity building in the Pacific region” (2015) 128(1420) NZMJ 6 at 6.

8 Rayfuse, above n 1, at 1.

9 See *AD (Tuvalu)* [2014] NZIPT 501370-371; *AF (Kiribati)* [2013] NZIPT 800413; and *Teitiota v Chief Executive of the Ministry of Business Innovation and Employment* [2013] NZHC 3125, [2014] NZAR 162.

10 Achim Maas and Alexander Carius “Territorial Integrity and Sovereignty: Climate Change and Security in the Pacific and Beyond” in Jürgen Scheffran and others (eds) *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability* (Springer, Berlin, 2012) 651.

11 See Rayfuse, above n 1.

12 Lilian Yamamoto and Miguel Esteban *Atoll Island States and International Law: Climate Change Displacement and Sovereignty* (Springer, Heidelberg, 2014) at 140.

13 Maxine Burkett “The Nation *Ex-Situ*: On climate change, deterritorialized nationhood and the post-climate era” (2011) 2 *Climate Law* 345 at 345.

14 At 347.

## II THE IMPACTS OF CLIMATE CHANGE ON THE PACIFIC

### What is Climate Change?

Climate change is a ubiquitous term in academic literature and day-to-day life. The Earth is warmed and made habitable<sup>15</sup> for human life through a complicated interaction of processes, which together have regulated the Earth's temperatures.<sup>16</sup> These natural processes — which help to regulate the Earth's temperature — produce greenhouse gases (GHGs)<sup>17</sup> such as methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>).<sup>18</sup> These gases act like an atmospheric blanket, preventing heat from escaping the atmosphere and keeping the planet warm.<sup>19</sup> Historically, higher levels of GHGs were stored in natural carbon sinks: the oceans, soils and forests.<sup>20</sup> However, in the last few hundred years our society has gone through a period of industrialisation, reliance on fossil fuels and agricultural dominance, resulting in the rampant and unprecedented production of GHG emissions into our atmosphere.<sup>21</sup> Due to these excessive emissions, our planetary sinks are no longer able to store these excess GHGs.<sup>22</sup> Consequently, excess GHGs remain in the atmosphere, trapping more and more heat.<sup>23</sup> This heat accumulates over time, and causes world temperatures to steadily climb. We call this climate change. However, the climate change causing the negative climate impacts we see today is human-induced and human-driven, and so we call it *anthropogenically-driven* climate change.<sup>24</sup>

The direct correlation between climate change and sea level rise is undeniable and occurs in two ways. First, the rise in temperature causes glaciers and polar ice caps to melt, releasing stored water and causing global water levels to rise through a basic volume increase.<sup>25</sup> Secondly, as

- 
- 15 Nicholas Stern *The Economics of Climate Change: The Stern Review* (Cambridge University Press, Cambridge, 2007) at 9.
- 16 See generally Thomas F Stocker and others *Climate Change 2013: The Physical Science Basis — Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, New York, 2013) at 124.
- 17 Stocker and others, above n 16, at 1455. See the definition of “Greenhouse gas” [GHG].
- 18 The six key GHGs often focused on are: methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>). See generally the Kyoto Protocol to the United Nations Framework Convention on Climate Change 2303 UNTS 162 (opened for signature 16 March 1998, entered into force 16 February 2005). See also David Archer and Stefan Rahmstorf *The Climate Crisis: An Introductory Guide to Climate Change* (Cambridge University Press, Cambridge, 2010) at 21–32; and Stocker and others, above n 16, at 121.
- 19 *Climate Change in the Pacific* (World Wildlife Foundation South Pacific Programme, Fiji, 2003) at 4.
- 20 See Stern, above n 15, at 14.
- 21 Stern, above n 15, at 4–5.
- 22 Stern, above n 15, at 12–14.
- 23 James G Titus and others “Greenhouse Effect and Sea Level Rise: The Cost of Holding Back the Sea” (1991) 19 *Coastal Management* 171 at 172.
- 24 United Nations Framework Convention on Climate Change 1771 UNTS 107 (opened for signature 20 June 1992, entered into force 21 March 1994), art 1(2).
- 25 Titus and others, above n 23, at 173. See also John Connell and Matakite Maata *Environmental Planning, Climate Change and Potential Sea Level Rise: Report on a Mission to the Republic of the Marshall Islands* (South Pacific Regional Environment Programme, 1992) at 53; and Tony

temperatures increase, water levels rise by the thermal expansion of oceans.<sup>26</sup> Together, these two processes result in overall eustatic changes.<sup>27</sup>

The Paris Agreement attempted to limit anthropogenic temperature increases to well below 2°C above pre-industrial levels and make a concerted effort to limit temperature increases to well below 1.5°C above pre-industrial levels.<sup>28</sup> However, it is likely that our current global emissions have already taken us past this threshold. Some models suggest a likely temperature rise of 2°C to 5°C.<sup>29</sup> The World Bank suggests a 40 per cent likelihood of a 4°C rise and 10 per cent possibility of a 5°C rise by the year 2100.<sup>30</sup> And others — such as Jay Gulledge<sup>31</sup> and J Kamphuis<sup>32</sup> — argue for increases in the range of 1.3°C to 5.6°C and 0.2 m to 2 m by the year 2100. In line with the Intergovernmental Panel on Climate Change (IPCC) reports, sea levels are projected to rise anywhere from 0.18 m to 0.79 m, with a 0.2 m allowance for uncertainty.<sup>33</sup> However, Marcel Stive, Roshanka Ranasinghe and Peter Cowell suggest that IPCC models have potentially underestimated sea level rise over the past decade and a rise of 1.4 m by 2100 is not unlikely.<sup>34</sup> At their worst, emissions could result in the rate of sea level rise being up to five times the present rate.<sup>35</sup> This rate of sea level rise would be compounded by the longevity of GHGs, meaning that GHGs will remain in the planet's atmosphere long after emissions have been stabilised.<sup>36</sup> As a result, climate change and sea level rise are likely to continue for centuries to come.

---

George Puthucherril “Adapting to Climate Change and Accelerated Sea-level Rise through Integrated Coastal Zone Management Laws: A Study of the South Asian Experience” (2012) 26 *Ocean Yearbook* 533 at 533–534.

26 Titus and others, above n 23, at 174. See also Connell and Maata, above n 25, at 53; and Puthucherril, above n 25, at 533–534.

27 Titus and others, above n 23, at 173. See also Connell and Maata, above n 25, at 53; and Puthucherril, above n 25, at 533–534.

28 Paris Agreement 55 ILM 743 (opened for signature 22 April 2016, entered into force 4 November 2016), art 2(1)(a). The Agreement was adopted by the United Nations Framework Convention on Climate Change, decision 1/CP.21, in *Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015* FCCC/CP/2015/10/Add1 (2016).

29 See Mike Berners-Lee and Duncan Clark *The Burning Question: We can't burn half the world's oil, coal and gas. So how do we quit?* (Profile Books, London, 2013) at 22–23.

30 Potsdam Institute for Climate Impact Research and Climate Analytics *Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience* (The World Bank, Washington DC, June 2013) at xv.

31 Jay Gulledge “Three Plausible Scenarios of Future Climate Change” in Kurt M Campbell (ed) *Climatic Cataclysm: The Foreign Policy and National Security Implications of Climate Change* (Brookings Institution Press, Washington DC, 2008) 49 at 56.

32 J William Kamphuis *Introduction to Coastal Engineering and Management* (2nd ed, World Scientific, Singapore, 2010) at 181.

33 Marcel JF Stive, Roshanka Ranasinghe and Peter J Cowell “Sea Level Rise and Coastal Erosion” in Young C Kim (ed) *Handbook of Coastal and Ocean Engineering* (World Scientific, Singapore, 2010) 1023 at 1023.

34 At 1023.

35 Kamphuis, above n 32, at 181.

36 Klaus Bosselmann, Jenny Fuller and Jim Salinger *Climate Change in New Zealand: Scientific and Legal Assessments* (New Zealand Centre for Environmental Law, Auckland, 2002) at 20. See also Patrick Nunn and Eric Waddell *Implications of Climate Change and Sea Level Rise for the Kingdom of Tonga* (South Pacific Regional Environment Programme, Apia (Samoa), December 1992) at 16.

## Impacts on the Pacific

The Pacific Islands “consist of 22 self-governing nations”,<sup>37</sup> which are spread over 30,000,000 km<sup>2</sup> of ocean<sup>38</sup> and include nearly 30,000 islands.<sup>39</sup> Of these, only 1,000 islands are inhabited.<sup>40</sup> Land contributes around 500,000 km<sup>2</sup> of the region’s total area,<sup>41</sup> with the largest of the countries and territories, Papua New Guinea, comprising 83 per cent of this.<sup>42</sup> Eighty-four per cent of the region’s population is spread between Papua New Guinea, Fiji, the Solomon Islands, New Caledonia and Vanuatu.<sup>43</sup> Estimates suggest that more than half of all Pacific populations live within 1.5 km of a shoreline.<sup>44</sup> In places like Samoa, 70 per cent of churches and 60 per cent of schools are located on the coast.<sup>45</sup> In Fiji, 50 per cent of the population lives within 60 km of shore and 90 per cent of villages are located on the coast.<sup>46</sup> These coastal concentrations make the Pacific Islands extremely vulnerable to climate change.<sup>47</sup> The geographical coastal clustering of infrastructure, economies and human habitat exacerbates the issue.<sup>48</sup>

Geography is arguably the factor that makes the Pacific Islands the world’s most vulnerable region to climate change and subsequent sea level rise. Low-lying atoll nations like Tuvalu (1.83 m above sea level), Kiribati (1.98 m above sea level) and the Marshall Islands (2.13 m above sea level) are often in the spotlight for this issue.<sup>49</sup> Sea level rise of 1 m would mean that Kiribati loses 12.5 per cent (or one-eighth) of its total land.<sup>50</sup> Majuro, an atoll in the Marshall Islands, would lose 80 per cent of its land mass.<sup>51</sup> Palau is already facing a 20 cm sea level rise by 2030.<sup>52</sup> Other Pacific countries are set to see an increase in extreme weather events and a sea level rise of

---

37 Veitayaki, above n 6, at 150.

38 Veitayaki, above n 6, at 151.

39 Hannah Reid, Andrew Simms and Victoria Johnson *Up in smoke? Asia and the Pacific: The threat from climate change to human development and the environment — The fifth report from the Working Group on Climate Change and Development* (New Economics Foundation, November 2007) at 82.

40 At 82.

41 Veitayaki, above n 6, at 151.

42 At 151.

43 At 151.

44 *The Economics of Climate Change: In the Pacific* (Asian Development Bank, Philippines, 2013) at 4–5.

45 *Climate Change in the Pacific*, above n 19, at 3.

46 At 3.

47 See John C Pernetta “Impacts of climate change and sea-level rise on small island states: National and international responses” (1992) 2 *Global Environmental Change* 19 at 24.

48 Kamphuis, above n 32, at 181. See also Puthucherril, above n 25, at 533.

49 William CG Burns “The Impact of Climate Change on Pacific Island Developing Countries in the 21<sup>st</sup> Century” in Alexander Gillespie and William CG Burns (eds) *Climate Change in the South Pacific: Impacts and Responses in Australia, New Zealand, and Small Island States* (Kluwer Academic Publishers, The Netherlands, 2000) 233 at 235.

50 At 235.

51 At 235.

52 Graham Sem and Yvonne Underhill *Implications of Climate Change and Sea Level Rise for the Republic of Palau: Report of a Preparatory Mission* (South Pacific Regional Environment Programme, March 1994) at 18.

between one and two metres by 2100.<sup>53</sup> For many low-lying atolls and archipelagos, there is no higher land to which people can escape.<sup>54</sup>

Presently, the majority of Pacific nations can be characterised as facing high population growth, urban drift, a breakdown of traditional ways of life, aid and remittance dependence, and dependence on goods and services importation.<sup>55</sup> These trends are set against a background of competing traditional lifestyles and once-dominant self-sufficient subsistence economies. Most Pacific countries have limited land space and human and financial resources, with fishing, tourism and agriculture dominating their economies.<sup>56</sup> These sectors are highly sensitive to climate change.<sup>57</sup> The Pacific's vulnerability to climate impacts is heightened by high ratios of coastline-to-land area, high population densities and minimal resources with which to adapt to climate change and sea level rise.<sup>58</sup>

Pacific sea level rise is already contributing to the regression of coastlines through coastal erosion.<sup>59</sup> Additionally, the increase in the intensity and frequency of extreme weather events results in new or accelerated coastal erosion and extensive coastal inundation. It also increases the landward reach of waves, storm surges and greater tidal encroachment of sea water into estuaries and coastal river systems.<sup>60</sup> Consequently, whole islands are flooded or submerged for considerable periods during weather events. Moreover, climate-exacerbated weather events have long lasting impacts even after they have passed. Changes in rivers and estuaries can also turn island coasts into breeding grounds for water-borne diseases,<sup>61</sup> threatening mangrove forests and fish stocks.<sup>62</sup>

Sea level rise and the encroachment of salt water into islands has already had devastating impacts on groundwater and potable water supplies.<sup>63</sup> Many Pacific islands lack sufficient surface water, instead relying on either rain or ground water supplies.<sup>64</sup> Higher temperatures lead to greater

---

53 Columbia Law School "Consolidated Notes from Threatened Island Nations: Legal Implications of Rising Seas and a Changing Climate" (23–25 May 2011) <www.law.columbia.edu> at 4.

54 Peter Roy and John Connell "Greenhouse": *The Impact of Sea Level Rise on Low Coral Islands in the South Pacific* (Research Institute for Asia and the Pacific, Occasional Paper No 6, Australia, 1989) at 1.

55 Joeli Veitayaki, Pio Manoa and Alan Resture "Pacific Islands and the Problems of Sea Level Rise Due to Climate Change" in *Proceedings of International Symposium on Islands and Oceans* (Ocean Policy Research Foundation, Japan, 2009) 55 at 56. See also Jon Barnett and W Neil Adger "Climate Dangers and Atoll Countries" (2003) 61 *Climate Change* 321 at 322.

56 *Climate Change in the Pacific*, above n 19, at 3.

57 Diane McFadzien "Views from the Pacific" (9 February 2013) United Nations Framework Convention on Climate Change <unfccc.int>.

58 Barnett and Adger, above n 55, at 323.

59 Moritaka Hayashi "Sea Level Rise and the Law of the Sea: Legal and Policy Options" in *Proceedings of International Symposium on Islands and Oceans* (Ocean Policy Research Foundation, Japan, 2009) 78 at 81.

60 John E Hay and others *Climate Variability and Change and Sea-level Rise in the Pacific Islands Region: A Resource Book for Policy and Decision Makers, Educators and other Stakeholders* (Secretariat of the Pacific Regional Environment Programme, Samoa, 2003) iii at 36.

61 Hay and others, above n 60, at 36; and Reid, Simms and Johnson, above n 39, at 82.

62 See Reid, Simms and Johnson, above n 39, at 82.

63 Nunn and Waddell, above n 36, at 29.

64 McFadzien, above n 57.

evaporation rates, thereby reducing freshwater.<sup>65</sup> Storm surges and sea level rise cause fresh water lenses to become contaminated by salt water, rendering them unusable.<sup>66</sup> Even the smallest amount of coastal erosion reduces the size of an island and the groundwater lenses beneath it.<sup>67</sup> Across the Pacific, people are already cultivating most suitable land for food and economic purposes.<sup>68</sup> Water security also threatens vegetation growth, agriculture, food security, livestock and sanitation.<sup>69</sup> Prolonged exposure to salinated water kills plants,<sup>70</sup> which, in turn, reduces supplies of housebuilding materials, matting, canoes, firewood, fishing implements and plant-based medicines.<sup>71</sup> As vegetation begins to die off, islands begin to lose their ability to grow “upwards”, thereby reducing the islands’ *freeboard* (height above mean sea level).<sup>72</sup> Coupled with frequent land development activities — such as sand and coral mining, mangrove harvesting, rerouting of estuaries and rivers and land reclamation<sup>73</sup> — this could render islands completely uninhabitable.<sup>74</sup> These impacts can also exacerbate (and be exacerbated by) health<sup>75</sup> and waste management<sup>76</sup> issues on these islands.

Infrastructure — such as sea walls, wharves, ports and roads — will suffer continual inundation and damage from sea level rise and climate change.<sup>77</sup> This will affect a country’s ability to trade and communicate with the rest of the world.<sup>78</sup> Moreover, some infrastructure may in fact worsen the impacts of climate change and sea level rise. For example, seawalls built to prevent erosion can impede an island’s natural ability to cope with sea level rise.<sup>79</sup> Ongoing damage to infrastructure could undermine the confidence of foreign investment in these countries.<sup>80</sup> And this is likely to result in an overreliance on remittances from families living abroad to survive.<sup>81</sup> Such overreliance is concerning when estimates show that the Pacific region will

---

65 Maas and Carius, above n 10, at 655.

66 Hay and others, above n 60, at 33.

67 Connell and Maata, above n 25, at 40.

68 Hay and others, above n 60, at vi.

69 McFadzien, above n 57.

70 Hay and others, above n 60, at 33.

71 Marjorie Sullivan and Lionel Gibson *Environmental Planning, Climate Change and Potential Sea Level Rise: Report on a Mission to Kiribati* (South Pacific Regional Environment Programme, January 1991) at 8. See also Reid, Simms and Johnson, above n 39, at 82.

72 Connell and Maata, above n 25, at 40.

73 Puthucherril, above n 25, at 535.

74 *The Economics of Climate Change: In the Pacific*, above n 44, at 9.

75 Burns, above n 49, at 244. See also Hay and others, above n 60, at vi; McFadzien, above n 57; and Karl Mathiesen ““They say that in 30 years maybe Kiribati will disappear”” *The Guardian* (online ed, United Kingdom, 4 December 2014).

76 Sem and Underhill, above n 52, at 21. See also Sullivan and Gibson, above n 71, at 16.

77 Sullivan and Gibson, above n 71, at 27.

78 World Meteorological Organisation “Small-island States and Low-lying Coastal Areas Especially Vulnerable to Climate, Global Warming, and Sea-level Changes” (1993) 20 *Environmental Conservation* 364 at 365.

79 Briar March *There Once Was an Island: Te Henua e Nnoho* (New Day Films, New Zealand, 2010) at 28:20–28:50.

80 Barnett and Adger, above n 55, at 329.

81 Maas and Carius, above n 10, at 653.

require, on average, USD 447 million annually until 2050 to adapt to the worst-case scenario of climate impacts.<sup>82</sup>

The long-term impacts of climate change and sea level rise are the most devastating: the loss of an entire island through partial or complete inundation. This is no longer a hypothetical in the Pacific. The Tebua Tarawa and Abanuea islands *sank* in the 1990s.<sup>83</sup> Some islands, such as atolls in the Carteret Islands, have begun to divide as water slowly overwhelms them.<sup>84</sup> In 1989, the Commonwealth Secretariat recognised that “even a small increase in sea level could result in proportionately large land losses since typically [an island’s] circumference is very large in relation to [its] existing land area.”<sup>85</sup>

But Pacific peoples face not only the loss of their homes. They also face the prospect of losing their exclusive economic zones (EEZs). The radical alteration and subsequent uncertainty of ocean borders provide fertile grounds for international conflict.<sup>86</sup>

### III THE CURRENT INTERNATIONAL LAW REGIME: SOVEREIGNTY, STATEHOOD AND EXCLUSIVE ECONOMIC ZONES

For a long time the world has functioned through its division into geopolitical units, which we call *states*.<sup>87</sup> This division allows states to claim sovereignty and generate maritime territory and EEZs.<sup>88</sup> The state is the central actor in international law.<sup>89</sup> Yet there is no single authoritative definition of what a state actually is.<sup>90</sup> The most widely accepted criteria for a state can be found in the Convention on the Rights and Duties of States (Montevideo Convention).<sup>91</sup> Article 1 outlines that the criteria requires: a permanent population; a defined territory; government; and the capacity to enter into relations with other states.<sup>92</sup> Historic changes to our geopolitical

---

82 *The Economics of Climate Change: In the Pacific*, above n 44, at xii.

83 Alex Kirby “Islands disappear under rising seas” *BBC News* (online ed, United Kingdom, 14 June 1999).

84 Marissa S Knodel “Wet Feet Marching: Climate Justice and Sustainable Development for Climate Displaced Nations in the South Pacific” (2012) 14 *Vt J Envtl L* 127 at 133.

85 Martin W Holdgate *Climate Change: Meeting the Challenge* (Commonwealth Secretariat, London, 1989) at 72 as cited in Roger McLean and Ana Maria d’Aubert *Implications of Climate Change and Sea Level Rise for Tokelau: Report of a Preparatory Mission* (South Pacific Regional Environment Programme, March 1993) at 1.

86 See generally Choon-ho Park “The South China Sea Disputes: Who Owns the Islands and the Natural Resources?” (1978) 5 *Ocean Development and International Law* 27. See also Maas and Carius, above n 10.

87 Rayfuse, above n 4, at 167.

88 At 167.

89 Derek Wong “Sovereignty Sunk? The Position of ‘Sinking States’ At International Law” (2013) 14 *MJIL* 346 at 347.

90 At 352.

91 Thomas D Grant “Defining Statehood: The Montevideo Convention and its Discontents” (1999) 37 *Colum J Transnatl L* 403 at 403.

92 Convention on Rights and Duties of States 165 *LNTS* 19 (signed 26 December 1933, entered into force 26 December 1934) [Montevideo Convention], art 1.



maps show that states live and die.<sup>93</sup> However, they have never ceased to exist because of sea level rise due to a global anthropogenic phenomenon. Therefore, international law must become more flexible in its interpretation of *state*. States were never meant to be immortal,<sup>94</sup> but neither were they meant to sink below the ocean.

### The Criterion of Statehood and Sovereignty

Under the Montevideo Convention, the first criterion of statehood is a *permanent population*.<sup>95</sup> Jane McAdam argues that a “permanent population” simply means that a nation’s population cannot be a transitory one.<sup>96</sup>

The population also needs to be sufficiently large to meet the *population threshold* for statehood.<sup>97</sup> But international law fails to define the threshold — there is no magic number. The Vatican, with a caretaker population, meets the population threshold for statehood.<sup>98</sup> Pitcairn Island is also recognised as a state, despite its population of approximately 50 people.<sup>99</sup> International law has yet to test whether a group smaller than 50 would meet the Montevideo Convention’s population threshold.<sup>100</sup> If so, Pacific nations rendered uninhabitable could possibly meet the population criterion with 50 or fewer people remaining on the island and the rest as diaspora population. Jenny Grote Stoutenburg calls this a “population nucleus” and believes it would create a “legal anchor”, allowing endangered Pacific nations to meet the population criterion and continue to have their statehood recognised.<sup>101</sup> However, German courts have raised an important qualification to the population criterion: a group of people living together, calling themselves a community, is not sufficient.<sup>102</sup> There must be the characteristics of communal life — though there is no clear indication of what amounts to communal life.<sup>103</sup>

The second Montevideo Convention criterion in art 1 is a *defined territory*. Rising sea levels could considerably reduce a defined territory or destroy it altogether.<sup>104</sup> International law assumes that territory is the key

---

93 Wong, above n 89, at 359.

94 At 361–362.

95 Montevideo Convention, art 1.

96 Jane McAdam “‘Disappearing States’, Statelessness and the Boundaries of International Law” (2010) 2 UNSWLRS 1 at 8.

97 At 8.

98 Columbia Law School, above n 53, at 5.

99 Columbia Law School, above n 53, at 5.

100 Jenny Grote Stoutenburg “When do States Disappear? Thresholds of Effective Statehood and the Continued Recognition of ‘Deterritorialized’ Island States” in Michael B Gerrard and Gregory E Wannier (eds) *Threatened Island Nations: Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, New York, 2013) 57 at 63.

101 At 65.

102 At 64.

103 At 64. Part IV of this article discusses models through which Pacific nations could continue to meet the population criterion of statehood.

104 Jenny Grote Stoutenburg “Implementing a New Regime of Stable Maritime Zones to Ensure the (Economic) Survival of Small Island States Threatened by Sea-Level Rise” (2011) 26 International Journal of Marine and Coastal Law 263 at 268.

formulaic element of statehood.<sup>105</sup> However, Pacific states that are made up *solely* of low-lying atolls or small islands with low-lying coasts could be significantly impacted by this criterion. As I previously discussed, climate change and sea level rise will decrease Pacific territory through coastal erosion and inundation. Again, there is no minimum amount of territory specified to meet the territory threshold — provided some territory remains, Pacific nations should continue to satisfy this criterion.<sup>106</sup> McAdam agrees that the loss of some territory should not affect a Pacific island's legal status as a state.<sup>107</sup> However, as I will examine later, loss of even some territory may be an impediment for Pacific nations to retain control of their EEZs or generate them.

The territory criterion does not require borders to be perfectly defined.<sup>108</sup> This is especially important because sea level rise will continue to redraw state borders. Derek Wong explains that Albania, Burundi, Estonia, Israel, Kuwait, Latvia, Rwanda and Zaire were all admitted to the League of Nations or the United Nations (UN) despite their poorly-defined borders.<sup>109</sup> Thus, Pacific nations could retain their territories even if their boundaries constantly change. Furthermore, as I discuss later in respect of governments in exile, a government does not even need to be within its territory to retain statehood.<sup>110</sup> Wong's interpretation of James Crawford and Thomas Grant is that an entity should have some form of territory, but that this requirement should be applied in a flexible manner.<sup>111</sup> Wong reiterates this sentiment: “[t]erritory does not have to be defined with absolute certainty ... [there merely needs to] be a territorial base from which to operate.”<sup>112</sup> The flexible territory interpretation should be favoured as a means for Pacific nations to retain as much control as possible over their lands and surrounding sea territory despite sea level rise. It also lends credibility to Rosemary Rayfuse and Maxine Burkett's deterritorialised state option, which is a way to maintain statehood even without land. I explore this further in Part IV.

The final two criteria in art 1 are a *government* and the *capacity to enter into relations with other states*. Of the four criteria, these two are considered the least rigorous. Historically, numerous states have retained their statehood, despite failing to meet these requirements. In the Pacific, Papua New Guinea, the Solomon Islands and Fiji never ceased to be states during times of civil unrest for lack of effective government.<sup>113</sup> Having a government or the ability to enter foreign relations is sometimes described as

---

105 Davor Vidas “Sea-Level Rise and International Law: At the Convergence of Two Epochs” (2014) 4 *Climate Law* 70 at 78.

106 McAdam, above n 96, at 7. See also Stoutenburg, above n 100, at 60.

107 McAdam, above n 96, at 7.

108 Wong, above n 89, at 355.

109 At 355.

110 McAdam, above n 96, at 7.

111 Wong, above n 89, at 354.

112 At 354.

113 See generally John Henderson and Greg Watson (eds) *Securing a Peaceful Pacific* (Canterbury University Press, New Zealand, 2005).

a country's capacity for self-determination or sovereignty.<sup>114</sup> Selma Oliver argues that self-determination can only be fulfilled within the boundaries of a nation's territory.<sup>115</sup> However, as we have seen, territory can be deemed a flexible requirement and nations with exiled governments or internal conflicts can still retain their statehood. Crawford proposes that the requirements of government and the ability to enter foreign relations are less stringent than Oliver suggests. On Crawford's view, there only needs to be "the actual exercise of authority" and "the right or title to exercise that authority".<sup>116</sup> This is more persuasive than Oliver's argument, which is undermined by the recognition of states that lack both a permanent population and territory.<sup>117</sup> In light of the endangerment of Pacific states, we must acknowledge that there is a "strong presumption" within international law that "favors the continuity and disfavors the extinction of an established State".<sup>118</sup> This would warrant creative interpretation of the law to ensure state continuity, especially in novel situations such as climate change-induced sea level rise.<sup>119</sup> Climate change and sea level rise may justify a departure from — and revision of — aspects of the legal status quo, including the definition of a state.<sup>120</sup> Many states are recognised as such, despite not satisfying all four criteria of statehood.<sup>121</sup> The Montevideo Convention criteria seem to more closely resemble a set of guidelines rather than stringent requirements. Therefore, the present legal regime has a degree of flexibility. As long as either the *population* criterion or the *defined territory* criterion remained<sup>122</sup> — or if we took a flexible interpretation of them<sup>123</sup> — statehood and sovereignty of endangered Pacific states would continue, even under the impacts of climate change and sea level rise. Thus far, academics, politicians and the media have largely focused on how much Pacific nations stand to lose in the form of their lands, livelihoods and land-based resources. However, this view fails to realise that Pacific nations face a greater risk — losing rights to their surrounding ocean territory.<sup>124</sup>

---

114 In this article *self-determination* and *sovereignty* will be used interchangeably.

115 Selma Oliver "A New Challenge to International Law: The Disappearance of the Entire Territory of a State" (2009) 16 *International Journal on Minority and Group Rights* 209.

116 James Crawford *The Creation of States in International Law* (2nd ed, Oxford University Press, Oxford, 2006) at 57.

117 For instance, the Sovereign Military Hospitaller Order of St John of Jerusalem, of Rhodes and of Malta [SMOM]. Maxine A Burkett "The Nation Ex-Situ" in Michael B Gerrard and Gregory E Wannier (eds) *Threatened Island Nations: Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, New York, 2013) 89 at 97.

118 At 94. See also Burkett, above n 13, at 362.

119 Burkett, above n 117, at 94–95.

120 At 95.

121 McAdam, above n 96, at 6.

122 See Ineta Ziemele "States, Extinction of" in R Wolfrum (ed) *The Max Planck Encyclopedia of Public International Law* (online ed, Oxford University Press, May 2007) at [3]. I interpret Ziemele to suggest that only the loss of *population* or *defined territory* — that is, non-fulfilment of either or both of the first two criteria — automatically affect the legal existence of a state.

123 Burkett, above n 13, at 354.

124 Latif Nasser "When island nations drown, who owns their seas?" *The Boston Globe* (online ed, Boston, 19 October 2014).

## How Does a State Generate Exclusive Economic Zones?

The United Nations Convention on the Law of the Sea (UNCLOS)<sup>125</sup> is the “constitution of the oceans”.<sup>126</sup> The main purpose of UNCLOS was to help stabilise ocean governance in order to “contribute to the strengthening of peace, security, cooperation and friendly relations among all nations”.<sup>127</sup> Climate change and sea level rise now threaten that purpose — particularly the provisions that help implement maritime territories. These provisions were not written at a time when climate change and sea level rise were considered relevant issues. As a result, we now have a modern regime that is facilitating the instability and threatened existence of these zones. In the Pacific, the loss of EEZs is unfathomable because Pacific nations are essentially “gigantic ocean states with a patch of land in the middle”.<sup>128</sup> Land comprises approximately 0.001 per cent of Pacific nations’ EEZs,<sup>129</sup> with an atoll sized 1 km<sup>2</sup> generating an EEZ of up to 325,000 km<sup>2</sup>.<sup>130</sup> In total, 95 per cent of Pacific territory is ocean.<sup>131</sup>

Under international law, coastal states may claim a territorial sea extending 12 nautical miles, over which they have sovereignty.<sup>132</sup> But, interestingly, UNCLOS does not mandate that a state establish a territorial sea of 12 nautical miles. Rather, it mandates that a territorial sea — if a state chooses to establish one — cannot exceed 12 nautical miles measured from the baseline.<sup>133</sup>

In any case, practice is fast becoming uniform, with many countries claiming a territorial sea of 12 nautical miles.<sup>134</sup> States can also claim a contiguous zone of 24 nautical miles, in which they “exercise the control necessary to prevent or punish infringement of customs, fiscal, [and] immigration” laws in this area.<sup>135</sup> The next area generated is the EEZ, which is arguably the most important.<sup>136</sup> A coastal state has its own rights to an EEZ, which falls under its jurisdiction, granting sovereignty over all living or non-living natural resources in the waters and seabed of the EEZ, while other nations have rights to freedoms of navigation and overflight.<sup>137</sup> An

---

125 United Nations Convention on the Law of the Sea 1833 UNTS 3 (opened for signature 10 December 1982, entered into force 16 November 1994) [UNCLOS].

126 Donald R Rothwell and Tim Stephens *The International Law of the Sea* (2nd ed, Hart Publishing, Oxford, 2016) at 1.

127 José Luís Jesus “Rocks, New-born Islands, Sea Level Rise and Maritime Space” in Jochen Abraham Frowein and others (eds) *Verhandeln für den Frieden: Negotiating for Peace* (Springer, Berlin, 2003) 579 as cited in Stoutenburg, above n 104, at 271.

128 Nasser, above n 124.

129 Pernetta, above n 47, at 19.

130 At 19.

131 Maas and Carius, above n 10, at 657.

132 David D Caron “When Law Makes Climate Change Worse: Rethinking the Law of Baselines in Light of a Rising Sea Level” (1990) 17 *Ecology LQ* 621 at 632.

133 Lawrence Juda “The Exclusive Economic Zone: Compatibility of National Claims and the UN Convention on the Law of the Sea” (1986) 16 *Ocean Development and International Law* 1 at 9.

134 At 9.

135 Caron, above n 132, at 632.

136 At 632.

137 At 632.

EEZ may not exceed an area of 200 nautical miles from the baseline,<sup>138</sup> which equates to a distance of approximately 370 km.<sup>139</sup> These areas are extremely large and valuable for Pacific nations. For example, tuna fishing “in the domain of Pacific island nations” has an estimated worth of US\$4 billion per year.<sup>140</sup> As of 2009, 102 nations have claimed either an EEZ or an exclusive fishery zone.<sup>141</sup> Finally, in some cases, countries can claim a continental shelf extending 350 nautical miles.<sup>142</sup>

This regime has only been in place for about 20 years.<sup>143</sup> To determine the limits of the zones, each zone is measured from a single line along a state’s coast called a *baseline*.<sup>144</sup> A baseline is the low-water mark where the land and sea meet.<sup>145</sup> There are two types of baselines used to measure these limits: normal baselines and straight baselines.<sup>146</sup> Normal baselines are the predominant measurement and are measured from the low-water mark.<sup>147</sup> In some instances, low-tide elevations less than 12 nautical miles from land will generate their own territorial sea and can be used as a baseline from which to measure ocean territory.<sup>148</sup> In the case of atolls or islands, the seaward low-water mark of fringing reefs can be used as baselines.<sup>149</sup>

Straight baselines, however, cannot be drawn from low-tide elevations unless a lighthouse or similar installation sits there permanently above sea level.<sup>150</sup> The only exceptions are where these elevations are generally recognised or where the coastline is highly unstable due to naturally occurring phenomena.<sup>151</sup> Straight baselines connect appropriate fixed geographical points. They are usually used in places where the coast is deeply indented or cut into — or where there is a fringe of islands along the

---

138 At 632.

139 AHA Soons “The Effects of a Rising Sea Level on Maritime Limits and Boundaries” (1990) 37 NILR 207 at 213.

140 See Nasser, above n 124.

141 Barbara Kwiatkowska “Creeping Jurisdiction Beyond 200 Miles in the Light of the 1982 Law of the Sea Convention and State Practice” (1991) 22 *Ocean Development and International Law* 153 at 153.

142 David D Caron “Climate Change, Sea Level Rise and the Coming Uncertainty in Oceanic Boundaries: A Proposal to Avoid Conflict” in Seoung-Yong Hong and Jon M Van Dyke (eds) *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Martinus Nijhoff Publishers, Leiden (Netherlands), 2009) 1 at 3; and Rayfuse, above n 4, at 170.

143 UNCLOS opened for signature in 1982, but only became effective in 1994. Division for Ocean Affairs and the Law of the Sea, Office of Legal Affairs, United Nations “United Nations Convention on the Law of the Sea of 10 December 1982: Overview and full text” (4 May 2017) <www.un.org>.

144 See Clive Schofield “Against a Rising Tide: Ambulatory Baselines and Shifting Maritime Limits in the Face of Sea Level Rise” in *Proceedings of International Symposium on Islands and Oceans* (Ocean Policy Research Foundation, Japan, 2009) 70 at 71. See also Caron, above n 142, at 2.

145 Schofield, above n 144, at 71.

146 At 73–74.

147 Clive Schofield “Departures from the Coast: Trends in the Application of Territorial Sea Baselines under the Law of the Sea Convention” (2012) 27 *The International Journal of Marine and Coastal Law* 723 at 724.

148 Rayfuse, above n 4, at 171.

149 Soons, above n 139, at 210.

150 At 211.

151 At 211.

coast.<sup>152</sup> Archipelagic states are allowed to draw straight archipelagic baselines to join the outermost points of their “outermost islands and drying reefs”.<sup>153</sup> This is so, provided that the area within the baselines includes the main islands and the ratio of water to land is no more than 9:1.<sup>154</sup> Moreover, the length of these baselines cannot exceed 100 nautical miles.<sup>155</sup> Fiji, the Marshall Islands and Kiribati each claim archipelagic status and, therefore, are entitled to use these archipelagic baselines.<sup>156</sup>

Articles 7(2) and 76(9) of UNCLOS provide that states can freeze in place straight baselines along unstable coastlines and continental shelves, respectively — and once frozen they cannot move.<sup>157</sup> These are the only two features that UNCLOS explicitly provides can be *frozen*. Other articles in UNCLOS that determine territories or boundaries are silent on whether the territories or boundaries are frozen. Based on a textual interpretation, Lewis Alexander,<sup>158</sup> David Caron<sup>159</sup> and AHA Soons<sup>160</sup> conclude that the outer boundaries of the territorial sea, contiguous zone and EEZ are then ambulatory — they are not fixed.<sup>161</sup> Consequently, as sea levels rise, low-water marks will recede landward and low-tide elevations or fringing reefs will recede or be washed over.<sup>162</sup> As these markers move landward or disappear completely, their ocean territory will be affected accordingly. Thus, if the baseline recedes, so will the boundary; and if the baseline disappears, so will the territory.<sup>163</sup> For archipelagic states, losing a single island could mean losing a straight baseline. This is especially concerning where the island is at the archipelago’s outermost tip.<sup>164</sup> Indeed, it would result in a significant reduction in the ocean territory archipelagic states could claim. Soons estimates that, depending on the layout of the island, loss of ocean territory due to baseline regression could be anywhere from 1,500 km<sup>2</sup> to 431,000 km<sup>2</sup>.<sup>165</sup>

### **How Does Climate Change Impact Statehood, Sovereignty and Exclusive Economic Zones?**

Pacific states face losing some, if not all, of their ocean territory as coasts and baselines recede or disappear altogether.<sup>166</sup> Existing laws do not offer an

---

152 At 210.

153 At 211.

154 At 211.

155 At 211.

156 At 211.

157 Rayfuse, above n 4, at 172.

158 Lewis M Alexander “Baseline Delimitations and Maritime Boundaries” (1983) 23 Va J Intl L 503 at 535 as cited in Rayfuse, above n 1, at 3.

159 Caron, above n 132, at 634 as cited in Rayfuse, above n 1, at 3.

160 Soons, above n 139, at 216 as cited in Rayfuse, above n 1, at 3.

161 Rayfuse, above n 1, at 3.

162 Caron, above n 132, at 634.

163 Caron, above n 142, at 9.

164 Yamamoto and Esteban, above n 12, at 130.

165 Soons, above n 139, at 217–218.

166 Vidas, above n 105, at 74–75.

adequate solution to this problem.<sup>167</sup> Instead, ambulatory baselines threaten to undermine the stability and certainty of maritime law.<sup>168</sup> In particular, they threaten to undermine the purpose of creating an EEZ — that is, to ensure that coastal fishing communities can rely on local fisheries for their livelihood and development.<sup>169</sup> The notion that states have dominion over their slices of the sea was founded on the principle that the “land dominates the sea”.<sup>170</sup> But what happens if this changes?

### *1 Scenario One: Barren Rock*

As sea levels continue to rise and coastal regression continues to erode islands, islands face the distinctive possibility of being reduced to mere rocks. Under art 121(1) of UNCLOS “[a]n island is a naturally formed area of land, surrounded by water, which is above water at high tide.”<sup>171</sup> And under art 121(2), an island can generate maritime territory.<sup>172</sup> However, an island will be reduced to a rock under art 121(3) if it cannot sustain human habitation or an economic life of its own. As a result, a rock will have no claim to an EEZ or continental shelf.<sup>173</sup> However, it may still be able to generate internal waters and a territorial sea. This is of significant concern for Pacific states because, while a rock cannot generate an EEZ, a small island can. Schofield demonstrates the difference: an island with no neighbours within 400 nautical miles can generate 125,664 square nautical miles (about 431,014 km<sup>2</sup>) of territorial sea, EEZ and continental shelf,<sup>174</sup> however, a rock — which cannot generate an EEZ or continental shelf — can only claim a territorial sea of 452 square nautical miles (1,550 km<sup>2</sup>).<sup>175</sup> The implication is significant, not only for the ability to control ocean territory, but also for the very existence of ocean territory. Substantial recession could result in islands being rendered uninhabitable long before they sink.<sup>176</sup> We have already seen this happen with the Carteret and Mortlock Islands in Papua New Guinea.<sup>177</sup> Although the islands are still visible, they are now essentially uninhabitable.<sup>178</sup>

---

167 International Law Association *Final Report of the International Committee on Baselines under the International Law of the Sea* (Resolution No 1/2012, August 2012) at 31 as cited in Vidas, above n 105, at 75.

168 See Schofield, above n 144, at 76. See also Hayashi, above n 59, at 78.

169 Stoutenburg, above n 104, at 272.

170 Vidas, above n 105, at 74.

171 UNCLOS, art 121(1).

172 Robert Lavalley “Not Quite a Sure Thing: The Maritime Areas of Rocks and Low-Tide Elevations Under the UN Law of the Sea Convention” (2004) 19 *The International Journal of Marine and Coastal Law* 43 at 43–44.

173 At 44; and Rayfuse, above n 1, at 3.

174 Clive Schofield “The Trouble with Islands: The Definition and Role of Islands and Rocks in Maritime Boundary Delimitation” in Seoung-Yong Hong and Jon M Van Dyke (eds) *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Martinus Nijhoff Publishers, Leiden (Netherlands), 2009) 19 at 21.

175 At 21.

176 McAdam, above n 96, at 4.

177 See generally Jennifer Redfearn *Sun Come Up* (Red Antelope Films, New York, 2010); and March, above n 79.

178 See generally Redfearn, above n 177; and March, above n 79.

An important, yet ambiguous, criterion that distinguishes the legal classification of an island from a barren rock is the “economic life of its own” requirement.<sup>179</sup> Pacific states could lose their independence and statehood if they became solely reliant on aid for survival. This could happen where rising seas encroach into islands to such an extent that fresh water becomes salinated, causing crops to die off. Would the resulting reliance on aid mean that islands no longer have an economic life of their own? Under the Montevideo Convention, having a rock still means having territory and statehood — albeit reduced ocean territories — under both strict and flexible interpretations. Moreover, there is no *one* definition for “economic life of its own” — leaving “significant scope for different interpretations”.<sup>180</sup> As it stands, many Pacific nations already rely on aid and remittances for survival.<sup>181</sup> Additionally, many goods — including energy, processed foods, raw materials and manufactured goods — are imported.<sup>182</sup> With these factors already in place, it makes sense to view the “economic life of its own” requirement as a flexible one.

The Rockall precedent, however, provides some guidance on what meets the criteria of a barren rock in international law.<sup>183</sup> Rockall was a large rock outcrop that the United Kingdom claimed. The claim was subsequently withdrawn because the rock did not meet the test of habitation and economic life.<sup>184</sup> In withdrawing the claim, the United Kingdom lost 60,000 square nautical miles of fishing territory.<sup>185</sup> Considering the significant area that Pacific states have to lose, it is very unlikely they would ever consider withdrawing a claim to barren rocks that were former islands. Moreover, in *Volga (Russian Federation v Australia)*, Judge Budislav Vukas held that the reason EEZs were created was to grant fishing communities — reliant on sea resources — control over those resources.<sup>186</sup> The situation in which we now find ourselves is novel. To stop recognising Pacific territory due to sea level rise, using archaic and ambiguous criteria, would directly interfere with Pacific states’ economic independence.

## 2 Scenario Two: Total Submergence

The other potential scenario for Pacific states is total submergence. Under a strict reading of art 121 of UNCLOS, an island would lose all claims to

---

179 Lavalley, above n 172, at 44.

180 Alex G Oude Elferink “Clarifying Article 121(3) of the Law of the Sea Convention: The Limits Set by the Nature of International Legal Processes” (1998) 6(2) *Boundary & Security Bulletin* 58 at 59. See also Yamamoto and Esteban, above n 12, at 170; and Jon M Van Dyke, Joseph R Morgan and Jonathan Gurish “The Exclusive Economic Zone of the Northwestern Hawaii Islands: When Do Uninhabited Islands Generate and EEZ?” (1988) 25 *San Diego L Rev* 425 at 428.

181 Yamamoto and Esteban, above n 12, at 179.

182 See James Mak *Pacific Island Economies* (Centre for Pacific Islands Studies, University of Hawai‘i at Mānoa, January 2001) at 29.

183 See Schofield, above n 174, at 28–29.

184 At 28–29.

185 At 29.

186 *Volga (Russian Federation v Australia) (Prompt Release, Judgment)* (2002) 42 *ILM* 159 at [6] as cited in Schofield, above n 174, at 29. This did not extend to uninhabited islands where no fishing communities existed.



ocean territory if its land territory was to become completely submerged.<sup>187</sup> Therefore, if a state loses all of its land it also loses all of its seas.<sup>188</sup> Hypothetically, once a state becomes fully submerged, its ocean territory would revert to the high seas or be claimed as a territory by neighbouring states less than 200 nautical miles away.<sup>189</sup> But a strict reading is unlikely, particularly considering the demand for greater flexibility in accordance with the principle of state continuity. We must consider then whether there is any way both the land and ocean territories could be saved.

#### **IV PREVENTING A DOUBLE HARM: LEGAL SOLUTIONS TO CLIMATE HARMS ON STATEHOOD, SOVEREIGNTY AND EXCLUSIVE ECONOMIC ZONES**

The current legal framework is underprepared to deal with climate change and rising sea levels — let alone the possible extinction of entire countries.<sup>190</sup> We are faced with a novel legal predicament that threatens to undermine the current framework’s “consistency, universality, and predictability”.<sup>191</sup> Furthermore, the uncertainty caused by shifting international boundaries may foster international conflict.<sup>192</sup> Statehood and sovereignty must be increasingly examined and addressed in law in a flexible way in order to deal with the novel nature of rising sea levels. This part of the article attempts to provide solutions for Pacific peoples to retain control of their lands and EEZs within the current legal framework.

##### **Building Sovereignty: Lighthouses and Artificial Islands**

Two options to address the impacts of sea level rise and *build* sovereignty include building lighthouses<sup>193</sup> and artificial islands.<sup>194</sup>

The first option is known as the lighthouse scenario.<sup>195</sup> Under this model, a lighthouse — or similar structure — would be built and used as a sovereignty marker over the territory in question.<sup>196</sup> Lilian Yamamoto and Miguel Esteban believe this could be used in an attempt to prevent islands being reduced to barren rock. However, they consider that its effectiveness would probably be limited, partly because it is unclear whether inhabitants would meet both the population threshold and generate an “economic life of

---

187 UNCLOS, art 121.

188 Soons, above n 139, at 230.

189 At 230.

190 Maxine Burkett *In Search of Refuge: Pacific Islands, Climate-Induced Migration, and the Legal Frontier* (East-West Center, AsiaPacific Issues No 98, January 2011) at 2.

191 At 2.

192 Yamamoto and Esteban, above n 12, at 123.

193 At 155.

194 At 167.

195 At 155.

196 Lilian Yamamoto and Miguel Esteban “Vanishing Island States and Sovereignty” (2010) 53 *Ocean and Coastal Management* 1 at 6.

its own”, as required under art 121.<sup>197</sup> Achim Maas and Alexander Carius believe that this “economic life of its own” criterion could be met if these structures housed small populations — possibly meeting the criteria for statehood.<sup>198</sup> McAdam extends this model even further, arguing that nations like Kiribati could retain statehood and control over their EEZ by building government outposts on their highest points of land.<sup>199</sup> This may be an option for Kiribati — which has high ground on Banaba Island above sea level<sup>200</sup> — but countries like Tuvalu and Tokelau are not so fortunate. Moritaka Hayashi suggests that these installations could then be used to measure immovable straight baselines, as I explore later in the article.<sup>201</sup> Yamamoto and Esteban also suggest building homes and infrastructure on pylons to sit above encroaching waters.<sup>202</sup> However, these structures would be deemed artificial once the land they sit on becomes submerged.<sup>203</sup> This is confirmed in art 121(1), which states that all islands must be naturally formed. The distinction is between maintaining rights and creating new ones.<sup>204</sup>

It should be noted that some are strongly in favour of artificially conserving baselines.<sup>205</sup> Soons believes that land should not lose its status as a point on a baseline (a base point) even if the natural feature is no longer visible above water.<sup>206</sup>

Artificial island preservation is an option Kiribati is considering.<sup>207</sup> However, on Soons’ interpretation, art 60(8) of UNCLOS deems completely-submerged land masses that are only visible through artificial means to be artificial islands.<sup>208</sup> A possible way to circumvent this artificial-natural dichotomy is by amending UNCLOS to accept artificial islands.

Traditionally, there has been a negative perception of artificial islands. This is predominantly because they are not recognised within international law as an area that can generate EEZs or maritime territory claims.<sup>209</sup> In any case, this has not stopped countries — such as China in the South China Sea — from attempting to use artificial islands as a means to extend claims into areas traditionally held by Japan and other neighbouring countries.<sup>210</sup> Numerous countries — of which the United States is one —

---

197 Yamamoto and Esteban, above n 12, at 155.

198 Maas and Carius, above n 10, at 659.

199 McAdam, above n 96, at 19–20.

200 At 19–20.

201 Hayashi, above n 59, at 79.

202 Yamamoto and Esteban, above n 12, at 157.

203 At 158.

204 Stoutenburg, above n 100, at 62.

205 See for example Soons, above n 139, at 222.

206 At 219.

207 “Kiribati looks to artificial islands to save nation from rising sea levels” *Australian Broadcasting Corporation* (online ed, Sydney, 17 February 2016).

208 Soons, above n 139, at 222.

209 UNCLOS, art 60(8).

210 In a recent high profile dispute, numerous countries have objected to China’s use of artificial means to extend its limits into the South China Sea. See for example Everett Rosenfeld “Sweeping ruling against China will have lasting impact globally” (12 July 2016) CNBC <[www.cnbc.com](http://www.cnbc.com)>; and “Why is the South China Sea contentious?” (12 July 2016) BBC News <[www.bbc.com](http://www.bbc.com)>.

have objected to China's use of artificial means to extend its limits into the South China Sea.<sup>211</sup> The United States' stance on artificial islands could negatively impact proposals to amend UNCLOS to accept artificial islands.

Furthermore, as with the situation in the South China Sea, extending recognition to artificial islands could cause conflict<sup>212</sup> — particularly if we were to also extend recognition and capacity to generate territory to these structures. However, if we fail to extend recognition in the case of countries such as Kiribati (if they were to turn to artificial islands) then these countries find themselves in the same position where they run the risk of losing both their land and maritime territories.

Alternatively, there is a loophole in the artificial-natural dichotomy: artificially raising part of an island would not cause that island to be classified as artificial.<sup>213</sup> Islands are often raised — for example, for port construction.<sup>214</sup> This method could help Pacific islands, even if it had to be labelled as *port works*.<sup>215</sup> However, extreme measures like this must be undertaken carefully — artificial conservation of islands may cause more harm than good. Stoutenburg highlights how hard defences — such as sea walls — protect the high-water mark, but cause the low-water mark to be eroded.<sup>216</sup> Moreover, rising sea levels would continue to erode the island on the seaward side of the wall.<sup>217</sup> Yamamoto and Esteban recognise that artificial island reinforcement may be limited by physical and economic costs,<sup>218</sup> meaning that countries may have to choose which islands to protect. For Funafuti, Tuvalu's capital, it is estimated that 54 km of sea defences would be needed to protect approximately 2.5 km<sup>2</sup> of land.<sup>219</sup> Furthermore, sea walls for the Marshall Islands would cost an estimated US\$100 million — a significant cost considering the Marshall Islands' annual gross domestic product is approximately \$80 million.<sup>220</sup> Therefore, artificial conservation is not always a viable option.

## Baselines and Boundaries

Having examined options for building sovereignty, this article turns now to consider how Pacific states can maintain their territories. Four options are proposed as being available: freezing maritime boundaries; delimiting boundaries; invoking the doctrine of historic waters; and complete inactivity. I will discuss each in turn.

---

211 “US warns Beijing on South China Sea islands” (3 June 2017) BBC News <www.bbc.com>.

212 Yamamoto and Esteban, above n 12, at 149.

213 At 163.

214 At 163.

215 At 163.

216 Stoutenburg, above n 104, at 277.

217 At 277.

218 Yamamoto and Esteban, above n 12, at 165.

219 Jörgen Ödalen “Underwater Self-determination: Sea-level Rise and Deterritorialized Small Island States” (2014) 17 *Ethics, Policy & Environment* 225 at 228.

220 Burns, above n 49, at 236.

## 1 Freezing Maritime Zones

Freezing the limits of marine territories is one of the oldest options to combat the impacts of sea level rise on Pacific Ocean zones. The certainty of the current legal framework will be undermined if land features recede or disappear completely.<sup>221</sup> Fixing maritime boundaries would preserve these ocean areas<sup>222</sup> and the rights that Pacific nations have to them. Some scholars contend that freezing maritime limits is a “just” means of maintaining UNCLOS’ purported objective of stable, certain and fair ocean governance.<sup>223</sup> Both Hayashi<sup>224</sup> and Rayfuse<sup>225</sup> agree that freezing limits would ensure no country is deprived of its ocean territory as coastlines recede.<sup>226</sup> Moreover, Judge José Luis Jesus of the International Tribunal for the Law of the Sea (ITLOS) firmly advocates for baselines being permanent once implemented, irrespective of any changes such as sea level rise.<sup>227</sup> Another benefit of freezing maritime zones is that states will be unable to claim more ocean territory than that to which they are entitled — thereby avoiding international conflicts.<sup>228</sup>

While there is consensus on freezing maritime limits, there is no consensus on which limits should be frozen. There are two dominant options: freezing baselines; or freezing the outer limits of the territory. There are problems with both options. If we froze the baseline, the seaward marine zone would be fixed but the state’s internal waters would increase as the land territory reduced due to sea level rise.<sup>229</sup> If we froze the external limits, the baseline would continuously shift and the internal waters would shrink along with the land.<sup>230</sup> On balance, both Caron<sup>231</sup> and Soons<sup>232</sup> strongly advocate for freezing the outer maritime limits. However, shifting would occur under both options, and so I venture that it is best to stabilise both the internal and outer limits.<sup>233</sup> Also, neither option accounts for what would happen if the land is rendered a barren rock or completely submerged — how would Pacific nations then control their ocean territory? As discussed above, the current legal framework provides coastal or island states with the ability to freeze the outer limits of continental shelves<sup>234</sup> and unstable coastline such as at a river delta.<sup>235</sup> The respective provisions can be used as precedents for freezing both the inner and outer maritime limits.<sup>236</sup>

---

221 Caron, above n 132, at 644.

222 Hayashi, above n 59, at 83.

223 Burkett, above n 13, at 362.

224 Hayashi, above n 59, at 83.

225 Columbia Law School “Consolidated Notes from Threatened Island Nations”, above n 53, at 7.

226 Caron, above n 132, at 648.

227 Jesus, above n 127, at 602–603 as cited in Rayfuse, above n 1, at 5.

228 Hayashi, above n 59, at 76.

229 Stoutenburg, above n 104, at 275.

230 At 275.

231 Caron, above n 132, at 642–650 as cited in Rayfuse, above n 1, at 6–7.

232 Soons, above n 139, at 225 as cited in Rayfuse, above n 1, at 5–6.

233 Stoutenburg, above n 104, at 276.

234 See UNCLOS, art 76(9). See also Stoutenburg, above n 104, at 270.

235 See UNCLOS, art 7(2).

236 Stoutenburg, above n 104, at 269.

The final consideration is temporal: from what point in time should these limits be frozen? Caron argues that they should be frozen on presently accepted baselines.<sup>237</sup> Alternatively, Rayfuse argues that baselines could be frozen from the date UNCLOS entered into force, or from when the first cartographic charts were deposited with the Secretary-General.<sup>238</sup> As it stands, there is no “technical impediment to the fixing of maritime boundaries”.<sup>239</sup> But before these boundaries can be frozen, states must publish their own boundary limits and correct domestic legislation accordingly.<sup>240</sup> The Cook Islands, Fiji, the Federated States of Micronesia, Kiribati, the Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu all have the same model of domestic maritime zone legislation.<sup>241</sup> The models were all prepared by the Commonwealth Secretariat in the 1970s.<sup>242</sup> These countries use a combination of archipelagic and normal baselines.<sup>243</sup> The major issue is that these baselines are all inscribed in these nations’ domestic legislation. So, as the baselines shift these nations will lose their ocean territory, not because of international law, but because of domestic law.<sup>244</sup> Fiji, Papua New Guinea, the Solomon Islands and Vanuatu have all declared and published archipelagic baselines;<sup>245</sup> Nauru has declared base points. Kiribati claims the status of an archipelagic state; and the remaining countries have not published their baselines.<sup>246</sup> Pacific states must publish their relevant boundary information and, more importantly, amend their domestic legislation.

## 2 *Delimiting Boundaries*

Boundary delimitation is not a new practice in international law — but here we would be using it to reinforce Pacific states’ claims over their EEZs.<sup>247</sup> Marine delimitation involves the settlement of internal waters, territorial seas, continental shelves, EEZs and other areas of “functional jurisdiction” between two countries.<sup>248</sup> There are an estimated 427 maritime boundaries, of which 168 (about 39 per cent) have been delimited,<sup>249</sup> and 45 are in the Pacific.<sup>250</sup> Vidas highlights that maritime delimitation disputes are increasing due to an extremely incomplete “maritime political map”.<sup>251</sup>

---

237 Caron, above n 132, at 641.

238 Rayfuse, above n 1, at 6.

239 Caron, above n 132, at 645.

240 Rayfuse, above n 4, at 184–185.

241 At 183.

242 At 183.

243 At 183–184.

244 At 184.

245 At 184.

246 At 184.

247 Schofield, above n 174, at 30.

248 Vidas, above n 105, at 76.

249 Schofield, above n 174, at 31.

250 Veitayaki, Manoa and Resture, above n 55, at 60.

251 Vidas, above n 105, at 76.

Article 15 of UNCLOS provides that boundary delimitation should be achieved using the equidistance principle.<sup>252</sup> This is the same approach that international courts and tribunals take for delimitation.<sup>253</sup> There is also an increasing shift towards bilateral treaties to delimit boundaries. In international law a treaty may be voided where a fundamental change in circumstance occurs<sup>254</sup> — such as sea level rise — except where the treaty establishes state boundaries.<sup>255</sup> This exemption can be found in art 62(2)(a) of the Vienna Convention on the Law of Treaties.<sup>256</sup> State parties cannot unilaterally terminate or modify maritime delimitation agreements on the grounds of a fundamental change in circumstance, such as sea level rise.<sup>257</sup> Thus, these boundaries are effectively locked in place.

However, there is a major issue with using boundary delimitation as a mechanism to protect Pacific states' ocean territory from sea level rise: delimitation assumes states are less than 400 nautical miles from each other.<sup>258</sup> There are a number of places in the Pacific where countries are more than 400 nautical miles from their nearest neighbour. These countries are, therefore, unable to delimit their boundaries and stabilise outer limits, potentially leaving gaps in this model.<sup>259</sup>

### 3 *Invoking the Doctrine of Historic Waters*

Pacific nations may also retain control of their EEZs by invoking the doctrine of historic waters. Soons proposes that Pacific states would be justified in invoking the doctrine for the continued exercise of their sovereign rights and control of their sea areas.<sup>260</sup> Historic waters are areas of ocean where coastal states are recognised as having exercised sovereignty without interruption for a considerable period of time.<sup>261</sup> Soons posits that, in the context of sea level rise, nations might be claiming sea areas — such as territorial seas or EEZs — that are not historic waters in the traditional sense.<sup>262</sup> Rather, this would create a new category of historic waters.<sup>263</sup> He argues that invoking this new category could require a state to continue to exercise control over the area concerned as soon as baselines begin to recede

---

252 UNCLOS, art 15. “Where the coasts of two States are opposite or adjacent to each other, neither of the two States is entitled, failing agreement between them to the contrary, to extend its territorial sea beyond the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two States is measured.”

253 Schofield, above n 147, at 730.

254 Rayfuse, above n 4, at 186.

255 At 186.

256 Stoutenburg, above n 104, at 280.

257 At 280.

258 Soons, above n 139, at 226.

259 Stoutenburg, above n 104, at 281.

260 Soons, above n 139, at 224.

261 At 224.

262 At 224.

263 At 224.

— and that other states acquiesce in this.<sup>264</sup> Absence of protest may be sufficient to infer acquiescence by other states.<sup>265</sup>

Caron agrees that the doctrine of historic waters is appealing and fair — it allows coastal states to retain control over their present EEZs.<sup>266</sup> Moreover, political comity makes this a realistic option — no country wants to be the country that denies endangered Pacific states their maritime territory in the face of climate change. The doctrine would also legitimise the sovereignty of Pacific states over their original maritime territory — which would be pushed outside its new territorial limits as sea levels rise and baselines recede.<sup>267</sup>

The doctrine has been examined by Jon Van Dyke, Joseph Morgan and Jonathan Gurish in the case of Hawaii.<sup>268</sup> They argue that the uninhabited Northwestern Hawaiian Islands would generate an EEZ “if the United States could show continuous historical use of these waters by the indigenous people of Hawaii”.<sup>269</sup> This argument could provide the basis for a claim to allow Pacific states to retain both their sea territory and semi-submerged land territory. These actions could, in turn, feed into the creation of regional customary international law.

#### *4 Masterly Inactivity*

Stoutenburg proposes a rather novel approach to dealing with boundary regression, which she calls “masterly inactivity”.<sup>270</sup> Masterly inactivity is founded upon the requirement that states must publish their baselines on updated charts.<sup>271</sup> In practice, “baselines once established and depicted on charts remain in place until the coastal state decides to redraft the charts, even if the low-water line has in fact moved”.<sup>272</sup> According to Stoutenburg, this concept would help “achieve a factual stabilization of [states’] maritime zones without having to resort to expensive coastal protection measures.”<sup>273</sup> It would essentially see states intentionally omitting to update charts. However, states often omit to update charts anyway due to the amount of time, effort and costs involved. Moreover, many countries either have not deposited accurate charts with the UN or do not have charts at all. Therefore, masterly inactivity is simply a name given to a practice that is already happening by sheer coincidence.

---

264 At 224.

265 At 224.

266 Caron, above n 132, at 650–651.

267 Stoutenburg, above n 104, at 282.

268 Jon M Van Dyke, Joseph R Morgan and Jonathan Gurish “The Exclusive Economic Zone of the Northwestern Hawaiian Islands: When Do Uninhabited Islands Generate an EEZ?” (1988) 25 San Diego L Rev 425.

269 At 487.

270 Stoutenburg, above n 104, at 279.

271 At 279.

272 At 279.

273 At 279.

## Alternative Models of Sovereignty

The previous options are ways that Pacific states can retain control over their EEZs. But how can they retain their statehood and sovereignty? The following options are explored as alternative sovereignty models.

### *1 Governments in Exile*

The first alternative sovereignty model for Pacific states is governments in exile. A government in exile is not “a special status or subject of international law”; rather, it is a model for governance where a government is no longer within its territory.<sup>274</sup> Governments in exile have been recognised for centuries where states are enemy-occupied, overthrown or devastated by natural disasters.<sup>275</sup> Burkett confirms that governments in exile are recognised by international law.<sup>276</sup> Even though these governments have lost their territory, they still retain all their rights.<sup>277</sup> These include the rights to enter treaties, maintain diplomatic relations, confer immunity, establish jurisdiction over nationals, provide consular representation, lodge protests, arrange deportations and provide passports and identity documents to nationals.<sup>278</sup> A government in exile is often believed to be able to return to its territory at some point.<sup>279</sup> However, this may not be possible if its territory is an island that has been submerged. Overall, the purpose of the government criterion of the Montevideo Convention is to ensure states have a representative in law; and a government in exile is consistent with this purpose.<sup>280</sup>

### *2 Ceded Territories and Federations*

The second model of alternative sovereignty is ceded territories and federations. This model may be appropriate where a state has lost most or all of its land but wishes to retain its maritime territory or use it as payment for resettlement. There are two approaches to this model. Under the first approach, endangered nations would use their maritime zones to purchase their right of residence in a secondary host state.<sup>281</sup> The population of the endangered or lost state would relocate to the host state, who would then act on its behalf.<sup>282</sup> The second approach, an alternative to cession, is entering into a federation with neighbouring states.<sup>283</sup> Like cession, a host state would

---

274 McAdam, above n 96, at 11.

275 At 10–12.

276 Burkett, above n 13, at 357.

277 McAdam, above n 96, at 11.

278 At 11.

279 At 11.

280 At 11–12.

281 Rayfuse, above n 1, at 8–9.

282 At 9.

283 At 9.



assume control over the former state's EEZ in exchange for resettlement of its people.<sup>284</sup>

This model has a number of issues and Rayfuse is fast to point out that neither approach is straightforward nor appealing.<sup>285</sup> First, there would be difficulty finding a country willing to take a few hundred thousand people.<sup>286</sup> Secondly, the relocated state would be at the mercy of its host state and vulnerable to potential abuse.

However, many scholars have argued that, by moving the people of a lost state to a new territory, the state may still be able to meet the *territory* criterion of the Montevideo Convention and, thereby, retain its statehood.<sup>287</sup> That being said, if states lose their baselines, they may lose the EEZs on which these migrations hinge. If so, this would completely undermine the model. Therefore, the model is contingent on Pacific states keeping their EEZs by some other means.

### 3 *Deterritorialised States*

The third model is the possible deterritorialised state. Rayfuse argues that this is not a new model and recognises the flexibility granted if sovereignty and statehood could be separated from territory.<sup>288</sup> Burkett, another advocate of this model, suggests, as precedents, three categories of international actors which have governed without territory: failed states, governments in exile, and economic entities that serve quasi-governmental roles.<sup>289</sup> Traditionally, “a defined territory and a people are the essential components of a State, together with a sovereign government.”<sup>290</sup> However, many of the entities Burkett uses as examples lack one or more of the Montevideo Convention criteria at any given point in time. That these criteria are guidelines, not strict rules, provides credibility for Burkett's deterritorialised statehood model called the Nation Ex-Situ.<sup>291</sup>

The Nation Ex-Situ can be implemented where a state has disappeared completely or where islands are no long habitable.<sup>292</sup> The model creates a new legal entity in international law whereby the government of this nation would situate itself at a central point overseas.<sup>293</sup> From this point, it would manage the lost nation's marine territory and act as a “vital political and cultural nucleus” for the nation's scattered people,<sup>294</sup> allowing the continued existence of the sovereign state.<sup>295</sup> Some scholars believe this

---

284 At 9.

285 At 9.

286 At 9.

287 At 8.

288 Rayfuse, above n 4, at 179.

289 Burkett, above n 13, at 356–357.

290 Hayashi, above n 59, at 84 (footnotes omitted).

291 Burkett, above n 13, at 346.

292 At 346.

293 Burkett, above n 117, at 107.

294 At 107.

295 Burkett, above n 13, at 346.

operation could be administered through the political trusteeship system.<sup>296</sup> However, considering the history of the trusteeship system in the Pacific, and issues that arose under it (such as nuclear testing), Pacific states may be reluctant to accept this model.

Opponents have also argued that this model would prevent the people of vanishing island states from establishing their own *justice* within a geographic area; thus, the model would fail to meet the criterion for statehood of preserving the people's self-determination.<sup>297</sup> If we hinge the model solely on this, the model would not be effective. However, if we accept that there is a continuum consisting of several different ways of institutionalising self-determination — on which sovereignty is but an endpoint — then the model should succeed.<sup>298</sup> Moreover, Rayfuse argues that international law already recognises the “notion of functional, or non-territorial sovereignty, as in the context of communities made diasporic by processes of invasion or colonization”.<sup>299</sup> There are also bodies, like the European Union, whose sovereignty is recognised in international law.<sup>300</sup>

Historically and presently we can see a number of deterritorialised states and sovereign entities without territory. This lends credibility to the deterritorialisation model. For example, Napoleon removed the Sovereign Military Hospitaller Order of St John of Jerusalem, of Rhodes and of Malta (SMOM) from Malta, over which it had historically been sovereign, in 1798.<sup>301</sup> However, the SMOM has retained sovereignty without territory — it still maintains its own government and issues its own passports.<sup>302</sup> Furthermore, SMOM enjoys sovereign immunity and recognition by 102 countries.<sup>303</sup> Another example is the Papal See. Following its annexation by Italy in 1870, the Papal See continued to be recognised as a state, despite having no territory, until 1929, when it was granted sovereignty over the Vatican City.<sup>304</sup> In addition, at various points in time, for whatever reason, countries like Kosovo and Taiwan were not recognised as states by a number of countries.<sup>305</sup> In any case, the deterritorialised state model is rare; and, due to its complicated structure, would likely only be implemented as a last resort.

---

296 At 346.

297 Ödalen, above n 219, at 226.

298 At 226.

299 Rosemary Rayfuse “International Law and Disappearing States: Utilising Maritime Entitlements to Overcome the Statehood Dilemma” (University of New South Wales Faculty of Law Research Paper No 52, November 2010) as cited in Ödalen, above n 219, at 228.

300 Burkett, above n 13, at 357.

301 Lilian Yamamoto and Miguel Esteban “Atoll Island States and Climate Change: Sovereignty Implications” (United Nations University Institute of Advanced Studies, UNU-IAS Working Paper No 166, October 2011) at 36.

302 At 36.

303 At 37.

304 At 36.

305 See Maas and Carius, above n 10, at 658.

## Action under UNCLOS

The international law of the sea is “dominated by multilateral treaties”.<sup>306</sup> Of these, UNCLOS is the most dominant.<sup>307</sup> However, it is far from comprehensive, and this causes legal dilemmas when addressing contemporary issues, such as climate change and rising sea levels.<sup>308</sup> We must consider then what actions we can take under UNCLOS to address climate change and sea level rise.

### 1 Reforming UNCLOS

Joeli Veitayaki believes that UNCLOS was “tailor-made” for the Pacific Islands.<sup>309</sup> From its inception, UNCLOS gained widespread acceptance amongst Pacific nations, who saw it as an “opportunity to formalize a system for the use and management of the region’s most important resource base, fisheries.”<sup>310</sup> Pacific nations favour UNCLOS because it accounts for their status as archipelagic states and allows them to use archipelagic baselines.<sup>311</sup> To date, 15 Pacific nations have signed UNCLOS, with Fiji being the first of all signatories to ratify the Convention.<sup>312</sup> At the turn of the century, small island states made up approximately 20 per cent of UNCLOS signatory states.<sup>313</sup> This proportion is now higher, giving endangered island states significant voting power. However, “no remedies for the consequences of sea-level rise can be found in UNCLOS: it was tailored to the geographical circumstances of its own time, not the ones yet to come”.<sup>314</sup> Therefore, the time may be ripe to re-tailor it to the circumstances of today, when climate change and rising sea levels are dominant concerns.

Hayashi advocates for reform of UNCLOS; in particular, reform that would allow for the freezing of baselines.<sup>315</sup> He provides three possible options for revising the Convention.

The first option uses UNCLOS’ established, but untried, amendment procedures.<sup>316</sup> Under art 312, any party may, by writing to the UN Secretary-General, propose a specific amendment to the Convention and request that the Secretary-General convene a conference to consider the amendment.<sup>317</sup> The conference would be convened if, “within 12 months from the date of the circulation of the communication, not less than one half of the States

---

306 Rothwell and Stephens, above n 126, at 23.

307 At 23.

308 Vidas, above n 105, at 75.

309 Veitayaki, above n 6, at 150.

310 At 150.

311 At 153.

312 Division for Ocean Affairs and Law of the Sea “Chronological lists of ratifications of, accessions and successions to the Convention and the related Agreements” (23 May 2017) United Nations <[www.un.org](http://www.un.org)>.

313 Barnett and Adger, above n 55, at 327.

314 Vidas, above n 105, at 75.

315 Hayashi, above n 59, at 90.

316 At 87.

317 At 87.

Parties reply favourably to the request”.<sup>318</sup> Alternatively, art 313 provides that a state party may propose an amendment through the “simplified procedure”. This process does not require a conference; instead, the Secretary-General is expected to circulate the proposal to all state parties.<sup>319</sup> If no party objects to the amendment within 12 months from the date of circulation, the amendment is passed.<sup>320</sup> Because there are a number of countries at risk from sea level rise, there is sound reason — under both methods — for state parties to consider an amendment. However, under the simplified procedure, a single state party could stop the adoption of an amendment dead in its tracks.<sup>321</sup> Moreover, there is a reluctance to amend UNCLOS, which stems from a fear of undoing it and turning it into a state free-for-all. To preserve its integrity, it is important that UNCLOS remain a package deal.<sup>322</sup>

Hayashi’s second option for amending UNCLOS is through the “Decisions of the Meeting of States Parties to UNCLOS”.<sup>323</sup> The Meeting of States Parties to the Law of the Sea (SPLOS) has de facto amended provisions within UNCLOS on four separate occasions: twice in 1995, once in 2001 and once in 2008.<sup>324</sup> This evidences that passing amendments is practically possible.<sup>325</sup> These actions ranged from postponing elections to changing the commencement of time limits for states to submit continental shelf claims. There was some issue among state parties as to whether these decisions amounted to *amendments* or *understandings* of UNCLOS’ specific provisions. Regardless, the decisions have had “the legal effect of changing the clear letters of the relevant provisions.”<sup>326</sup> But these actions are not comparable with the proposed amendments regarding baselines, the disappearance of islands and maritime zones, which would constitute substantive changes.<sup>327</sup>

The third option for amendment is by using “[a]greements supplementary to UNCLOS”.<sup>328</sup> These are agreements that are aimed at “supplementing, interpreting or implementing” UNCLOS and can be “negotiated and adopted in various forums”.<sup>329</sup> The UN General Assembly or SPLOS can convene a forum of discussion.<sup>330</sup> Agreements negotiated in a subsidiary body or other forum have been adopted before, as was the case with the 1994 Agreement relating to the Implementation of Part XI of UNCLOS.<sup>331</sup> After informal negotiations, the Agreement was made and it

---

318 UNCLOS, art 312.

319 Hayashi, above n 59, at 87.

320 At 87.

321 At 87.

322 At 87.

323 At 87.

324 At 88.

325 At 88.

326 At 88.

327 At 88.

328 At 88.

329 At 88.

330 At 89.

331 At 90.

became a draft resolution presented to the General Assembly.<sup>332</sup> The General Assembly subsequently recommended that member states sign and ratify the Agreement.<sup>333</sup>

## 2 *Unilateral Actions and Responses*

Within the current legal system, there are two main types of unilateral actions. Here, we are only concerned with one: unilateral actions made by states that seek to extend existing laws and practices.<sup>334</sup> The clearest example is President Harry S Truman's Proclamation 2667 on the Policy of the United States With Respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf, issued in 1945.<sup>335</sup> The United States has a history of these sorts of actions. It often disregards international conventions and unilaterally decides that any land that can be defined as an island should have territorial seas — and, therefore, should be used as a base point for boundary delineation.<sup>336</sup> Samoa is considering unilateral actions to freeze its boundaries in light of rising sea levels.<sup>337</sup> Any endangered state can take unilateral actions to claim its territory if boundaries begin to shift. But Stoutenburg argues that unilateral actions would be both “uncoordinated” and “inadequate” in responding to sea level rise.<sup>338</sup> Unilateral actions are more of an *every man for himself* approach. They are undesirable in international law, but available as a last resort.

### **Creation of Regional Customary International Law**

A further, undeniably attractive option to combat the loss of maritime territory is the creation of new regional customary international law.<sup>339</sup> Regional customary international law is a smaller subset of international law that is less often invoked. Regional law is “any set of rules with which a region endows itself because of the distinctive values shared by its members ... [or] any rule having a regional scope of application”.<sup>340</sup> Essentially, island states can protect their endangered coasts and maritime territory by invoking new regional customs. The benefit of regional custom is that it extends not only to the Pacific Islands but also to islands in the Indian Ocean, like the Maldives, and the Caribbean, amongst others. The more states that

---

332 At 90

333 At 90.

334 Rothwell and Stephens, above n 126, at 24.

335 At 24.

336 David A Colson “The Maritime Boundaries of the United States: Where Are We Now?” in Thomas A Clingan Jr (ed) *The Law of the Sea: What Lies Ahead?* (The Law of the Sea Institute, Honolulu, 1988) 464 at 472.

337 Whether Samoa has taken any action towards doing this is yet to be seen. This information is based on a conversation I had with a Samoan Government Minister in 2014 when I presented research on this topic at the Samoa Conference III at the National University of Samoa in Apia, Samoa.

338 Stoutenburg, above n 104, at 276.

339 Soons, above n 139, at 225.

340 Mathias Forteau “Regional International Law” in R Wolfrum (ed) *The Max Planck Encyclopedia of Public International Law* (online ed, Oxford University Press, September 2006) at [1].

implement this regional custom, the more likely the custom will be recognised and accepted. As Mathias Forteau writes: “regional solidarity does not mean spatial proximity since all the members of regional organizations do not necessarily belong to the same region”.<sup>341</sup>

Customary international law has been recognised in *Nicaragua v United States*, in which the International Court of Justice (ICJ) stated that:<sup>342</sup>

For a new customary rule to be formed not only must the acts concerned “amount to a settled practice” but they must be accompanied by the *opinio juris sive necessitatis*.

Essentially, the two key elements for the recognition of new customary international law are: settled practice by the state; and *opinio juris* (that the state believes its actions amount to a legal necessity).<sup>343</sup> These are also the criteria under art 38(1) the Statute of the International Court of Justice, which provide that the Court shall apply “international custom, as evidence of a general practice accepted as law”.<sup>344</sup> As sea levels continue to rise, countries must continue to maintain and recognise their original baselines and the limits of their marine territory.<sup>345</sup> Soons argues that they will have to go further and gain other states’ approval of this.<sup>346</sup> A number of countries currently claim zones extending 200 nautical miles around what are essentially barren rocks, or uninhabited mid-oceanic islands, without being challenged.<sup>347</sup> This suggests that countries may also accept new regional customary international law.

The final issue with the creation of new regional customary international law is how long it must be in place in order to be recognised. In the *North Sea Continental Shelf Cases* it was held that “the passage of only a short period of time is not necessarily, or of itself, a bar to the formation of a new rule of customary international law”.<sup>348</sup> Furthermore, “[t]he more publicity ... given to this practice, without causing any protests, the quicker the customary rule can come into being.”<sup>349</sup> Traditionally, customary international law develops out of practice over a considerable amount of

---

341 At [12].

342 *Military and Paramilitary Activities in and against Nicaragua Case (Nicaragua v United States of America) (Merits)* [1986] ICJ Rep 14 at [207] as cited in Tullio Treves “Customary International Law” in R Wolfrum (ed) *The Max Planck Encyclopedia of Public International Law* (online ed, Oxford University Press, November 2006) at [17] (emphasis in original).

343 Stoutenburg, above n 104, at 284–285.

344 Statute of the International Court of Justice, art 38(1). See also Tullio Treves “Customary International Law” in R Wolfrum (ed) *The Max Planck Encyclopedia of Public International Law* (online ed, Oxford University Press, November 2006) at [15].

345 Soons, above n 139, at 231.

346 At 231.

347 Van Dyke, Morgan and Gurish, above n 268, at 486.

348 *North Sea Continental Shelf Cases (Federal Republic of Germany v Denmark; Federal Republic of Germany v Netherlands)* [1969] ICJ Rep 4 at 43 as cited in Stoutenburg, above n 104, at 285.

349 Soons, above n 139, at 225.

time.<sup>350</sup> But some recent developments have allowed customary international law to come rapidly into place. For instance:<sup>351</sup>

... the continental shelf, or space technology as regards the rule on the freedom of extra-atmospheric space ... [or maybe] the urgency of coping with widespread sentiments of moral outrage regarding crimes committed in conflicts such as those in Rwanda and Yugoslavia ... brought about the rapid formation of a set of customary rules concerning crimes committed in internal conflicts ...

Considering how rapidly Pacific states will feel the impacts of rising sea levels, any new regional customary international law would likely have to develop as a high-speed custom.<sup>352</sup> It has been suggested that there are some international treaties recognising rights in existing maritime boundaries.<sup>353</sup> For example, several Pacific nations and the United States entered an agreement called the Treaty on fisheries between the Governments of certain Pacific Island States and the Government of the United States of America.<sup>354</sup> Under the Treaty, the United States formally recognised that “coastal States have sovereign rights ... [over] the fisheries resources of their exclusive economic zones or fisheries zones”<sup>355</sup> — and, therefore, the territories and territorial boundaries of Pacific nations.

## Judicialisation

Another option is to create rules associated with sea level rise through judicialisation. This is not a new process — it has been used for a number of years. However, it has never been used in relation to sea level rise.<sup>356</sup> The most relevant cases relating to this issue are border delimitation disputes, which have been heard in the ICJ and have established a binding option to fix boundary lines.<sup>357</sup> To date, the ICJ has heard cases to establish boundaries between France and the United Kingdom, Tunisia and Libya, Malta and Libya, and the United States and Canada.<sup>358</sup> The process does not fix the problem of rising sea levels, but it may assist in determining future boundaries. This is especially so considering the expected shifts in baselines and maritime zones. However, this will only apply for boundaries where there are fewer than 400 nautical miles to be delimited. Given that many countries are further apart than this, judicialisation can only be a partial solution. In 2010, 38 of the 160 countries party to UNCLOS favoured a

---

350 Treves, above n 344, at [24].

351 At [24].

352 See [24].

353 Veitayaki, above n 6, at 157.

354 Treaty on fisheries between the Governments of certain Pacific Island States and the Government of the United States of America 2176 UNTS 93 (signed 2 April 1987, entered into force 15 June 1988).

355 Preamble.

356 Soons, above n 139, at 229.

357 At 229.

358 At 229.

judicial body.<sup>359</sup> Of these, 24 indicated the ICJ as a preference, with seven choosing it as their first preference.<sup>360</sup>

The ITLOS stated that its jurisdiction extends to matters of interpretation and application of international law<sup>361</sup> — this could be an avenue through which to pursue issues on which UNCLOS is silent.<sup>362</sup> Therefore, ITLOS could have scope for dealing with matters omitted from UNCLOS. Furthermore, President Jesus of the ITLOS suggested to the General Assembly that ITLOS' advisory opinions could be applied to a wide range of issues. These included “[t]he legal effect, if any, on coastal States’ baselines of major land invasion by seawater, as a result of sea-level rise caused by climate change”.<sup>363</sup> An advisory opinion of this nature would be beneficial in clarifying actions to be taken against rising sea levels on which UNCLOS has been silent. To date, advisory opinions in respect of issues, such as illegal, unreported and unregulated fishing, have been extremely effective.<sup>364</sup>

## A New Treaty

The final option is to move away from UNCLOS by creating a completely new legal regime. Due to its improbability, I will only deal with this option very briefly. Creating an entirely new treaty is an unrealistic option due to the time and resources required, as well as the general reluctance to change the current international framework. As it stands, many states are hesitant even to amend UNCLOS, fearing that this could undo the status quo and result in a free-for-all. Moreover, UNCLOS is a package deal — a conception that is important for its integrity.<sup>365</sup>

What if the new treaty did not replace the entirety of UNCLOS, but merely implemented new provisions to deal with climate change impacts? Though this sounds appealing, a second treaty supplementary to UNCLOS could still undermine the current legal system.<sup>366</sup> It would be better to amend UNCLOS as it stands, rather than create another treaty or convention. Furthermore, given UNCLOS’ negotiation process, it is likely that a new treaty would undergo a similarly lengthy development. This would make it ineffective in dealing with the time-sensitive issues of climate change and sea level rise.

359 Rothwell and Stephens, above n 126, at 485–486.

360 At 485–486.

361 “The Tribunal” International Tribunal for the Law of the Sea <[www.itlos.org](http://www.itlos.org)>.

362 Jose Luis Jesus, President of the International Tribunal for the Law of the Sea “Oceans and the law of the sea” (Statement to the Plenary of the Sixty-fourth Session of the United Nations General Assembly, New York, 4 December 2009) as cited in Tullio Treves “The International Tribunal for the Law of the Sea and Other Law of the Sea Jurisdictions (2008–2009)” (2009) 19 *Italian Yearbook of International Law* 315 at 317.

363 Jesus, above n 362, as cited in Treves, above n 362, at 318.

364 International Tribunal for the Law of the Sea “Case No. 21” <[www.itlos.org](http://www.itlos.org)>.

365 Hayashi, above n 59, at 87.

366 A supplementary treaty only dealing with climate change would probably have consequences outside the scope of the treaty, and so cause further confusion. For example, while a supplementary treaty might lock in current boundaries and ensure that they are no longer ambulatory, it could affect areas that have not undergone the process for boundary delimitation.



## Final Recommendations

Throughout this part, I have explored numerous ways to help Pacific states retain their land and marine territories in the face of rising sea levels. As I have explained, the current legal framework is not prepared to handle this novel challenge. However, many of the options I discuss fix only part of the problem. They work to retain either sovereignty, land or EEZs. But few options can protect all of these interests. I venture that a combination of approaches is needed. The law must become more flexible. Until such time as law realises the need to be flexible in order to deal with these issues, I strongly advocate for a combination of the following approaches in order to give the Pacific the best possible chance of retaining their lands and seas: delimit their boundaries, formally publish their boundaries, invoke the doctrine of historic waters and use artificial means to protect their islands. Furthermore, the Pacific states should establish regional customary international law, amend their domestic legislation and attempt to amend UNCLOS.

## V CONCLUSION

Human history has seen states come and go, live and die. The world now faces an alarming legal situation in which some Pacific states could become entirely submerged. Climate change and sea level rise pose a real and long-term threat.

Pacific states now find themselves in a sinking boat, with some sinking much faster than others. Sea level rise has the potential to inundate whole islands, rendering them uninhabitable or completely submerged. It threatens the security of food and water for both consumption and economic gain. The worst-case scenario would see the mass migration of Pacific peoples to escape the impacts of climate change. As it stands, the Pacific has already lost islands in Kiribati and Papua New Guinea.<sup>367</sup>

The current legal system strives for certainty, universality and consistency. But this legal dilemma challenges these values. Pacific nations face the prospect of bearing a *double harm* whereby climate change deprives them of their lands and international law deprives them of their seas. The international community must respond to this predicament.<sup>368</sup>

Until recently the international community had little interest in dealing with the issues of climate change and sea level rise in the Pacific. However, we now see climate change forcing the same community's hand.<sup>369</sup> These issues will require, not only a change in law, but also greater flexibility in legal interpretation and a fundamental shift in the way we do things. They may require a change in the way we classify states and

---

367 For Kiribati, see Alex Kirby "Islands disappear under rising seas" (14 June 1999) BBC News <<http://news.bbc.co.uk>>. For Papua New Guinea, see generally Redfearn, above n 177.

368 Barnett and Adger, above n 55, at 333.

369 Rayfuse, above n 4, at 190.

sovereignty.<sup>370</sup> In particular, they may require a state's recognition and preservation, even when the criteria for statehood is partially or wholly absent.<sup>371</sup>

There is no single solution to help the Pacific nations preserve their territories and sovereignty. This article has explored a number of options. But few are satisfactory. The best approach under the current system is a combination of models. Radical legal change is needed, but it is hindered by international ambition.<sup>372</sup> Pacific nations should not face the prospects of losing everything or being at "the precarious mercy of the historical polluters".<sup>373</sup> The UN has raised flags every time a new nation has been born; it must not dismantle flags as nations vanish beneath the ocean.<sup>374</sup> For the Pacific peoples, what remains truer than ever is that "[o]ur survival is not negotiable."<sup>375</sup>

---

370 Vidas, above n 105, at 83.

371 McAdam, above n 96, at 12.

372 Stoutenburg, above n 104, at 273.

373 Nemat Sadat "Small Islands, Rising Seas" (August 2009) United Nations Chronicle <[www.unchronicle.un.org](http://www.unchronicle.un.org)>.

374 Christina Ora "As climate talks drag on, low-lying atolls are already being flooded" *The Sydney Morning Herald* (online ed, Sydney, 11 December 2009).

375 HE Marlene Moses, Permanent Representative of Nauru "Statement on Behalf of the Pacific Small Island Developing States (PSIDS)" (address before the United Nations Youth Delegates, 13 October 2009) as cited in Knodel "Wet Feet Marching", above n 84, at 153.