

The Legal Implications of Adaptation to Sea Level Rise

The Case of Pacific Island States

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1 Introduction

Even though the beginnings of international environmental law as a discipline can be traced back to the year 1972¹, it was only in the 1980s that anthropogenic climate change became a distinct legal and policy concern. A number of physical factors, notably the record-high temperatures² and the occurrence of extreme weather events like the drought in the Midwest of the United States during the summer of 1988, raised the issue's public profile³. In addition to this, important progress in the field of climate science, in particular the improved modelling and predictive work made possible by steadily more powerful computers, had increased the scientific community's certainty over the causes and consequences of the changing climate⁴.

These factors compelled the UN to take action. It responded by creating the Intergovernmental Panel on Climate Change (IPCC) in 1988⁵ and the United Nations Framework Convention on Climate Change (UNFCCC) in 1992⁶. Today, more than twenty years later, the regime is well established, with the aforementioned institutions respectively standing as the scientific and normative cornerstones of the international climate change regime. The international community however still faces many challenges in regards to climate change. In the field of international law, one of those challenges lies in the fact that the repercussions of the changing climate are wide-reaching and are not all addressed in international environmental instruments. Norms and practices in other spheres of law, from human rights to the law of the sea, must take into account the changes in circumstance resulting from climate change.

¹ Sand (2008), p.33

² Jones et al. (1999), p.177

³ Hecht (1995), p.379

⁴ Kellogg (1987), p.128

⁵ United Nations General Assembly RES/43/53 (1988), par.5

⁶ UNFCCC (1992)

This thesis illustrates the complexity of the emerging legal issues stemming from climate change by analyzing the legal implications of adaptation to climate-induced sea level rise in the case of Pacific island States. This analysis is divided in three parts. First, a framing of the research underlines the pertinence of focusing on the crosscutting notion of adaptation to sea level rise in Pacific island States. Second, a review of the legal issues raised in this context draws attention to a number of normative gaps in different areas of international law. Third, an analysis of the solutions put forward in the literature highlights different approaches for addressing these gaps and suggests some measures that could prove useful in the current situation.

2 Framing of the research

Since the inception of the international climate change regime, continuous improvement in understanding the phenomenon has resulted in an evolution of the regime's breadth. Some aspects, such as sea level rise, have always been considered specifically important but still represent significant policy and scientific challenges as increased understanding revealed complexities not initially taken into account. Others, like adaptation and the special situation of the Pacific island States, are today recognized as worthy of additional attention even though some of their distinct characteristics were initially overlooked. This chapter of the thesis further defines and retraces the evolution of these aspects in the climate change regime, underlining the importance of focusing on the crosscutting concept that is adaptation to sea level rise in Pacific island States.

2.1 Sea Level Rise

The idea that anthropogenic climate change could lead to a rise of the world's oceans was one of the first postulated consequences of the phenomenon. Already in 1963, a group of scientists presenting as part of a conference at the Conservation Foundation in New York argued that even though a "general lack of quantitative knowledge of the biogeochemistry of the Earth" subsisted, "it [seemed] quite certain that a continuing rise in the amount of atmospheric carbon dioxide [was] likely to be accompanied by a significant warming of the

surface of the earth which [...] would raise sea level”⁷. The reasoning behind this claim was twofold. First, a warmer climate would warm the Earth’s seas and oceans, which would occupy more space through thermal expansion. Second, the warmer climate would lead to increased summer melting of the polar ice caps, accompanied by a reduced regeneration of those icecaps because of reduced snowfall and shorter winters: the water from those icecaps would cause the oceans to rise⁸. The amount and quality of evidence supporting this theory increased as climate science improved. Significant progress was notably made over the last decade: the IPCC’s level of certitude over its AR5 projections for sea level rise, for example, has increased in comparison to its 2007 Fourth Assessment Report (AR4). The Panel credits “the improved physical understanding of the components of sea level [and] the improved agreement of process-based models with observations”⁹ for this increased confidence.

Even if the IPCC can now state with “very high confidence” that climate induced sea level rise is a reality and that “coastal systems and low-lying areas will increasingly experience [its] adverse impacts such as submergence, coastal flooding and coastal erosion”¹⁰, many uncertainties remain. Recent sea level rise has been both more rapid and more substantial than estimated: for example, since the advent of satellite measuring in the early 1990s, the rise has proven to be of an average rate of 3.4 millimeters per year, almost 80% higher¹¹ than the 1.9 millimeter per year rate presented by the IPCC in AR4¹². It has been suggested that this gap can be explained by the melting of polar ice sheets caused by coastal glacier flows, whose potential impact was not included in the IPCC calculations because it was not fully understood¹³. Predictions of the magnitude of upcoming future sea level rise are similarly still difficult to estimate¹⁴, since scientific understanding of the various and cumula-

⁷ Conservation Foundation (1963), p.1

⁸ *Id.*, p.6

⁹ Church et al. (2013), p.1139

¹⁰ Wong et al. (2014), p.364

¹¹ Rahmstorf (2010), p.44

¹² IPCC (2007) (2), p.8

¹³ Cazenave (2010), p.165

¹⁴ Wong et al. (2014), p.395

tive physical, chemical and biological changes in ocean systems likely to exacerbate the effects of sea level rise, such as ocean acidification, changes in wave patterns and changes in ocean currents, is still incomplete¹⁵.

Because uncertainties persist, because some rise has already occurred and because it has up until today been occurring at a much faster rate than previously estimated, there is a need for legal and policy measures designed to adapt to scenarios of sea level rise. Since the rise progresses in a non-linear manner, these measures should integrate a degree of flexibility and precaution in order to be effective in a steadily changing context. The international community has already expressed its willingness to adopt and integrate such measures¹⁶, but tangible results are still few and far between.

Legal academia, for its part, has devoted some attention to the issues raised by sea level rise. Much of the work done so far has however been very sectoral in scope, with few linkages attempted between migration issues covered by human rights studies and territorial issues relevant to the law of the sea field. Recently efforts have been made to address the issues in a more comprehensive manner: the establishment by the International Law Association (ILA) of the Committee on International Law and Sea Level Rise in 2012 is a good example of this¹⁷. The Committee's mandate preconizes a broad scope, with the goal of "develop[ing] proposals for the progressive development of international law in relation to the possible loss of all or of parts of state territory and maritime zones due to sea-level rise, including the impacts on statehood, nationality, and human rights"¹⁸. Sea level rise is thus an effect of climate change that has been identified as worthy of additional scholarly attention, even if at it may at first glance come across as well understood and well covered in the literature and in practice.

¹⁵ Hoegh-Guldberg et al., p.1713

¹⁶ UNFCCC (1992), art.4(1)(d) and (e)

¹⁷ For more information about the Committee, its origins and its mandate, see Vidas et al. (2015)

¹⁸ International Law Association (2012)

2.2 Adaptation

During the early years of the international climate change regime, adaptation and mitigation were understood as two separate concepts, the latter seen as worthy of more attention. Indeed, mitigation of greenhouse gas emissions has always been seen as the main objective of the climate regime, while adaptation was not seen as a policy goal but merely as an indicator of a state's resilience towards climate change. An illustration of this separation can be found in article 2 of the UNFCCC: "stabilization of greenhouse gas concentrations" is stated as the "ultimate objective of [the] convention" while adaptation is only mentioned as a natural attribute of ecosystems to be taken into account when establishing a "time-frame" for mitigation. The scientific community also contributed to the adaptation/mitigation dichotomy during those years. IPCC Working Group II, for example, effectively devoted only 32 pages of its volume in the 1995 second assessment report to adaptation, while over 200 pages were used to cover mitigation strategies¹⁹. As a result of these choices, discussion over the elaboration of mitigation strategies largely outweighed talk on adaptation measures in the UNFCCC forum from its creation until the adoption of the Kyoto Protocol in 1997²⁰.

The belief that adaptation should play second fiddle to mitigation however began to wane over the last decade. The reasons for this are multiple and complementary. First, reaching the Kyoto Protocol emission reduction targets proved to be politically and practically more difficult than anticipated²¹. Second, a better understanding of the dynamics of climate change led to the realization that due to past emissions some change was unavoidable and already occurring²²; according to the IPCC, adaptation is now "the only available and appropriate response" to this impending change²³. These new realities contributed to dissipate some of the stigma initially associated with adaptation, notably that a focus on adaptation

¹⁹ IPCC (1996), as noted by Kates (1997), p.31

²⁰ Ayers (2009), p.755

²¹ Schipper (2006), p.89

²² Ayers (2009), p.755

²³ IPCC (2007) (1), p.19

constitutes a defeatist attitude in regard to mitigation efforts²⁴ and that adaptation theory is based on an overoptimistic faith in scientific progress²⁵. As a result, the concept's profile in the climate negotiations has considerably grown²⁶. The establishment of the Cancun Adaptation Framework²⁷ and of the Adaptation Committee²⁸ at COP-16 in 2010 marks the latest milestone in the ongoing effort to reframe adaptation as a central concept in the Post-2020 agreement set to be adopted in Paris.

Despite recent progress however, adaptation is still ways away from occupying the central role its proponents strive for. Indeed, in the mid-2000s, the concept was still a decade behind in its development compared to the mitigation regime according to some analysts²⁹. The absence of a single widely agreed upon definition of adaptation is an illustration of this relative immaturity³⁰. Indeed, alternatively to the narrower, more technical definition set forth by the IPCC and used in the science and policy communities³¹, some experts opt for broader definitions drawing on the neighboring concept of sustainable development³². This definitional ambiguity has in turn led to shortcomings in funding in two ways. First, some authors have referred to a broad definition to argue that the climate regime is not the appropriate forum to discuss the obligations of wealthy nations towards the poor, and that its purpose would be better served by focusing exclusively on mitigation measures³³. This line of argument has been picked up by parties to justify their reluctance to contribute funding to adaptation. Second, the loose definition opens the door for actors to, despite their promises for “new and additional funding” through the Cancun Adaptation Framework, recycle funding already granted for other types of development aid as funding for climate change

²⁴ Parry et al. (1998), p.741

²⁵ Tarlock (1992), p.171

²⁶ SEAN-CC (2010), p.1

²⁷ UNFCCC Decision 1/CP.16 (2010), par.13

²⁸ *Id.*, par.20

²⁹ Kartha et al., (2006) p.4

³⁰ Schipper (2006), p.90

³¹ IPCC (2014), p.1758

³² Moser and Boykoff, (2013), p.7

³³ Posner and Weisbach (2010), p.175

adaptation³⁴. Further work is therefore needed in order to clarify adaptation's scope and solidify its position in the climate regime.

As this thesis addresses legal issues related sea level rise, it naturally centers its analysis on adaptation. Indeed, as mentioned above, experts agree that some sea level rise has already occurred and that further rise in the near future is inevitable. In this context, adaptation becomes necessary. This does not mean that mitigation or other strategies should be ignored. Adaptation and mitigation must be seen as complementary and should not be compartmentalized. The synergies between the two facets should be exploited: some adaptation strategies to sea level rise, for example the reforestation of coasts vulnerable to erosion, can have incidental benefits on mitigation, while successful mitigation can also help keep down the costs of adaptation³⁵. This thesis thus discusses legal measures to support adaptation to sea level rise, but by doing so also touches upon mitigation and other approaches insofar as they are relevant for adaptation.

2.3 Pacific Island States

The Pacific islands region is composed of 21 countries and territories in the tropical Pacific Ocean. Of these, nine are fully independent: Fiji, Papua New Guinea, the Solomon Islands, Vanuatu, Kiribati, Nauru, Samoa, Tonga and Tuvalu. Seven are territories either of France (New Caledonia, French Polynesia, Wallis and Futuna) of the United States (Guam, the Northern Mariana Islands, American Samoa) or of New Zealand (Tokelau), while five are self-governing and constitutionally independent but still have some degree of association with the United States (the Federated States of Micronesia, the Marshall Islands, Palau) or with New Zealand (the Cook Islands, Niue)³⁶. Each of these countries and territories has its own unique physical, historical and social characteristics. As such, an in-depth analysis of each country's specific situation is outside the scope of this thesis. Yet every part of this

³⁴ Ciple et al. (2011), [p.2]

³⁵ Stern (2007), [p.xxi]

³⁶ Barnett and Campbell (2010), p.5

“Sea of Islands”, as Pacific islanders sometimes call their land³⁷, suffers to a varying extent from the same two cumulative types of vulnerability: geographical and economic.

As mentioned earlier, sea level rise poses a risk to all of the world’s coastal states. From Bangladesh to the United States, no country’s coast is exempt from rising waters and erosion. Pacific island States’ unique geography however places them and their populations on the front line against sea level rise, exposing their territories to more important risk than in other countries. Indeed, many Pacific Island countries’ entire territories sit only a few meters above sea level. This has two implications: first, even a small increase in sea level could lead to important loss of territory. Second, Pacific Island populations have little to no possibility of internally relocating to higher ground in response to this rise. In addition to the direct consequences of sea level rise, the already fragile natural balance necessary for life on these islands risks being upset by secondary effects. In this regard, the three atoll island states Tuvalu, Kiribati and the Marshall Islands are particularly at risk: warming waters and ocean acidification risk destroying the coral reefs on which their islands rest³⁸, while increased drought resulting from changes in precipitation threatens their populations’ fresh water sources³⁹.

In addition to a geographical vulnerability, Pacific island States’ economic situation makes them less resilient to the effects of sea level rise. Indeed, developed states possess the financial and technological resources necessary to protect themselves from, and adapt to, the consequences of sea level rise. The Netherlands, for example, have planned to invest about one billion euros annually over the next century in order to protect their coastline and secure their freshwater supplies⁴⁰. Such costly adaptation measures are out of reach for the world’s least developed countries (LDCs), whose average GDP per capita is estimated at

³⁷ Hau’ofa (1994), p.153

³⁸ Yamamoto and Esteban (2014), p.47

³⁹ *Id.*, p.77

⁴⁰ Deltacomissie (2008), p.9

under 1000\$⁴¹. This economic vulnerability affects many Pacific island States: indeed, out of the nine fully independent Pacific Island countries, five are classified as LDCs by the United Nations: Kiribati, Samoa, the Solomon Islands, Tuvalu and Vanuatu⁴². Funding for adaptation was promised to small island developing states during the 16th FCCC Conference of the Parties (COP) in Cancun⁴³, but developed states have so far not lived up to their promises⁴⁴.

The double vulnerability of Pacific island States, both geographical and economic, sets them apart from other states at risk of sea level rise. It justifies framing the research around them as a group by allowing us to predict that Pacific island States are likely to face similar types of challenges, although to a varying degree. As such, solutions taking into account this double vulnerability are likely to be useful to many of these states. Additionally, it is worth noting that all of the independent Pacific island States are parties to both the UN-FCCC and the UNCLOS. They are also united through the Pacific Islands Forum⁴⁵, as well as under the banner of the Small Island Developing States (SIDS) Network, whose interests are represented within the UN system by the Alliance of Small Island States (AOSIS)⁴⁶. This high degree of structural unity could help Pacific island States to have their voices heard in the international arena and realize significant progress towards adaptation to sea level rise.

To summarize, sea level rise, adaptation and the situation of Pacific island States each present characteristics that make them worthwhile focus areas for international legal research. The first's unpredictability and potentially disastrous consequences, the second's underrepresentation in the climate regime and the third's common vulnerabilities justify framing the research around them. But it is these three aspects combined that really present a

⁴¹ World Bank (2013)

⁴² UNCDP (2015), p.1

⁴³ UNFCCC Decision 1/CP.16 (2010), par.95

⁴⁴ Ciplest et al. (2011), [p.1]

⁴⁵ Pacific Islands Forum Secretariat (2015)

⁴⁶ Warner et al. (2009), p.6

novel challenge: indeed, the context of adaptation to sea level rise in Pacific island States raises questions of international law that have yet to be authoritatively addressed. These grey zones, many of them unique to the subject at hand, are precisely what make the topic of this research worthy of additional academic attention. The identification and explanation of these issues will be the subject of the following chapter of this thesis.

3 Legal Issues

Scientists agree that climate induced sea level rise is happening and will accelerate in the course of the next century, although the exact pace and extent of this acceleration is still unclear⁴⁷. It is also agreed that no matter how sea level rise manifests itself, Pacific island States and their populations are set to face some effects to which they will have to react and adapt. But what consequences do these changes have for international law? Is international law currently equipped to function in this evolving context, or will a re-tooling of the existing rules, possibly even the creation of new norms and frameworks, be necessary in order to address problematic normative gaps and enable Pacific island States to adapt to sea level rise? This chapter identifies a number of areas of international law that can be expected to become increasingly relevant for Pacific island States in scenarios of sea level rise and attempts to determine if norms *de lege lata* can be relied upon as-is or if *de lege ferenda* proposals may be required. In doing so, this chapter distinguishes between two types of issues: on one hand, issues arising in a context where Pacific island States attempt to adapt to future sea level rise (*ex-ante*) and on the other hand, issues which could arise if adaptation is unsuccessful or insufficient (*ex-post*).

3.1 Ex-Ante Issues

Two main types of adaptation measures are available for vulnerable populations to adapt to sea level rise: *in-situ* measures, in which efforts are made to enable the local territory to

⁴⁷ Church et al. (2013), p.1197

withstand the changing conditions and remain habitable, and *ex-situ* measures, in which relocation away from the vulnerable area is operated in order to provide better living conditions to the population. Legal obstacles stand in the way of the proper articulation of both these types of adaptation: this is especially true for the geographically and economically vulnerable Pacific island States. The current section highlights these obstacles.

3.1.1 Obstacles to State-to-State Cooperation for Adaptation

The first paragraph of the preamble to the United Nations Convention on Climate Change states that “the Earth’s climate and its adverse effects are a common concern of humankind”⁴⁸. With this statement in mind, it is possible to identify three sets of international law obligations that the global community of states shares in the context of climate change: mitigation of the effects of climate change, adaptation to the effects for which mitigation was ineffective and protection of people negatively affected by those effects⁴⁹. The first two are covered in the international climate law treaty regime: their relationship to one another was discussed in section 2.2, where the existence of potential synergies between them was mentioned. One such synergy is here highlighted through an analysis and comparison of the relevant provisions.

On one hand, States Parties to climate treaties are subjected to substantive obligations on adaptation, as will be highlighted in the following subsection. These obligations could serve as a legal basis for Pacific island State requests for adaptation assistance. States’ mitigation obligations, on the other hand, are part of an array of negative obligations, or obligations “to abstain from”, rooted both in international treaties as well as in customary international law. These negative obligations could also become a basis for action on adaptation, inasmuch as their non-fulfillment could incur states’ responsibility and serve as grounds for reparation claims by Pacific island States and other states negatively affected

⁴⁸ UNFCCC (1992), preamble par.1

⁴⁹ Kälin and Schrepfer (2012), p.17

by climate change. A review of each of these two categories of obligations and a commentary on their practical use to Pacific island States is the subject of this section.

3.1.1.1 Positive Obligations for Climate Change Adaptation: The UNFCCC Regime

Even though the two legally binding multilateral climate treaties, the UNFCCC and its Kyoto Protocol, mainly address climate change mitigation, they both also contain provisions that codify obligations for States Parties regarding adaptation.

In the UNFCCC, all Parties to the Convention commit to “formulate, implement, publish and regularly update national and, where appropriate, regional programs containing [...] measures to facilitate adequate adaptation to climate change”⁵⁰, as well as to “cooperate in preparing for the adaptation to the impacts of climate change”⁵¹. Developed country Parties listed in Annex II of the Convention in addition commit to “assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects”⁵² and to “take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and knowhow to other Parties, particularly developing Parties [...] [in order to] support the development and enhancement of endogenous capacities and technologies of developing country Parties”⁵³. Small island States’ specific needs and concerns are to be given “full consideration”⁵⁴ in the implementation of these commitments, as are those of other categories of particularly vulnerable developing country Parties.

The Kyoto Protocol does not introduce any new obligations for States regarding adaptation, but rather reaffirms and further elaborates the content of some of the commitments taken under the Framework Convention. Notably, it specifies that “adaptation technologies and

⁵⁰ UNFCCC (1992), art.4(1) b)

⁵¹ *Id.*, art.4(1) e)

⁵² *Id.*, art.4(4)

⁵³ *Id.*, art.4(5)

⁵⁴ *Id.*, art.4(8) a)

methods for improving spatial planning” are important elements of the national and regional programs referred to in article 4(1) b) of the Convention⁵⁵ and that information on adaptation measures is to be included in the Parties’ communications to the Conference Secretariat⁵⁶. The Protocol also specifies that money generated through the Clean Development Mechanism (CDM), one of the four flexibility mechanisms introduced to help Parties with quantified emission reduction obligations to meet their targets, is to be used to “assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation”⁵⁷. This last provision is of great practical relevance⁵⁸ as it has led to the establishment of the Adaptation Fund in 2000⁵⁹. The Adaptation Fund, along with the Least Developed Country Fund (LDCF)⁶⁰, the Special Climate Change Fund (SCCF)⁶¹ and the Green Climate Fund (GCF)⁶² are currently the main channels established on a treaty basis for climate change adaptation funding. The adaptation funds of the climate regime have however suffered from underfunding⁶³ as well as governance and transparency problems⁶⁴. In addition, the four funds share very similar mandates: this has led to overlaps between them, thereby reducing efficiency⁶⁵.

Because of the challenges faced by the Funds, there is a possibility that Pacific island States end up not receiving the adaptation assistance they are entitled to as per the articles of the UNFCCC and the Kyoto Protocol. Two additional factors contribute to this uncertainty. First, the language used in the text of the provisions, such as “take all practicable steps to” and “assist”, suggests that no individual state has the obligation to bear the full

⁵⁵ Kyoto Protocol (1997), art.10b) (i)

⁵⁶ *Id.*, art.10b) (ii)

⁵⁷ *Id.*, art.12 (8)

⁵⁸ Verschuuren (2013), p.24

⁵⁹ UNFCCC Decision 1/CP.6 (2000), Annex Box A

⁶⁰ UNFCCC Decision 5/CP.7 (2001), par.12

⁶¹ *Id.*, par.19

⁶² UNFCCC Decision 1/CP.16 (2010), par.102

⁶³ Doelle et al. (2014), p.333

⁶⁴ Ciplet et al. (2011), [p.3]

⁶⁵ O’Sullivan et al. (2011), p.27

costs of adaptation in developing countries⁶⁶. This, along with the fact that each state's required contribution to the shared effort has so far not been quantified, opens the door for Parties to contribute in an insufficient manner while still technically meeting their obligation. Second, even if a state completely ignores its obligation of assistance, there is currently no legal mechanism for recipient countries to enforce compliance⁶⁷.

There have been some developments regarding the establishment of a Convention mechanism for loss and damage resulting *inter alia* from insufficient adaptation: institutional arrangements for such a mechanism were adopted at the 19th COP in Warsaw in 2013⁶⁸ but are still at an initial stage. A loss and damage mechanism would be useful on two levels. First, it would provide a way for recipient states to seek compensation for failures to provide assistance. Second, as observed by Verheyen, it could incidentally serve as "an added motivation to tighten effectiveness on mitigation and adaptation practice"⁶⁹. The mechanism however still faces strong opposition from some States Parties, notably the United States⁷⁰. Its operationalization is expected to take some years: a review of its structure, mandate and effectiveness is set for the 22nd COP in 2016⁷¹. Loss and damage is thus still an emerging concept in the UNFCCC regime⁷² and cannot be considered a solution as of today.

Overall, relying on climate treaty provisions *de lege lata* is not an optimal solution for Pacific island States to secure assistance for adaptation. Doing so would place them in a situation where they could be dependent on contributions from other actors without the prerogatives necessary to ensure a constant and predictable delivery of these contributions. This

⁶⁶ Tol and Verheyen (2004), p.1115

⁶⁷ *Ibid.*

⁶⁸ UNFCCC Decision 2/CP.19 (2013), par.1

⁶⁹ Verheyen (2012), p.11

⁷⁰ UNFCCC Document FCCC/SBI/2012/MISC.14/Add.1 (2012), p.35

⁷¹ UNFCCC Decision 2/CP.19 (2013), par.15

⁷² Verheyen (2012), p.3

could place Pacific island States in a position of instability, which would limit their capacity to adapt.

3.1.1.2 Negative Obligations: Adaptation Assistance as Reparation

State-to-state obligations for adaptation assistance could also be inferred from the more general obligation to refrain from causing transboundary harm. The prohibition of such harm is a well-established customary rule in international law. It was crystallized in the 1941 *Trail Smelter* arbitration between the United States and Canada. The arbitral tribunal in the case stated that:

[U]nder the principles of international law, [...] no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.⁷³

The principle was reaffirmed in the 1972 Stockholm Declaration⁷⁴ and in the 1992 Rio Declaration on Environment and Development⁷⁵. It is also codified in many international treaties. Of special importance to Pacific island States, the principle has been referred to in the climate regime in the preamble of the UNFCCC⁷⁶, as well as in the context of the protection of the marine environment in article 194.2 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS)⁷⁷. Its status as a rule of customary international law was reiterated, and its geographical scope broadened, in the 1996 International Court of Justice (ICJ) Advisory Opinion on the *Legality of the Threat or Use of Nuclear Weapons*. The Court here indeed stated that “the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States” also applies to “areas beyond national control”⁷⁸.

⁷³ United States v. Canada (1941), p.1965

⁷⁴ Declaration of the United Nations Conference on the Environment (1972), principle 21

⁷⁵ Rio Declaration on Environment and Development (1992), principle 2

⁷⁶ UNFCCC (1992), preamble par.8

⁷⁷ UNCLOS (1982), art.194.2

⁷⁸ *Legality of the Threat or Use of Nuclear Weapons* Advisory Opinion (1996), par.29

The “no-harm rule”, as it is often referred to, can hence be said to contain an obligation for States not to cause environmental damage outside their territory themselves, as well as a corollary obligation to supervise the activities of actors operating in their territory in order to ensure that these activities do not cause environmental damage. This is known as a “due diligence” obligation⁷⁹. Under international law, a breach by a State of one of its obligations constitutes an internationally wrongful act and entails that State’s responsibility: this principle can be traced back to the Permanent Court of International Justice’s 1928 decision in the *Chorzów Factory Case*⁸⁰, and was more recently restated in the ILC’s 2001 Draft Articles on the Responsibility of States for Internationally Wrongful Acts (hereafter ILC Draft Articles)⁸¹. In a scenario where the greenhouse gas emissions originating in other countries cause damage to the environment of Pacific island States, the latter could attempt to invoke the former’s breach of its obligation under the no-harm rule and demand reparation. According to the ILC Draft Articles, reparation can be provided through restitution, compensation or satisfaction, either singly or in combination⁸². Restitution, which implies a return to the situation in place before the occurrence of the wrongful act⁸³, could be impossible in the context of climate change: sea level rise and coastal erosion can hardly be undone. Compensation⁸⁴ would be a more realistic form of reparation. This financial compensation could serve as adaptation assistance by supporting national adaptation programs and other measures to limit further damage.

A state attempting to invoke another state’s responsibility for damages resulting from the effects of climate change would however likely meet certain obstacles. Indeed, it has been established that four elements are necessary in order to successfully invoke state responsibility under international law: (i) a damaging activity attributable to a state; (ii) a link be-

⁷⁹ Koivurova (2010), par.1

⁸⁰ *Factory at Chorzów (Merits)* Judgement (1928), at 47

⁸¹ ILC Draft Articles on the Responsibility of States for Internationally Wrongful Acts (2001), art.1

⁸² *Id.*, art.34

⁸³ *Id.*, art.35

⁸⁴ *Id.*, art.36

tween this damaging activity and a breach of an international obligation; (iii) a causal link between the activity and the damage and; (iv) demonstration that the breached international obligation was owed to the claiming state⁸⁵. Of these, elements (ii) and (iii) in particular could prove difficult to establish in the present context.

First, it could be difficult for claimant states to demonstrate the illegal nature of emissions of greenhouse gases as required by element (ii). Those emissions, it can be argued, were not unlawful under international law until relatively recently, and are now only so for Parties to the UNFCCC as they do not yet constitute customary international law obligations. Tol and Verheyen suggest that the adoption of the UNFCCC by the Parties in 1992 proves their acknowledgement of the unlawfulness of excessive emissions and that as such, their lack of action on emission reduction from that moment on could constitute a breach of their obligation of due diligence under the no-harm rule⁸⁶. But it is not clear if emissions predating that moment could be qualified as unlawful. It can be argued that the dynamics of climate change were not as well understood at the time and the harmfulness of greenhouse gases not as clearly established: consequently, the degree to which States had to supervise these emissions – the required standard of care – might have been lower. Article 13 of the ILC Draft Articles states that “an act of a State does not constitute a breach of an international obligation unless the State is bound by the obligation in question at the time the act occurs”⁸⁷. Considering that studies by climate scientists show that the world is currently experiencing the effects of emissions dating as far back as 20 years ago⁸⁸, it could be possible for states to claim that, at the time the damaging activity was committed, their obligation of due-diligence either did not exist or was much less stringent than after the adoption of the UNFCCC. As such, they could argue that their previous emissions do not fall under Draft Article 2’s definition of an internationally wrongful act and that their responsibility is therefore not engaged.

⁸⁵ Tol and Verheyen (2004), p.1111

⁸⁶ *Id.*, p.1118

⁸⁷ ILC Draft Articles on the Responsibility of States for Internationally Wrongful Acts (2001), art.13

⁸⁸ Wetherald et al. (2001), p.1537

The second obstacle to invoking states' responsibility for climate change damage pertains to the causal link between the emissions and the damage experienced by the claimant state. There is today scientific consensus over the anthropogenic nature of climate change. As the IPCC stated in its Fifth Assessment Report, "human influence on the climate system is clear. This is evident from the increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and understanding of the climate system"⁸⁹. This leads to believe that a general causal link between the emissions of greenhouse gases and the effects of climate change could be established. In order for an emitter State's responsibility to be invoked, however, the additional demonstration of a direct causal link between that State's own emissions and the damage felt by the claimant is needed: this specific causation could be difficult to prove⁹⁰. Indeed, the causes and effects of climate change damage can occur very far away from each other geographically, and as explained above an important chronological gap also separates them. In addition, the causes of climate change are very diffuse: every country, albeit to a different degree, can be said to have contributed to it. While the ILC Draft Articles recognize that there can be cases where more than one state may be held responsible for the same wrongful act⁹¹, the Commentary to those articles distinguishes between these and cases "where several States by separate internationally wrongful conduct have contributed to the same damage"⁹², for example cases where "several States might contribute to polluting a river by the separate discharge of pollutants"⁹³. According to the Commentary, "in such cases, the responsibility of each participating State is determined individually, on the basis of its own conduct and by reference to its own international obligations"⁹⁴. Climate change damage can be likened to this latter category: each state's separate emission of greenhouse gases contributed to the problem. Following this reasoning, it could be argued that an affected state needs to establish specif-

⁸⁹ IPCC (2013), p.15

⁹⁰ Voigt (2008), p.15

⁹¹ ILC Draft Articles on the Responsibility of States for Internationally Wrongful Acts (2001), art.47

⁹² ILC (2001), p.125

⁹³ *Ibid.*

⁹⁴ *Ibid.*

ic causation between an emitter state's own conduct and the harm suffered, which would, as observed by Kälin and Schrepfer, "impose an extremely high burden of proof on affected states"⁹⁵.

The uncertainties outlined above would thus make it difficult for states affected by climate change, like Pacific island States, to invoke emitter states' responsibility in order to obtain compensation for their loss. The current state of affairs does not hint towards any progress in the matter: as noted by Brunée, "it seems that states are not anxious to resolve the ambiguities, as they serve as a convenient buffer against state responsibility"⁹⁶. As such, from a legal perspective, it is not clear whether the rules on state responsibility constitute an avenue through which Pacific island States could obtain adaptation assistance as compensation for climate change damage. It must however be noted that the concept of state responsibility, even if legally unsettled, can still be of some use for damaged states as a form of political leverage. The 2010 initiative of the then-president of Palau is a good example of this. His campaign for the submission of a request to the ICJ for an Advisory Opinion on the topic of states' obligations regarding greenhouse gas emissions from their territories⁹⁷ has as of today not received the support necessary to be followed through, but has led to increased dialog between Palau and major emitters like the US and Germany through the UNFCCC forum⁹⁸.

3.1.2 Obstacles to Gateways for Adaptive Migration

Even before the advent of anthropogenic climate change, the inhabitants of Pacific island States were often accustomed to living in and adapting to precarious environmental conditions. As Barnett and Campbell note, "some of the environments in which [Pacific island] communities have survived are remarkably inhospitable, and that communities have sur-

⁹⁵ Kälin and Schrepfer (2012), p.10

⁹⁶ Brunée (2004), p.354

⁹⁷ For more details on the campaign, see Yale Center for Environmental Law and Policy (2013)

⁹⁸ Kindra (2014)

vived in them for so long is testimony to their ability to adapt to difficult circumstances”⁹⁹. They state as an example atoll islands, where despite scarce resources and frequent extreme weather events communities have lived for over 2000 years. These traditionally resilient communities have however had to face new challenges over the last two centuries: high demographic growth and rapid urbanization, both results of a shift from a subsistence-based lifestyle to a market-based economy under colonial rule, brought along increasing social tensions as well as economic and environmental problems¹⁰⁰. These problems are often interrelated: for example, the risks to health caused by the high prevalence of infectious diseases in Pacific Island urban areas can be linked to, among other factors, overpopulation, absence of proper sanitation facilities and poor land quality¹⁰¹. In this context, climate change acts not as a separate threat to Pacific Island populations but rather as an additional factor exacerbating existing weaknesses. For instance, in the aforementioned case of health risks, climate induced sea level rise increases the occurrence of floods and groundwater contamination, both likely to lead to more outbreaks of disease¹⁰².

In a scenario in which the already precarious living conditions in Pacific Island countries worsen due to the effects of sea level rise, migration would be a potential solution for the islands’ inhabitants. According to some, if no further mitigation measures are taken and no effort is made to protect vulnerable groups where they stand, migration could even become the only alternative¹⁰³. If that is the case, it can be expected that at least some of the migration would be international because of the Pacific Islands’ geographical situation. In international law, forced migration is conceptualized as a protection issue, which as mentioned in the previous section is the third category of obligations shared by UNFCCC member states. Adaptive migration however differs from protective migration in scope and application: can established protection frameworks apply to it? In an attempt to answer this ques-

⁹⁹ Barnett and Campbell (2010), p.33

¹⁰⁰ Connell and Lea (2002), p.35

¹⁰¹ Asian Development Bank (2012), p.17

¹⁰² *Ibid.*

¹⁰³ Pigué (2008), p.8

tion, two potentially relevant areas of human rights law will be analyzed: international refugee law and the norms underpinning complementary protection mechanisms.

3.1.2.1 International Refugee Law

For many, “environmental refugee” is what first comes to mind when the topic of climate-induced migration is discussed. The term was popularized by UNEP Researcher Essam El-Hinnawi in the 1980s, who defined environmental refugees as

Those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life. By “environmental disruption” in this definition is meant any physical, chemical, and/or biological changes in the ecosystem (or resource base) that render it, temporarily or permanently, unsuitable to support human life.¹⁰⁴

The term has since been frequently referred to in social sciences fields¹⁰⁵. More recently, various authors have suggested the existence of different subcategories of environmental refugees, based on criteria such as the nature of the environmental threat causing the migration or the duration of the displacement¹⁰⁶. Possibly because of the powerful images it evokes, the notion has also been mentioned in high-level political declarations¹⁰⁷ and regularly picked up by the media¹⁰⁸. Proponents of the environmental refugee concept argue that people displaced against their will due to natural causes deserve to be eligible to similar protection as those fleeing their country in fear of violence or persecution. They should thus benefit from the *non-refoulement* rule¹⁰⁹, which guarantees the right not to be returned to their home country if doing so would constitute a threat to their life or freedom.

¹⁰⁴ El-Hinnawi (1985), p.4, as noted by Bates (2002), p.466

¹⁰⁵ Black (2001), p.1

¹⁰⁶ *Id.*, p.2

¹⁰⁷ See statement of President Lauti of Tuvalu, as noted in UNFCCC (2005), p.13

¹⁰⁸ For example, see Vidal (2009)

¹⁰⁹ United Nations Refugee Convention (1951), art.33

Several authors however disapprove of the use of the term, which they consider misleading¹¹⁰. Indeed, in the different international refugee law instruments, the word “refugee” is clearly defined and has a limited scope. Its definition can be found in article 1a) (2) of the main multilateral agreement on the matter, the 1951 Convention relating to the Status of Refugees (hereafter referred to as Refugee Convention), as amended by article 1(2) of the 1967 Protocol relating to the Status of Refugees. According to this article, the term “refugee” applies to

[A]ny person who [...] owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership to a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.¹¹¹

It must be noted that a person must meet all of the requirements of article 1a) (2) in order to qualify as a refugee as per the definition of the Convention¹¹². As such, it is unlikely that climate migrants could benefit from the status, since the cause of their movement does not fall under the five grounds of persecution listed in the article. Indeed, the effects of climate change, even though they might *de facto* affect certain vulnerable groups more than others, cannot be said to constitute an act of persecution. The United Nations High Commissioner for Refugees (UNHCR) agrees with this interpretation: it states that “climate-induced displacement was not considered by the drafters when formulating the above definition”¹¹³. The Committee however indicates that in some cases, migration resulting from environmental causes could potentially qualify for refugee status and protection. It gives the example of victims of environmental disasters fleeing their country as a result of their government deliberately failing to assist them in order to persecute them on one of the five

¹¹⁰ McAdam (2012), p.40; Kälin (2010). p.88; Martin (2010), p.3

¹¹¹ Refugee Convention (1951), art.1a)(2)

¹¹² Gromilova and Jägers (2013), p.81

¹¹³ UNHCR (2009), p.9

grounds listed in the definition. The Committee nevertheless concludes that “such cases are likely to be few”¹¹⁴.

In some countries, court practice has already begun to emerge on this issue. The New Zealand Court of Appeal’s 2014 decision in the *Teitiota* case¹¹⁵ more specifically confirms that Pacific islanders migrating to neighboring countries in response to the effects of sea level rise fall outside of the Refugee Convention’s definition of refugee. In the case, applicant Ioane Teitiota, a Kiribati national who had overstayed his residence permit to New Zealand, had appealed a decision of the New Zealand Immigration and Protection Tribunal denying him the status of refugee under the country’s Immigration Act. In its judgement, the Court confirms the first instance decision, which stated that since article 129(1) of the Immigration Act based admissibility to refugee status on the criteria of article 1(a) (2) of the Refugee Convention, the status could not be granted to Teitiota because the effects of sea level rise did not qualify as persecution under the Convention¹¹⁶. The Court concludes by stating that “no-one should read this judgment as downplaying the importance of climate change. [...] The point this judgment makes is that climate change and its effects on countries like Kiribati is not appropriately addressed under the Refugee Convention”¹¹⁷.

In parallel to the Refugee Convention, relevant instruments can be found at the regional level. These agreements have the advantage of recognizing additional criteria that could potentially serve as grounds for migrants from countries affected by climate change to obtain the status of refugee. Both the 1969 African Union Convention Governing the Specific Aspects of Refugee Problems in Africa and the 1984 Organization of American States Cartagena Declaration of Refugees indeed include as refugees people compelled to flee due to events “seriously disturbing public order”¹¹⁸. It would however still be problematic for Pa-

¹¹⁴ *Id.*, p.10

¹¹⁵ *Teitiota v The Chief Executive of Ministry of Business, Innovation and Employment* (2014)

¹¹⁶ *Id.*, par.21

¹¹⁷ *Id.*, par.41

¹¹⁸ African Union Refugee Convention(1969), art.1(2) and Cartagena Declaration on Refugees (1984), Conclusion 3

cific islanders to meet the criteria set forth in these agreements: similarly to the Refugee Convention, they include in their definition the requirement that a person must be “compelled to leave”¹¹⁹ or already “have fled”¹²⁰ his or her home country in order to benefit from the status of refugee. This requirement is ill fitted for Pacific islanders, who are more likely to require pre-emptive assistance while still in their home country. What’s more, the exact scope of the additional criterion has yet to be clearly established by state practice¹²¹. In this context, the effects of sea level rise, more gradual in nature than those of sudden natural disasters, risk not being recognized as “events disturbing public order”. It thus appears that regional treaties, in a similar manner to the Refugee Convention, cannot be relied upon in its current state by Pacific islanders migrating in response to sea level rise.

3.1.2.2 Complementary Protection

The above-discussed framework of international refugee law is in fact a subset, or *lex specialis*, of the broader field of international human rights law¹²². Outside of this subset, there are other norms that can be relied upon by persons whose rights are threatened by the effects of climate change. All three of the main multilateral human rights treaties, namely the Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic and Social Rights (ICESCR), establish rights whose fulfillment requires a sufficiently safe and hospitable environment. The international community has acknowledged this in the 1972 Stockholm Declaration¹²³. The necessity of a clean environment as a prerequisite for other rights has also been referred to by ICJ judge Weeramantry in his separate opinion in the *Gabčíkovo-Nagymaros* judgement. There, he writes that “the protection of the environment is [...] a

¹¹⁹ African Union Refugee Convention (1969), art.1(2)

¹²⁰ Cartagena Declaration on Refugees (1984), Conclusion 3

¹²¹ McAdam (2012), p.48

¹²² Gromilova and Jägers (2013), p.89

¹²³ Declaration of the United Nations Conference on the Environment (1972), principle 1

vital part of contemporary human rights doctrine, for it is a *sine qua non* for numerous human rights such as the right to health and the right to life itself¹²⁴.

Additionally to the right to health¹²⁵ and the right to life¹²⁶, the enjoyment of a number of recognized fundamental human rights can be said to depend on a healthy environment, including but not restricted to the right to an adequate standard of living¹²⁷ and the right to safe and healthy work conditions¹²⁸. It has been argued that in order for environmental considerations to receive the attention they deserve in the field of human rights, a distinct human right to a clean or satisfactory environment should be recognized¹²⁹. As of today however, this has yet to happen: textual references to a right to a clean environment remain “largely absent from the relevant global and regional treaties”¹³⁰.

In the context of migration, human rights norms serve three main purposes¹³¹. First, they set out minimum standards of treatment that must be provided by their home state. Second, if those standards are not respected, they can provide a basis on which protection, and relocation, may be sought: this has been defined as complementary protection¹³². Third, in similar fashion to what was required of the home state, the human rights norms require of the country granting complementary protection to observe minimum standards of treatment in accordance with human rights principles.

Complementary protection, as its name implies, is a protection regime that complements the Refugee Convention. It can be defined as “a form of human rights or humanitarian pro-

¹²⁴ *Case Concerning the Gabčíkovo-Nagymaros Project* (1997), p.91

¹²⁵ ICESCR (1966), art.12

¹²⁶ UDHR (1948), art.3 and ICCPR (1966), art.6

¹²⁷ UDHR (1948), art.25 and ICESCR (1966), art.11(1)

¹²⁸ ICESCR (1966), art.7b)

¹²⁹ Boyle (2010), p.39

¹³⁰ *Ibid.*

¹³¹ McAdam (2012), p.52

¹³² McAdam (2007), p.20

tection triggered by States' expanded *non-refoulement* obligations"¹³³. As complementary protection is not part of the international refugee law treaty framework, it is operated by domestic law. As such, the specific procedure of different states' mechanisms varies, as does the term used to define the complementary protection: "de facto refugee status", "B status", "humanitarian asylum" and "temporary protected status cases" are but a few examples of terms used¹³⁴. All these domestic mechanisms however share the same main function: to set up a process for states to grant protection to individuals falling outside of the Refugee Convention but entitled to protection under the human rights law principle of *non-refoulement*, which is today considered a part of customary international law¹³⁵.

Complementary protection could potentially be relied upon by migrants requiring protection but not considered as refugees under the 1951 Convention. Upon review of different states' domestic protection mechanisms¹³⁶, it is however possible to identify two recurring obstacles to the application of complementary protection to Pacific Islanders. The first lies in the fact that environmental harm stemming from the effects of climate change has yet to be recognized as the single cause of a breach of human rights. Indeed, although it has been recognized by courts that man-made environmental degradation could have human rights implications¹³⁷, the same is not true for the effects of climate change, which are difficult to attribute to a single actor. Knowing that a demand for complementary protection must be in response to an identifiable breach of minimum standards by the home state, the diffuse nature of the causes of climate change thus would make it difficult for a claimant to establish a causal link strong enough to obtain protection.

¹³³ *Id.*, p.21

¹³⁴ UNHCR Document EC/1992/SCP/CRP.5 (1992), par.16

¹³⁵ Declaration of States Parties to the 1951 Convention and or Its 1967 Protocol Relating to the Status of Refugees (2002), preamble par.4

¹³⁶ For the purposes of this section, the domestic protection mechanisms of Canada, New-Zealand and the European states were reviewed. For a comprehensive review of European states' mechanisms, see ECRE (2009)

¹³⁷ Lopez Ostra vs. Spain, par.51

The second obstacle is the requirement of “specific harm” imposed by a number of complementary protection mechanisms. According to this criterion, an applicant must demonstrate that his or her individual situation justifies the protection and that the harm invoked is not widespread or generalized. The Legal Services division of the Immigration and Refugee Board of Canada, for example, has stated that in the case of a person applying for complementary protection under section 97 of the Canadian Immigration and Refugee Protection Act¹³⁸, a “claim based on natural catastrophes such as drought, famine, earthquakes, etc. will not satisfy the definition as the risk is generalized”¹³⁹.

The judgement in a 2014 New Zealand case illustrates how these two limitations can manifest themselves in the context of Pacific islanders and sea level rise¹⁴⁰. The case concerns two citizens of Tuvalu who had filed humanitarian appeals in order to obtain the right to remain in New Zealand. They had based their claims on the close bond uniting their family and their children to New Zealand as well as on the risk the family faced of suffering the adverse impacts of climate change and the associated socio-economic deprivation if they were returned to their home country. The Tribunal gave way to the appellants’ claim and granted them residency on the basis of their personal situation. It however notably abstained from reaching any conclusion as to their claims in relation to the effects of climate change¹⁴¹, instead justifying its decision on the “cumulative basis”¹⁴² of their other arguments. Additionally, the Tribunal reaffirmed that “the evidence in appeals such as this must establish not simply the existence of a matter of broad humanitarian concern, but that there are exceptional circumstances of a humanitarian nature such that it would be unjust or unduly harsh to deport *the particular appellant* from New Zealand”¹⁴³. The case thus demonstrates how the causal link and the “specific harm” criteria are applied in situations involving Pacific islanders. It can be concluded that these criteria could act as obstacles to the

¹³⁸ Canadian Immigration and Refugee Protection Act (2001), art.97(1)

¹³⁹ Immigration and Refugee Board of Canada (2002), p.9

¹⁴⁰ *AD (Tuvalu)* Decision (2014)

¹⁴¹ *Id.*, par.33

¹⁴² *Id.*, par.30

¹⁴³ *Id.*, par.32

application of complementary protection mechanisms in cases where appellants' situations do not otherwise qualify them for residency.

It must be noted that some states address environmental migration more directly in their domestic complementary protection mechanisms. Sweden and Finland have indeed adopted asylum legislation explicitly granting similar protection as is granted to refugees to victims of “environmental disaster”¹⁴⁴ and “environmental catastrophe”¹⁴⁵ respectively. The Swedish mechanism would not apply to victims of sea level rise, since “according to the Division for Migration and Asylum Policy at the Swedish Ministry of Justice, [it] is based on a preparatory foundation that limits its applicability to cases of sudden environmental disasters and does not extend to cases of continuous environmental decline”¹⁴⁶. The Finnish mechanism, on the other hand, could apply to sea level rise and other slow onset phenomena, since its *travaux préparatoires* “include a specific reference to cases when the alien’s home environment has become too dangerous for human habitation either because of human actions or as a result of natural disaster”¹⁴⁷. National legislation modeled after the Finnish approach could thus be a solution for Pacific island States. As of today, however, Finland’s mechanism is the exception to the rule¹⁴⁸ and does not constitute an appropriate solution for Pacific island migrants, especially so because of the great distance separating the countries.

Overall, it can be concluded that in their current state, neither international refugee law nor the existing complementary protection mechanisms constitute appropriate frameworks in respect to the adaptation needs of Pacific islanders affected by sea level rise. Further innovation is needed in order to define climate migrants’ status under international law. Notably, it remains to be determined whether climate migrants should benefit from protection in

¹⁴⁴ Sweden Aliens Act (2005), Chapter 4, Section 2(3)

¹⁴⁵ Finland Aliens Act (2004), Section 88a(1)

¹⁴⁶ Swedish Ministry of Justice, as quoted by Glahn (2009)

¹⁴⁷ *Travaux préparatoires* to the Finland Aliens Act (2004), as quoted by Glahn (2009)

¹⁴⁸ Mayer (2011), p.383

virtue of their status, or if a legal mechanism with roots outside the human rights protection paradigm would be more appropriate.

3.2 Ex-Post Issues

While the previous section analysed existing frameworks with a view to assessing their use for *ex-ante* adaptation to future scenarios of sea level rise, the current section instead opts for an *ex-post* approach. Indeed, it attempts to underline the legal issues which could arise in contexts where sea level rise, either because of insufficient or ineffective adaptation, ends up having significant consequences on Pacific islands' territories and populations. The first part of the analysis focuses on the effects of sea level rise on the maritime zones of Pacific island States. An important rise in sea level could also have implications for the island nations' sovereignty and, ultimately, statehood: this is discussed in the second part of the analysis.

3.2.1 Baselines and Maritime Zones

Pacific island States' maritime zones are of significant importance to those countries. They are geographically very substantial, especially in relation to the islands' often small land territories¹⁴⁹. The resources situated in these maritime areas are also greatly relied upon by island States for income: even if they traditionally have not exploited the fish stocks in their maritime zones on a commercial scale¹⁵⁰, many of them benefit from the sale of fishing rights within their maritime zones to foreign-owned operations¹⁵¹. The licensing of rights for deep-sea mining is another profitable activity that some Pacific island States have planned to establish in the future, although environmental and commercial feasibility concerns appear to have slowed down the development of this industry¹⁵². Any negative impact on these resources or their ownership could thus have important consequences for the

¹⁴⁹ Yamamoto and Esteban (2014), p.124

¹⁵⁰ Hannesson (2008), p.889

¹⁵¹ Hezel (2012), p.13

¹⁵² Carius et al. (2009), p.3

islands' already fragile economies and would further diminish their capacity to adapt to climate change. Sea level rise, by leading to the submergence of coastal land, could alter Pacific island States' geography to the point where uncertainties regarding their rights over some extents of their maritime zones could arise. A review of the relevant international law provisions confirms this possibility.

The provisions pertaining to coastal state sovereignty, sovereign rights and jurisdiction over its adjacent maritime zones are found in the 1982 United Nations Convention on the Law of the Sea (UNCLOS). They are based on the principle that “the land dominates the sea” which is today considered to be a general principle of international law¹⁵³. The UNCLOS provisions in fact refine the scope of the principle, leading it to have “a decreasing effect upon legal regimes of the sea when the distance from the coast increases”¹⁵⁴.

The main line from which maritime zones are determined is called the baseline. The *normal baseline* is defined in article 5 of the UNCLOS as “the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State”. Under certain circumstances, states can trace their baseline in an alternate manner to the one prescribed in article 5. Islands situated on atolls or having fringing reefs can draw their baseline from the low-water line of those reefs¹⁵⁵, while localities where the coastline is deeply indented, cut into or bordered by a fringe of islands¹⁵⁶ and areas where the coastline is highly unstable due to the presence of a delta and other natural conditions¹⁵⁷ are allowed to trace *straight baselines* joining determined points. Archipelagic states are also entitled to, under certain conditions, draw straight baselines joining the outermost points of its islands or reefs as an alternative to the normal baseline¹⁵⁸.

¹⁵³ Jia (2014), p.3

¹⁵⁴ *Id.*, p.9

¹⁵⁵ UNCLOS (1982), art.6

¹⁵⁶ *Id.*, art.7(1)

¹⁵⁷ *Id.*, art.7(2)

¹⁵⁸ *Id.*, art.47

From the baseline, the coastal state's different maritime zones are measured. Waters inside the baseline are considered the internal waters of the state¹⁵⁹, while the area extending up to twelve nautical miles outside of the baseline is defined as its territorial sea¹⁶⁰. Beyond and adjacent to the territorial sea lies the exclusive economic zone (EEZ), which extends up to 200 nautical miles from the baseline¹⁶¹. The territorial sea, geographically nearer to the state's territory and smaller in size, is subjected to a higher degree of control by the coastal state than the EEZ. Indeed, the coastal state exercises sovereignty over its territorial sea, its bed and subsoil as well as the air space over it¹⁶². In contrast, the EEZ is subjected to more limited control, as specified in article 56 of the UNCLOS: the coastal state's prerogatives over the Zone mainly concern sovereign rights over the exploitation and management of the natural resources in its water column, seabed and subsoil, as well as certain aspects of jurisdiction¹⁶³.

In addition to the rights over the territorial sea and the EEZ, certain rights are granted under the UNCLOS to the coastal state over its continental shelf. This area is defined as "the seabed and subsoil of the submarine areas that extend beyond its territorial sea" and can extend to the furthest of either 200 nautical miles from the baseline, which is in line with the limit of the EEZ, or the outer edge of the continental margin¹⁶⁴. The latter point is measured by taking into account the geomorphological characteristics of the state's shelf¹⁶⁵ and cannot exceed a distance of 350 nautical miles from the baseline or 100 nautical miles from the 2500 metre isobath (the line connecting the depth of 2500 metres)¹⁶⁶. Coastal states wishing to avail themselves of a continental shelf extending beyond 200 nautical miles from the baseline must submit information about their measurements to the Commission on

¹⁵⁹ UNCLOS (1982), art.8

¹⁶⁰ *Id.*, art.3

¹⁶¹ *Id.*, art.57

¹⁶² *Id.*, art.2

¹⁶³ *Id.*, art.56

¹⁶⁴ *Id.*, art.76(1)

¹⁶⁵ *Id.*, art.76(4), (5) and (7)

¹⁶⁶ *Id.*, art.76(5)

the Limits of the Continental Shelf, who then makes recommendations on the basis of which the coastal state establishes its “outer” continental shelf limit¹⁶⁷.

Even though UNCLOS itself does not expressly confirm the ambulatory nature of baselines¹⁶⁸, the fact that it provides for two situations where maritime zone limits are permanently fixed, namely for the establishment of an extended continental shelf under article 76(8) and for the establishment of straight baselines in highly unstable delta situations under article 7(2) – the so-called “Bangladesh exception” – has led many experts to conclude that other baselines established by the Convention are *a contrario* not fixed¹⁶⁹. According to this interpretation, as sea level rise affects the geographical features that serve as relevant points for the determination of the outer limits of the zone, for example by causing the low-tide line to move closer to the coast or by submerging low-tide elevations, it would cause the baseline to shift, moving inwards towards the land. The boundaries of the maritime zones delimited by the baseline would then move accordingly: the consequence of this would be an overall landward shift of the maritime area under control of the coastal state, the outermost portion of the former EEZ becoming part of the high seas and the outermost portion of the former territorial sea falling under the EEZ regime¹⁷⁰. This would effectively shorten the radius of maritime area over which the coastal state is entitled to exercise its rights.

Sea level rise could in this manner significantly affect the coastal rights of Pacific island States under international law. In addition to the UNCLOS, many islands’ domestic legal provisions on the subject further contribute to the uncertainty surrounding the nature of their baselines. Indeed, the maritime zone laws of most Pacific island States were prepared with the help of the Commonwealth Secretariat during the 1970s¹⁷¹: this was done following a common model according to which the baseline is defined as the low-water line, ex-

¹⁶⁷ UNCLOS (1982), art.76(8)

¹⁶⁸ Di Leva and Morita (2008), p.17

¹⁶⁹ Caron (1990) p.634 , Soons (1990) p.216, Freestone (1992), p.111

¹⁷⁰ Hayashi (2011), p.190

¹⁷¹ Rayfuse (2013), pp.183-184

cept for atoll islands or islands with fringing reefs. The domestic laws of all fourteen either fully independent (Fiji¹⁷², Kiribati¹⁷³, Nauru¹⁷⁴, Papua New Guinea¹⁷⁵, Samoa¹⁷⁶, the Solomon Islands¹⁷⁷, Tonga¹⁷⁸, Tuvalu¹⁷⁹ and Vanuatu¹⁸⁰) or constitutionally independent (the Cook Islands¹⁸¹, the Federated States of Micronesia¹⁸², the Marshall Islands¹⁸³, Niue¹⁸⁴ and Palau¹⁸⁵) Pacific island States follow this model. The language used in the domestic legislation can be seen as corroborating the ambulatory baseline interpretation of UNCLOS provisions. Moreover, it is possible that for Pacific islands, the domestic provisions themselves could prove problematic even without a clear answer as to the nature of baselines under the UNCLOS. As one author explains, “in the absence of any declaration of straight or archipelagic baselines, should the low-water line move, the baselines will move – not as an effect of the operation of international law but rather as an effect of these states’ own domestic law”¹⁸⁶.

Because of these domestic provisions, Pacific island States that have declared and published straight or archipelagic baselines, namely Fiji, Kiribati, Papua New Guinea, Nauru, Tuvalu, The Solomon Islands and Vanuatu¹⁸⁷, could conversely benefit from a “presumption of permanence”¹⁸⁸ regarding the validity of their published coordinates and consequently of their maritime zones. This presumption however does not mean that those states’ rights are secured indefinitely: the submergence of one of the points used to draw a base-

¹⁷² Fiji Marine Spaces Act 1977, subsection 3(1)

¹⁷³ Kiribati Marine Zones (Declaration) Act 1983, subsection 2(1)

¹⁷⁴ Nauru Sea Boundaries Act 1997, subsection 2(1)

¹⁷⁵ Papua New Guinea National Seas Act 1978, subsection 1(1)

¹⁷⁶ Samoa Maritime Zones Act 1999, subsection 6c)

¹⁷⁷ Solomon Islands Delimitation of Marine Waters Act 1978, subsection 5(3)

¹⁷⁸ Tonga Territorial Sea and Exclusive Economic Zone Act 2007, subsection 5(1)b)

¹⁷⁹ Tuvalu Maritime Zones Act 2012, subsection 7(1)

¹⁸⁰ Vanuatu Maritime Zones Act 2010, section 4

¹⁸¹ Cook Islands Territorial Sea and Exclusive Economic Zone Act 1977, subsection 5b)

¹⁸² Code of the Federated States of Micronesia, subsection 101(1)

¹⁸³ Marshall Islands Revised Code, Title 33, subsection 102(1)a)

¹⁸⁴ Niue Maritime Zones Act 2013, section 4

¹⁸⁵ Palau Marine Protection Act 1994, section 141

¹⁸⁶ Rayfuse (2013), p.184

¹⁸⁷ UNCLOS (2015)

¹⁸⁸ Rayfuse (2013), p.183

line could still *de facto* lead to the loss of that baseline and thus affect the size of the maritime zones claimable by a state¹⁸⁹. In addition to not qualifying as proper archipelagic baseline points, islands, even if not completely submerged, could altogether lose their right to an economic zone and a continental shelf if they become unable to “sustain human habitation or [an] economic life of their own”¹⁹⁰.

In cases where coordinates have been published, this would not happen automatically. A situation could however arise where another state, having an interest in the area in question, could be tempted to oppose a geographical change of circumstance to the presumed baseline, for example in order to gain access to the resources within this area. The possibility of disagreement over baselines and maritime zones could encourage wasteful spending by states wishing to protect their baselines and lead to conflict¹⁹¹. This should preferably be avoided, as states cannot afford to use their resources in a counterproductive manner when they could instead be invested in adaptation measures. More generally, the effects of sea level rise on baseline and maritime zone legislation could undermine the certainty, predictability and stability that the law of maritime delimitation seeks to establish¹⁹². For these reasons, the law of the sea provisions regarding baselines, maritime zones and coastal state rights must be clarified.

3.2.2 Statehood and Sovereignty

Depending on the extent of the rise in sea-level and the success of *ex-ante* adaptation measures, some Pacific island States could face consequences more far-reaching than a loss of rights over maritime zones. Indeed, the low-lying atoll island states Kiribati, Tuvalu and the Marshall Islands, because of their unique geography, could undergo changes which

¹⁸⁹ Yamamoto and Esteban (2014), p.130

¹⁹⁰ UNCLOS (1982), art.121(3), as noted by Freestone (1992), p.112

¹⁹¹ Caron (1990), p.636

¹⁹² Vidas (2014), p.77

would make them practically uninhabitable¹⁹³. In such a case, these states could then find themselves in a position where they no longer fulfill some of the required criteria for statehood: this could put their very existence as a state under international law at risk.

The four basic criteria required in order to qualify for statehood are listed in article 1 of the 1933 Montevideo Convention on the Rights and Duties of States. They are: a) a permanent population; b) a defined territory; c) government; and d) capacity to enter into relations with the other states¹⁹⁴. As one leading expert on the subject puts it, statehood has no unique generally accepted definition but can be said to be “a form of standing”¹⁹⁵ which entails three main exclusive legal attributes: the ability to act in the international sphere, the exclusive competence over internal affairs and the prerogative to not be subjected to international jurisdiction without consent¹⁹⁶.

For Pacific atoll island States, continued fulfillment of the territory criterion in particular could prove difficult in the face of important sea level rise. First, in some climate change scenarios, most or all of their territory could be inundated and disappear¹⁹⁷. Second, even before total submergence were to happen, population displacement due to gradual loss of habitability could eventually lead to islands unable to sustain a permanent population: it is not certain that this uninhabitable land would qualify as “defined territory” as per the Montevideo Convention criterion¹⁹⁸. As all four criteria must be met in order to confirm the existence of a state, “it has generally been argued that [...] extinction of states must be determined by reference to these same criteria”¹⁹⁹. Applying this reasoning to the case at hand, the state would cease to exist from the moment the territory criterion is no longer met²⁰⁰. The legal consequences of the extinction of a state would be multiple and grave. For

¹⁹³ Kiribati (2009), p.8; Tuvalu (2009), [p.2]; Marshall Islands (2009), p.4

¹⁹⁴ Montevideo Convention on the Rights and Duties of States (1933), art.1

¹⁹⁵ Crawford (2007), p.44

¹⁹⁶ *Id.*, p.40-41

¹⁹⁷ Wong et al. (2014) p.364

¹⁹⁸ Grote Stoutenberg (2013), p.61

¹⁹⁹ Ziemele (2013), par.1

²⁰⁰ Rayfuse (2010), p.7

the former state, they could range from loss of maritime rights²⁰¹ to loss of international standing altogether²⁰², while for its inhabitants they could lead to statelessness²⁰³.

A closer look at state practice and doctrine on the subject however reveals that the above-explained rationale has not been accepted as the fact of the matter, but has rather been used as “only a starting point for further examination in the search for a modern concept of the notion”²⁰⁴. Indeed, the criteria for statehood enumerated in the Montevideo Convention have until today been articulated in the context of the creation and succession of states. These two topics have been well covered in international law²⁰⁵, in contrast to state extinction which was until recently considered as being mostly of theoretical interest²⁰⁶. The dissolution of a state necessarily entails some form of succession by one or more other states: indeed, international law on the matter provides that states can be dissolved either as a consequence of merger with another state, absorption into an existing state or by dismemberment into new states²⁰⁷. As was noted in reference to the situation in Somalia, “no provision [was] made for a state which collapses to the point of being totally defunct”²⁰⁸. It is thus unclear whether the Montevideo Convention criteria can be applied in the same manner in cases where no succession is possible.

This notion of state succession can be said to constitute one aspect of the fundamental presumption that both international law and its main subject, the state, are to be in existence forever²⁰⁹. The other aspect of this presumption is the notion of state continuity²¹⁰. Continuity and succession are distinct and complementary: in past situations where drastic changes occurred to a state’s territory, government or population, the state either continued to exist

²⁰¹ Soons (1990), p.230

²⁰² Wong (2013), p.5

²⁰³ McAdam (2012), p.138

²⁰⁴ Ziemele (2013), par.1

²⁰⁵ for a comprehensive review of the subject, see Beemelmans (1997), p.71

²⁰⁶ Wong (2013), p.3

²⁰⁷ Rayfuse and Crawford (2011), p.5

²⁰⁸ Wallace-Bruce (2000), p.67

²⁰⁹ *Ibid.*

²¹⁰ Crawford (2007), p.668

despite these changes or was replaced by another state in respect to some or all of its territory or population²¹¹. International law, to fulfill its goal of maintaining global order and peace, depends on the stability of international relations and on preservation of the status quo where possible and appropriate²¹². Hence, because of the stability it provides, continuity has been described as preferable over state succession in cases where a state's existence is unclear: the former "preserves legal relations despite changes in the subjects of those relations [...] to a much greater degree than [the latter], which is often marked by discontinuity"²¹³.

In the case of Pacific atoll island States, the territory criterion of statehood is compromised but the other criteria might still remain fulfilled: the doctrine of state continuity could therefore be relied upon. The case at hand is however fundamentally different from past situations where continuity was presumed in the wake of loss of territory. In those cases, territory was only temporarily removed from a state's control²¹⁴, either because of foreign occupation²¹⁵ or government failure²¹⁶. The territory of atoll island States, in contrast, risks *physically* disappearing, if not forever then at least for the foreseeable future. In this context, the island States, in addition to losing control over their territory, would also lose any plausible claim to it²¹⁷. This could make the application of the presumption of continuity much more difficult, especially in the long term: it is not clear how long the other criteria of statehood would continue to be fulfilled or how effective a "deterritorialized state" could be at fulfilling its functions. For example, a Pacific atoll island State with a diaspora relocated in a multitude of different countries with no possibility to return could potentially, in a few generations' time, end up without an effective population if the descendants of the is-

²¹¹ *Ibid.*

²¹² Bühler (2001), p.18

²¹³ Crawford (2007), p.668

²¹⁴ Rayfuse and Crawford (2011), p.9

²¹⁵ As was the case in Kuwait during its invasion by Iraq in 1990. See Crawford (2007), p.688

²¹⁶ As is currently the case in Somalia. See Wallace-Bruce (2000), p.67

²¹⁷ Yamamoto and Esteban (2011), p.41

landers become eligible to, and decide to adopt, the nationality of their host country, which might at this point have become more attractive and practical for them.

Even if the presumption of continuity was deemed applicable to Pacific atoll island States having lost their territory, it is debatable whether this would actually be the optimal solution as far as the interests of the states in question are concerned: it could put them in a position of political weakness vis-à-vis other states. Indeed, in addition to the Montevideo Convention criteria, statehood is understood to require some degree of recognition by other states in order to be established. The importance of recognition for statehood has long been subject to debate, some scholars (the “constitutive” school) arguing that it is a fundamental prerequisite and others (the “declaratory” school) minimising its effectiveness²¹⁸. There appears today to be some degree of consensus over the fact that statehood does not entirely depend on recognition, but that it cannot exist in total absence of it either²¹⁹. In regards to the presumption of state continuity, recognition by other states is important because it is the main support to statehood when the more objective Montevideo criteria cannot be fulfilled.

It has been argued that continued recognition of a state can constitute a legal obligation in cases where a serious breach of a peremptory norm of international law is the cause of the loss of a ground for statehood²²⁰. This obligation can be inferred from article 41(2) of the Draft Articles on the Responsibility of States for Internationally Wrongful acts: the article states that “no state shall recognize as lawful a situation created by a serious breach [of an obligation arising under a peremptory norm of general international law], nor render aid or assistance in maintaining that situation”²²¹. As per this article, states have an obligation not to recognize a loss of statehood caused by an internationally wrongful act and consequently to continue to recognize the affected country’s statehood: state practice concerning states illegally dispossessed of their territory through the unlawful use of force, such as Poland

²¹⁸ Crawford (2007), p.19

²¹⁹ *Id.*, p.28

²²⁰ Grote Stoutenberg (2013), p.72

²²¹ ILC Draft Articles on the Responsibility of States for Internationally Wrongful Acts (2001), art.41(2)

and Czechoslovakia in the 1930s, confirms this interpretation²²². As explained in subsection 3.1.1.2 however, it is uncertain whether the actions of states leading to climate change qualify as a breach of an international obligation. As such, the international community may in the current case not have a legal duty to recognise but rather only a moral obligation to do so²²³. This could lead to situations where other states have the possibility to only recognize deterritorialized states' statehood when doing so would be politically or economically convenient for them.

Even though in the current climate of global cooperation against climate change it would be difficult to imagine a state doing something as politically insensitive as calling a small state's sovereignty into question, the absence of a clear norm forbidding it could have negative implications for the affected state and for the international legal order as a whole. In order to preserve stability in international law and state to state relations, further clarification of the status of states deterritorialized due to the effects of climate change will be required.

4 Potential Solutions

As was highlighted in the previous section, current international law rules and instruments are ill-equipped to address the novel challenges faced by Pacific island States confronted to sea level rise. This is not entirely surprising since most of these rules and instruments were elaborated long before climate change became a part of our reality: in many ways, they are based on the unwritten premise that the physical conditions on Earth are to be constant and predictable²²⁴. Reliance on this assumption, combined with the often static and rigid nature of legal norms, makes some legal rules less suitable for addressing important legal problems of today. Some resemblances and analogies can be traced between the issues at hand and existing frameworks, but the important change of situation brought upon by sea level

²²² Grote Stoutenberg (2013), p.74

²²³ *Id.*, p.86

²²⁴ Vidas (2014), p.81

rise makes reconciling the two increasingly difficult. Further development of the law is thus needed.

Different solutions have been put forward so far to fill the current normative gaps. More specifically, two distinct groups of proposals can be identified: first, those made in regards to the human issue of climate change migration, and second, those related to the more technical maritime territory and sovereignty issues. A review of each category of proposals is the subject of the first parts of this section. A suggestion of concrete measures which could bridge the gap between the two categories of issues and serve as complementary “incremental” legal adaptation measures to a long-term solution follows in the second part of this section.

4.1 Regulating Climate Migration

In light of a review of the current situation, we can conclude that uncertainty surrounding the legal status of individuals migrating in response to climate change remains. Application of refugee law and other human rights norms to climate migrants proved unsuitable, and as such the development of a new framework has been called upon.

Several scholars have suggested addressing the unresolved legal gaps by establishing a new instrument to protect climate migrants. The different proposals made with this aim in mind vary from one another in regards to the definition of the subject of the protection: some suggest officially defining the term “climate refugees” in order to clarify the meaning of the term and crystallize its existence in international law²²⁵, while others opt for an alternate category such as “climate exiles”²²⁶, “climate change displaced persons”²²⁷ or “environmentally displaced persons”²²⁸ to mark a departure from the Refugee Convention defini-

²²⁵ Biermann and Boas (2008), p.11; Docherty and Giannini (2009), p.361

²²⁶ Byravan and Rajan (2010), p.253

²²⁷ Hodgkinson and Young (2013), p.309

²²⁸ Bétaille et al. (2010), p.397

tion and consequently make the definition better suited to the situation at hand. The proposals also differ as to the structure of the suggested instrument. Some authors, stressing the importance and distinct character of climate change displacement, argue in favor of a stand-alone convention which they believe would be better suited to address the complexity of the problem²²⁹. One group of authors has gone one step further, drafting a model Convention on the International Status of Environmentally Displaced Persons²³⁰. Others, on the contrary, are in favor of an instrument linked more directly to the climate regime, either as a fully integrated protocol to the FCCC²³¹ or as an instrument basing its modalities on states' Kyoto Protocol emission reduction quotas²³².

These proposals, varying in scope and form, can be likened to each other in the sense that they all draw on the 1951 Refugee Convention and approach the issue of climate migration from a human rights-based, protection framework perspective²³³. The proposals indeed all plan to regulate climate migration by first identifying a category of persons who would qualify for protection as a result of the negative effects of climate change on their living conditions, and then establishing a framework articulating the rights of these protected persons. Two main obstacles to this approach's feasibility must be pointed out.

First, by requiring certain criteria to be fulfilled in order for the status to be granted, protection proposals risk reintroducing some of the technical and moral problems which rendered the 1951 Refugee Convention inapplicable to climate migrants. In the case of instruments that replicate the Refugee Convention's process and determine eligibility on an individual basis²³⁴, a case-by-case assessment could prove very time and resource consuming, especially so considering the great number of people who may be expected to migrate. Some proposals attempt to "side step [this problem] by suggesting that entire communities or

²²⁹ Docherty and Giannini (2009), p.392; Hodgkinson and Young (2013), p.305

²³⁰ Bétaille et al. (2010), p.395

²³¹ Biermann and Boas (2008), p.13

²³² Byravan and Rajan (2006), p.249

²³³ McAdam (2012), p.192

²³⁴ Bétaille et al. (2010), p.397

populations groups be so designated”²³⁵. But even if these instruments manage to set up an effective process for the groups or areas concerned, the multicausality of climate change migration, as observed by McAdam, “could lead to considerable difficulty and inconsistency in decision making”²³⁶. Indeed, as the same author points out, “the degree to which climate change can – and needs to be – singled out as a factor would need careful consideration”²³⁷. Establishing an instrument with the goal of providing protection on a broader scale than the Refugee Convention and the existing complementary protection mechanisms, only to have some people excluded from its application because the link between their need for relocation and climate change is judged insufficient, would not be of much use as it would only replicate existing uncertainties and inequalities.

Second, the adoption of a new protection instrument appears unrealistic in light of the current political context. This is especially true in regards to proposals for the enactment of a new convention. As some proponents of this approach themselves admit, “there may be reluctance to develop a new treaty given the existence of two seemingly relevant conventions”²³⁸, the UNFCCC and the Refugee Convention. For States Parties to those conventions, creation of a separate regime for climate change migration risks being seen as creating unnecessary and counterproductive overlaps²³⁹. In addition, negotiations towards a new multilateral treaty have a tendency to “bog down”²⁴⁰ and take a lot of time, effort and resources to fulfill. This, combined with the climate of apprehension towards additional immigration currently prevailing in some potential host countries, casts further doubt over the willingness of governments to work towards what could be a costly and unpopular convention. Interestingly, both proposals for a new convention and those for a protection instrument linked to the UNFCCC would also be likely to face opposition from some vulnerable states themselves, notably from Pacific island States. In Kiribati and in Tuvalu, for exam-

²³⁵ Hulme (2008), [p.1], in reference to Biermann and Boas (2008), p.10

²³⁶ McAdam (2011), p.15

²³⁷ *Ibid.*

²³⁸ Docherty and Giannini (2009), p.400

²³⁹ Gogarty (2011), p.182

²⁴⁰ Bodansky (2000), p.344

ple, political circles and populations strongly reject the label of “climate change refugee”, which for them, as McAdam and Loughry note, “evokes a sense of helplessness and a lack of dignity that contradicts their very strong sense of pride”²⁴¹.

Underlining these obstacles to a new protection instrument for climate migration, another group of authors suggest an alternate approach, arguing in favor of framing climate movement as an adaptation measure. The proposals made under this approach share the same general premise, preconizing a bottom-up approach through which states and regional organizations would be responsible for setting up the necessary migration agreements and programs. The specifics of the different suggestions however vary. Some authors preconize more centralized approaches relying directly on UNFCCC institutions²⁴². Others recommend approaches where the FCCC would play a more secondary role, either coordinating²⁴³ or providing subsidiary funding²⁴⁴ for the various regional or bilateral initiatives, which would be undertaken under less binding soft law instruments such as the Pacific Islands Forum Niue Declaration on Climate Change²⁴⁵ and “build on existing geopolitical, economic, cultural and environmental relationships that already exist within many regional frameworks”²⁴⁶.

The adaptation mechanism proposals constitute interesting alternatives to the adoption of a new protection instrument because, thanks to their less legally formal nature, they could avoid the associated functional obstacles. Indeed, admissibility, by being based on state-to-state migration agreements rather than on predetermined and rigid criteria, would be more flexible and easier to keep in tune with the multicausal nature of climate movement and the various regional and local contexts. Framed as one facet of states’ climate adaptation strategies, climate migration is also more likely to be pursued on the political level. States Par-

²⁴¹ McAdam and Loughry (2009)

²⁴² Gogarty (2009), p.185; McAnaney (2012), p.1201

²⁴³ Williams (2008), p.520

²⁴⁴ Wyman (2013), p.212

²⁴⁵ Niue Declaration on Climate Change (2008)

²⁴⁶ Williams (2008), p.524

ties to the UNFCCC have indeed already agreed to undertake “measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at the national, regional and international levels”²⁴⁷ through the Cancun Agreements. Lastly, migration as adaptation would enhance migrants’ agency by allowing them to contribute to and thrive in their country of adoption: as such, the concept is more likely to be positively received by at-risk states and populations who, as one Kiribati official put it, “would like to relocate on merit and with dignity”²⁴⁸.

4.2 Re-examining the Rules on Baselines and Statehood

Although to a certain extent coastal geography has always been unstable, the advent of climate-induced sea level rise is likely to bring about territorial change of an unprecedented level. The possibility of this change, it has been shown in the previous section, raises questions regarding fundamental aspects of the law of the sea and, ultimately, of the law on statehood. A number of different solutions to these interrogations have been suggested in the literature. All of them are devised with the same ultimate objective in mind: to ensure the ongoing applicability and relevance of international law. Views on how to best fulfill this objective however differ greatly, and as such so do the suggested strategies.

4.2.1 Baselines and Maritime Zones

In regards to the rules on baselines and maritime zones, it has been said that in order to determine the way forward, the balancing of three competing concerns is necessary: the stability of maritime boundaries, the “land dominates the sea” principle and the need for international equity²⁴⁹. With this in mind, two schools of thought can be identified. A first group of authors is in favor of a freezing of baselines and maritime zones, which in their

²⁴⁷ UNFCCC Decision 1/CP.16 (2010), par.14 f)

²⁴⁸ Tessie Lambourne, foreign secretary of Kiribati, as quoted by Goering (2009) [p.2]

²⁴⁹ Lisztwan (2012), p.165

opinion “would be consistent with, and would significantly assist in, the promotion and the achievement of the LOSC objectives of peace, stability, fairness and efficiency in ocean governance”²⁵⁰. Jesus, for example, suggests that baselines measured and published in accordance with UNCLOS provisions should be interpreted as permanent, irrespective of ensuing geographical changes²⁵¹. Others opt for a more textual approach: Caron suggests developing a new rule, either through treaty or custom, which would freeze the boundaries of the various maritime zones²⁵². In the same vein, Soons suggests the adoption of a rule freezing the outer limits of the territorial sea and the EEZ²⁵³. These two proposals differ in regards to their effect on the limit between the territorial sea and the internal waters of the coastal state: Caron’s iteration of the rule has been qualified by Hayashi as the better alternative, since a freezing of the innermost boundary would provide maximum stability by fixing the outer limit of states’ internal waters and maintaining the original breadth of the territorial sea and EEZ²⁵⁴.

The idea of a new rule has subsequently been picked up and built upon by other authors, who have discussed the different forms it could take and the mechanisms through which it could be adopted. Grote Stoutenberg suggests that the new rule be established through a separate implementation agreement complementing the UNCLOS: that way, the political obstacles associated with an amendment to the Convention itself could be avoided²⁵⁵. Hayashi discusses the moment from which the baselines should be frozen, concluding that the freezing of a state’s should preferably coincide with the moment of publication of those baselines under article 16(2) UNCLOS since this would have the effect of giving states an added incentive for establishing their baselines²⁵⁶. He also submits a tentative example of what the provision could read like in practice²⁵⁷.

²⁵⁰ Rayfuse (2013), p.189

²⁵¹ Jesus (2003), pp.602-603

²⁵² Caron (1990), p.650

²⁵³ Soons (1990), p.225

²⁵⁴ Hayashi (2011), p.196

²⁵⁵ Grote Stoutenberg (2011), p.289

²⁵⁶ Hayashi (2011), p.197

²⁵⁷ *Id.*, p.198

The idea of establishing a rule for fixed baselines has not however received unanimous support in academic circles. Lisztwan notes that such a rule would secure stability at the expense of the two other integral aspects of the law of the sea regime. Indeed, by weakening the requirement of a direct link between a state and its maritime territory, frozen baselines would go against the founding principle that land dominates the sea and could lead to increased conflict and poorer management in some maritime areas²⁵⁸. Such a rule would also, argues Lisztwan, undermine the principle of equity: as the rise in sea level progresses, coastal states would gain in overall maritime territory, and thus in marine resources, at the expense of the high seas territory allocated to the rest of the international community²⁵⁹. Palmer further points out that a freezing of the baselines would make the revision of past excessive claims made by states impossible²⁶⁰.

4.2.2 Statehood

The solutions put forward in relation to statehood issues are generally not as elaborate as the above-reviewed ones on baselines, since the absence of precedent has led most deliberations on the subject to be made in the abstract²⁶¹. Some of them start from the idea that it could be possible and wishful to “stretch” the legal presumption of state continuity so that it continues to apply despite a states’ permanent loss of territory or population. Suggestions such as their recognition as deterritorialized states²⁶² or their likening to non-state sovereign entities like the Military Order of Malta²⁶³ are applications of this idea. Others are based on the premise that the legal concept of statehood is rigid and limited in scope and that as such, vulnerable states should take measures to ensure that they continue to fit in the established legal structure. Under this rationale, states at risk of being deterritorialized

²⁵⁸ Lisztwan (2012), p.169

²⁵⁹ *Id.*, p.170

²⁶⁰ Palmer (2008), p.4

²⁶¹ McAdam (2012), p.119

²⁶² Burkett (2013), p.105

²⁶³ Maas and Carius (2012), p.659

could either secure additional territory, for example through a cession of land from another state²⁶⁴, or if that is not possible continue their existence in non-state form, for example through an agreement providing for self-governance in free association with another state²⁶⁵.

Vidas, in his analysis of the issue, identifies two ways for the law to respond to a change of circumstance as important as the effects of climate-induced sea level rise on territory: through subordination of the facts to the law, or through adaptation of the law to the facts²⁶⁶. The proposals to freeze baselines and those attempting to secure deterritorialized states' continued can be likened to the former approach: they indeed all attempt to solve a novel problem while remaining anchored to the law as it stands today. In Vidas' view, "no forcing of presumptions, no invention of unsuitable analogies, and no artificial fixing of a 'permanent' legal situation can produce the ultimate objectives of international law: stability and peace"²⁶⁷. A deeper reorganization of law and society may thus be necessary in the face of a profound change of circumstances: the extent of this reorganization will depend on the speed and the severity of the change²⁶⁸. The pace and extent of sea level rise is unpredictable and as such, solutions need to be developed pre-emptively. Maas and Carius however warn that given the current state of affairs, "it appears unlikely that a global consensus on how to deal with the impacts of climate change on sovereignty and territory will emerge"²⁶⁹. It is thus unclear whether the advent of appropriate and durable solutions to the territorial legal issues raised by the effects of sea level rise can be expected in the near future.

²⁶⁴ Wong (2013), p.38

²⁶⁵ McAdam (2010), p.126

²⁶⁶ Vidas (2014), p.83

²⁶⁷ *Ibid.*

²⁶⁸ *Id.*, p.73

²⁶⁹ Maas and Carius (2012), p.662

4.3 “Incremental” Legal Adaptation Measures

The previous review of suggested solutions to legal issues stemming from sea level rise leads to two overarching conclusions. The first is that in regards to both population and territory issues, a definite long-term solution has yet to be agreed upon. The second is that there is increasing consensus over the fact that in order to reach such a solution, a significant development of international law will be necessary, if not through the reconceptualization of some foundational aspects of the law themselves, then at least through the elaboration of new instruments.

A parallel can here be drawn between the important conceptual changes international law may have to go through and the physical changes necessary for humans, animals, plants and ecosystems to adapt to climate change. Indeed, in climate adaptation literature, responses to “vulnerabilities and risks [...] so sizeable that they can be reduced only by novel or dramatically enlarged adaptations [or by] the reorganization of vulnerable systems” are defined as transformational adaptations²⁷⁰. By analogy, one could say that in the current context, the novel and fundamental challenges posed by sea level rise call for a “transformational adaptation” of some areas of international law.

The counterpart to transformational adaptation is incremental adaptation: this type of adaptation consists in the extension or expansion of existing actions and behaviors that already reduce vulnerability or increase resilience to a phenomenon²⁷¹. One adaptation researcher summarizes the difference between transformational adaptation and incremental adaptation as the following: “in incremental adaptation, there is change, but the basic characteristics of the system are maintained. Transformation means crossing a threshold: you were A and you become B.”²⁷² Many incremental adaptation measures can also be said to double as “no-regrets” measures: as gradual expansions of already useful measures, they are likely to

²⁷⁰ Kates et al. (2012), p.7156

²⁷¹ *Ibid.*

²⁷² Edmond Dounias, as quoted in Hubert (2014)

yield benefits regardless of the extent of actual future change²⁷³. This is especially useful in the context of sea level rise, where considerable uncertainty remains as to the scale and rate of the rise. Transposed to international law, incremental adaptation could be said to consist in a scaling up of existing mechanisms in order to respond to a new situation. In the current context, it is possible to identify two legal mechanisms which could be relied upon as “incremental legal measures” by Pacific island States for adaptation to sea level rise.

One such measure would be the strengthening of existing migration channels in order to accommodate climate migration. Host country immigration policies could be revised, as well as bilateral and regional agreements expanded, so as to facilitate the movement of persons from states affected by sea level rise. Increasing labor migration opportunities could be an especially practical option as it would be beneficial to both the migrant’s country of origin and host country. The latter would indeed fill a need in its workforce while the former would benefit from decreased demographic pressure on its territory as well as from an increased influx of resources through the transfer of remittance payments from migrant workers to their families and communities²⁷⁴. This approach could be realistically adopted between Pacific island States and their developed neighbors New-Zealand and Australia, this for three main reasons. First, the long-standing transnational ties between Pacific islanders and these countries remain strong today²⁷⁵, as shown by their high degree of collaboration through regional organizations like the Pacific Islands Forum²⁷⁶. Regional cooperation agreements set up through these organizations, such as the Niue Declaration on Climate Change, could hence serve as an institutional basis for increased migration framed as a “no-regrets” adaptation measure²⁷⁷.

Second, there exists a political will to facilitate migration in both sender and receiver states: the fact that some policy measures with this goal in mind have already been undertaken in

²⁷³ Heltberg et al. (2009), p.95

²⁷⁴ For a more in-depth analysis of remittances and their impact for development, see Ratha (2007)

²⁷⁵ Lee (2009), p.30

²⁷⁶ Pacific Island Forum Secretariat (2015)

²⁷⁷ Niue Declaration on Climate Change (2008), par.19

both groups of states demonstrates this. For example, Kiribati has set up the “migration with dignity” policy, which aims “to improve language, workplace skills and qualifications, in order to make Kiribati citizens competitive and marketable at international labour markets”²⁷⁸, and New Zealand runs a seasonal worker scheme targeted specifically at Pacific island workers²⁷⁹.

Third, a migration scheme which could either be relied on as-is and further developed, or serve as a model for additional bilateral or regional adaptive migration instruments, can already be found in New Zealand’s Pacific Access Category program²⁸⁰. This program offers permanent residence to a certain number of citizens from Tuvalu, Kiribati and Tonga as well as their spouses and children each year, granted they have received a job offer and meet a minimum language and income requirement. This program has been very successful since its inception in 2002 and has been well-received among Pacific island populations²⁸¹. The inauguration of similar schemes, or ideally of an integrated regional program, based on the Pacific Access Category model could thus be envisaged: complemented by measures designed to maximise the effectiveness of the scheme, such as reducing the transaction costs on remittances and ensuring proper integration of the migrants into the society of the host country²⁸², these programs could constitute a useful incremental legal adaptation measure to climate-induced migration.

Another incremental legal adaptation strategy consists in the securing of maritime entitlements through unilateral or bilateral measures reaffirming the claim to these entitlements. Two such measures could here be of use. First, states whose rights over their maritime territory are at risk should measure and officially publish their baselines in accordance with the relevant UNCLOS provisions²⁸³. This is especially true for states whose domestic legis-

²⁷⁸ MacLellan (2011), [p.3]

²⁷⁹ New Zealand Ministry of Business, Innovation & Employment (2015)

²⁸⁰ Immigration New Zealand (2015)

²⁸¹ McAdam (2012), p.116

²⁸² Barnett and Webber (2009), p.31

²⁸³ UNCLOS (1982), art.16

lation, like most Pacific island States', can be interpreted as reiterating the ambulatory nature of their baselines²⁸⁴. Measuring and publishing of baselines would be beneficial even for states without these domestic legislation issues however, and should thus be pursued by all vulnerable states. Indeed, doing so would reinforce the presumption of the existence of those baselines even in the face of geographical change. Purcell even argues that publishing baselines concretely guarantees their stability: according to her interpretation of the law on the matter, published baselines are conditional to geographic conditions at the time of their establishment, but not after that²⁸⁵. Even though this interpretation goes against the general consensus on the matter, it serves to show that there is no clear certitude over this issue and that as such, measures reinforcing presumed stability would be of practical use.

Second, in cases where this is geographically possible, states willing to secure rights over their maritime zones should conclude maritime boundary agreements with their neighbor states. Doing so would, according to Lisztwan's interpretation of treaty and case law on the matter, increase the stability of the agreed-upon boundaries since "maritime boundary agreements are resistant both to unilateral termination by a treaty party, and to challenges by third states, regardless of whether baselines are ambulatory or fixed"²⁸⁶. This measure is of great relevance to Pacific island States because of their geographical proximity to one another: it gives them the possibility to, if they are given access to the necessary technical expertise, sign agreements among them to protect them from potential third party challenges. In the last years, Pacific island States have begun to avail themselves of this option. It has been noted that "from 2002 to 2010, there were a total of two maritime boundary agreements signed in the Pacific region. However, in the period 2011 to 2014, a total of 14 maritime boundary agreements were formally endorsed"²⁸⁷. It can thus be said that incremental legal adaptation measures for the securing of maritime territory rights are already being used by Pacific island States.

²⁸⁴ Rayfuse (2013), p.184

²⁸⁵ Purcell (2012), p.760

²⁸⁶ Lisztwan (2012), p.200

²⁸⁷ Artack and Kruger (2015), par.9

The two aforementioned examples show that incremental legal adaptation measures are advantageous in many regards when compared with the transformational measures reviewed in sections 4.1 and 4.2. First, by relying on existing legal frameworks and institutions, they sidestep the conceptual and practical problems associated with the elaboration of new rules: they are likely to be operationalized faster and at a lower cost. The two measures explained above also have the advantage of not being anchored in only one area of international law, having rather been devised with the complexity of adaptation in mind. As such, they aim to produce crosscutting positive effects for vulnerable states: for example, both policies increasing labor migration and measures to stabilize maritime boundaries have as a corollary goal to secure additional income to be used by the vulnerable state for further adaptation, the former through remittances and the latter through the strengthening of claims over maritime resources. Lastly, the two incremental legal measures contribute to the realisation of the at-risk populations' human rights: by being pre-emptive and proactive in nature rather than reactive, they give affected populations more choices, allowing them to benefit from greater self-determination and to "adapt as they see fit"²⁸⁸.

Incremental legal adaptation measures are not however without limitations. One notable challenge the above described measures face regards their stability and predictability. Although they appear realistic in the current political context, the measures' realization depends on the ongoing collaboration of external actors, either through funding or the sharing of technical expertise. Since as it stands and as highlighted in section 3.1, collaboration remains largely discretionary to these outside actors, it is impossible to guarantee that the implementation of the measures would continue to be fulfilled in the future. Another, arguably more fundamental, challenge for incremental legal adaptation is that it is not a final solution in itself: work migration from Pacific island States to neighboring countries will not allow the relocation of whole communities in scenarios of high sea level rise, just as

²⁸⁸ Barnett and Campbell (2010), p.184

measures to strengthen the presumption of stability of their maritime boundaries will not give them a sure-fire guarantee that their territorial rights are secured.

That is not to say that incremental legal adaptation measures are of no use. While they might not be the final solutions to the legal issues raised by sea level rise, they are likely to be useful as complementary “first-steps” to more profound reorganizations of international law. If understood and enacted with this goal in mind, they could have the added advantage of informing and orienting the necessary fundamental legal adaptation to follow. In this respect, the measures undertaken by Pacific island States could serve as examples for other vulnerable states and regions.

5 Closing Thoughts

The present thesis, through its analysis of the legal implications of adaptation to sea level rise for Pacific island States, attempted to draw a concise but complete overview of the diverse legal issues stemming from one effect of climate change and affecting one group of states, as well as of the solutions to these issues suggested by legal academia. The objective behind this focus was twofold: first, to highlight how the legal issues at hand, while drawing on a number of different areas of international law, remain interrelated through their practical consequences for states and populations, and second, to underline the fact that many of the solutions put forward so far appear to have been developed without taking this interrelatedness into account and as such are limited in their effectiveness.

The tentative incremental legal adaptation solutions suggested in the last subsection of the thesis avoid this disciplinary fragmentation to a certain extent and thus appear to be more concretely implementable. These solutions are however only temporary in scope. A durable and comprehensive legal solution to the issues of adaptation to sea level rise, and to climate change more generally, remains to be developed. An in-depth discussion of the potential form of this solution is outside the scope of this thesis. It is however possible to conclude

by identifying one characteristic of the incremental solutions which could be transposed in a long term approach.

The two incremental measures presented in the previous subsection preconize a less legally formal approach, instead relying on bilateral or regional cooperation and agreements. One main obstacle to their long-term viability, as was mentioned, is the uncertainty of continued support from developed states. A multilateral mechanism to supervise the long-term implementation of local or regional adaptation schemes and coordinate their funding could thus be envisaged. Such a mechanism would have two advantages: because of the narrow scope of its functions, it could be simple in structure, and by being decentralized, it could operate more effectively in different states' particular contexts.

A coordinating mechanism would improve vulnerable populations' capacity to adapt to climate change by ensuring that incremental adaptation measures remain steadily available. In other words, it would enable these measures, currently understood as viable only in the short-term, to be relied on in the medium- or long-term. By guaranteeing the availability of concrete responses to urgent adaptation needs, it could also allow the necessary transformational adaptation of the law to be effected progressively and thus more successfully.

The 21st UNFCCC COP will be held in November of 2015 in Paris, where a new global climate change agreement is to be adopted. According to Bodansky and Diringier, the agreement is expected to follow a hybrid model with both top-down and bottom-up policy elements²⁸⁹. Given the FCCC mandate to enhance action on adaptation through the Cancun Adaptation Framework²⁹⁰, a mechanism resembling the one hinted at above could be included in the new agreement as a bottom-up measure. The outcome of the Paris Conference will likely be of great influence over the way adaptation is to be enacted in international

²⁸⁹ Bodansky and Diringier (2014), p.7

²⁹⁰ UNFCCC Decision 1/CP.16 (2010), par.13

law: it will be interesting to see how the ideas put forth in this thesis hold up in regards to these upcoming developments.

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