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Statehood and Climate Change-Induced Sea Level Rise

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Contents

Summary

This thesis explores the relation between climate change-induced sea level rise and the concept of statehood. The law on statehood is challenged in unprecedented ways as previously unthinkable scenarios become increasingly plausible. The purpose of the thesis is to examine whether or not low-lying small island developing states will lose their statehood if they are completely submerged by the sea as it continues to rise.

Essential to this undertaking has been to examine how statehood can be attained, and more importantly, retained. Statehood is derived from the Montevideo Convention, in which the concept of statehood is codified. In addition to this convention, other essential legal instruments and treaties include the Law on the Sea, The United Nations Framework Convention on Climate Change and the Paris Agreement. The work also encompasses exploring legal concepts and theories of relevance to the overall purpose of the thesis.

The phenomenon of climate change, including global warming, is rudimentary covered. There is no doubt that anthropogenic greenhouse gas emissions are driving global warming, which by extension is responsible for a considerable part of the current and accelerated sea level rise.

There is no clear answer to the question at hand, and although multiple suggestions on how to retain statehood for small island developing states have been thoroughly explored, the reality is that the future of the affected states depends to a great extent on the international community as a whole. There are legal arguments to be made, ranging from the concept of peremptory norms and alternative interpretations of the explicit language in the Montevideo Convention, to the idea of new legal subjects and the potential of freezing the current baselines as they stand today. Ultimately, however, small island developing states are highly dependent on the rest of the world for their continued existence.

Sammanfattning

Den här uppsatsen undersöker sambandet mellan klimatförändringar, havsnivåhöjning och egenskapen att vara en stat (eng. *statehood*). Internationell rätt beträffande det juridiska subjektet *stat* utmanas och ifrågasätts på helt nya sätt i och med att tidigare fullkomligt otänkbara scenarier förefaller mer och mer sannolika, på grund av havsnivåhöjningar. Uppsatsens syfte är att undersöka om små ö-nationer, som riskerar att helt uppslukas av den stigande havsnivån, kommer att upphöra att vara stater i folkrättslig mening. Det vill säga upphöra att vara en *stat* som en form av rättssubjekt.

Grundläggande för detta arbete har varit att undersöka hur en stat blir till, och hur denna status bibehålls. Detta görs med utgångspunkten i Montevideo-konventionen, men även andra viktiga traktat så som *UNCLOS*, *UNFCCC* och Parisavtalet redogörs för. Uppsatsen tittar även på juridiska koncept och teorier av relevans, i enlighet med uppsatsens huvudsyfte.

Fenomenet klimatförändringar, inklusive global uppvärmning, redogörs översiktligt för. Det råder inga tvivel om att utsläpp av växthusgaser orsakade av människan är en av de starkast bidragande faktorerna till global uppvärmning, vilket i förlängningen ligger bakom en betydande del av den havsnivåhöjning som pågår.

Det finns inget entydigt svar på frågan i fokus. Även om flertalet förslag till lösningar på hur små ö-nationer ska kunna fortsätta att vara stater har utforskats, så är verkligheten att deras framtid hänger mycket på hur världssamfundet och världen i stort hanterar frågan. Argument till stöd för ö-nationernas fortsatta överlevnad inkluderar tvingande internationella rättsprinciper, alternativa tolkningar av Montevideo-konventionen, en ny kategori av internationella juridiska subjekt samt att frysa nuvarande havsrättsliga baslinjer. I slutändan är dock de mest utsatta ö-nationerna beroende av den resterande världen för sin fortsatta existens.

Abbreviations

AOSIS	Alliance of Small Island States
APB	Autonomous Province of Bougainville
CARICOM	Caribbean Community
COI	Indian Ocean Commission
COP	Conference of the Parties
EEZ	Exclusive Economic Zone
ETS	Emission Trading Scheme
EU	European Union
ICJ	International Court of Justice
IGO	Intergovernmental organization
ILA	International Law Association
MDG:s	Millennium Development Goals
NDC	Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
PCA	Permanent Court of Arbitration
PIF	Pacific Island Forum
SAMOA	Small Island Developing States Accelerated Modalities of Action
SDG:s	Sustainable Development Goals
SIDS	Small Island Developing States
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
VCLT	Vienna Convention on the Law of Treaties
WMO	World Meteorological Organization

1 Introduction

1.1 Background

In September each year leaders from all over the world gather in New York for the opening of the *United Nations General Assembly* during what is called the United Nations *High-Level Week.* They each get a chance to address the floor during the general debate, and despite the many important points made and issues raised, the statements sometimes tend to blend together and sound very similar to other statements, both past and current. It can be a plethora of altruistic promulgations and self-praising. More recently, however, when the turn comes to a leader from a small island developing state, more often than not has there been a fervor and a vehemence to break the noise. A newfound passion, born out of desperation and despair. Climate change is happening, and it is without a doubt one of the most pressing issues facing humanity and planet Earth at the moment. As the sea levels rise due to global warming, small island states are pushed to the brink of their very existence. The nations of the leaders in the example above are literally evaporating into the sea. This opens up an entire new discussion on the law on statehood and the legal effects from climate change, and it challenges our view on the concept of statehood. Previously unthinkable scenarios are suddenly plausible and perhaps even probable to take place. This raises new legal questions, as small island developing states risk ceasing to exist due to loss of territory from climate change-induced sea level rise.

1.2 Purpose and Research Question

The general scope of the thesis revolves around climate change-induced sea level rise and its effect on statehood. The purpose of this thesis is to analyze the concept of statehood, and more specifically the precondition of a defined territory, in relation to sea level rise due to climate change. The main question, in an attempt to achieve this purpose as outlined above, reads:

Will a state lose its statehood if it loses its territory?

In order to answer the main question and coherently provide a conclusion to the issue at hand, a few subsequent questions to consider are:

What is climate change?
What is statehood?
How does climate change affect statehood?
What can be done in order to retain statehood?

1.3 Delimitations

The phenomenon of climate change, and more specifically global warming and sea level rise, impacts a plethora of areas to study further. The aim of this thesis is not to look at citizenship or the fate of the populations of derecognized states, e.g. climate refugees, statelessness or migration law. Nor will it look at the idea of remedial territory or remedies for climate change-related damage at all. Additionally, the topics of sustainable development in terms of poverty, food security, labor and other societal or socioeconomic effects are also excluded from the objective of the thesis.

Although a few states, for natural reasons, appear and reoccur throughout the text in order to contextualize the discussion or provide a concrete example, this is not a case study on said states.

It is difficult to ignore how international law and politics interplay. Thus, keeping the thesis to a strict legally principled discussion would be unfeasible. However, the thesis does not aim to cover the political aspect of the problem at hand more than necessary, and the legal aspect remains in focus.

Last, but certainly not least, is an important caveat to promulgate. Due to the fact that the topics of climate change, global warming and sea level rise are so current at the time of writing this thesis, there is a limit to how much of the recent developments can be included and considered in the work. International law relating to these subjects is gaining traction

exponentially, and on the political global stage multilateral treaties and efforts are being discussed at this very moment. This thesis does not consider the developments at the COP25 meetings or the ongoing negotiations in the European Union on a so-called *Green Deal*, to mention a few prospectively influential developments taking place. Nor does it claim to reflect upon all of the most recent scientific reports on climate change.

1.4 Material and Methodology

Material for this thesis consists mainly of academic literature and academic articles, complemented by scientific reports, reports from the various bodies and organs under the United Nations, but also a few news articles and electronic sources. The thesis is primarily of legal nature but the subject is inherently interdisciplinary. Thus, not only sources for the undertaking, but also findings and conclusions, overlap multiple fields and disciplines.

From the outset, the foundation of the thesis is based on international law, primarily the Montevideo Convention on the Rights and Duties of States, The United Nations Convention on the Law of the Sea, The United Nations Framework Convention on Climate Change and the Paris Agreement.

For opinions on the law on statehood and suggestions for solutions to the problem at hand, i.e. climate change-induced loss of territory for small island states, there is a lot of helpful literature, and articles, on the subject available. The ambition is to gather information and ideas from a plentitude of authors and publications. A few whom are relied more heavily upon are Rosemary Rayfuse and Alejandra Torres Camprubí, in addition to an extensive anthology edited by Michael B. Gerrard and Gregory E. Wannier. There are not many court cases of relevance to the specific purpose of this thesis, but a couple are nonetheless covered in this work.

In order to explain how climate change is affecting statehood in general, and statehood for small island developing states in particular, it is paramount to understand the basics of climate change and global warming, and the relation to sea level rise, at least on a rudimentary level. Given the complexity of this field of science, the thesis relies heavily on reports from

the Intergovernmental Panel on Climate Change, complemented by basic literature on the subject, primarily by authors Mark Maslin and David Archer, respectively.

All of the above are complemented by electronic sources only to the extent necessary. The objective of the thesis concerns an unprecedented scenario which, although plausible to occur, can only be estimated for at this time. For this reason some noteworthy developments are not yet to be covered by international treaties or academic publications, but in order to explore potential solutions in the broadest possible sense all available sources of relevance are nonetheless worth including.

Small island developing states, both independently and as a multilateral organization for cooperation, are also essential to this thesis, and will be discussed and entwined throughout the text, in addition to the one condensed subchapter dedicated to this. The rationale is to take the clarified climate change-induced sea level and examine how these states, and their retention of statehood especially, are affected when international law and the law on statehood is applied to them.

Axiomatically, the thesis has a forward-thinking perspective, given the nature of the problem and the yet unprecedented scenarios in focus. At the same time, in order to forecast and predict said scenarios, a historic perspective, both on climate change and on the law on statehood, is essential. The scope of the thesis includes the particular subjects of international law most vulnerable to climate change-induced sea level rise, i.e. small island developing states, but also all states in relation to this, although not independently.

1.5 Outline

The rationale behind the structure of the thesis is relatively self-explanatory. In order to examine any consequences related to climate change it is imperative to obtain an elementary understanding of how it works.

Naturally, the first part (Chapter 2) following this introductory section of the thesis explains what is happening today, i.e. the facts, in terms of climate change. This part focuses on what causes climate change and global

warming, and how this is driving global sea level rise. Since the thesis is forward-thinking in terms of the objective potentially taking place in the future, there is also a section that covers how these predictions and forecasts are made and with what level of accuracy they are believed to be made. The subjects central to the topic of this thesis are states, and some states are considerably more central than others. For this reason, one section is dedicated to this specific group of nations, namely small island developing states, and to those very most affected in particular. Besides this, small island developing states are recurrently addressed throughout the work.

All parts contribute to the overall conclusions, but the second section (Chapter 3) is perhaps the most vital part of the thesis. It sets out the basic premises for the law on statehood, the law on the sea, and international law in general to the extent required. Concepts covered here are the concepts of peremptory norms and de-territorialized states as legal subjects, respectively, as well as the different theories behind statehood. There is also a historical overview of the concepts of statehood and state recognition, and their internal relation to each other. Moreover, key legal instruments are introduced, although these are further presented in the subsequent section.

The next section (Chapter 4) accounts for the impacts from climate change in relation to statehood, on the one hand, and what can be done about them, on the other hand. This part includes an overview of legal institutions and instruments, and a detailed look at key treaties and mechanisms. This section also aims to touch briefly upon non-legal impacts and solutions in relation to climate change, including the risk of de-population for affected states, carbon tax, and alternative energy sources. The United Nations and its underlying bodies and mechanisms are central to this part. Potential solutions are extensively covered in this section before they are summarized and commented on in the more condensed last section of the thesis, i.e. the analysis and conclusion parts, respectively.

2 Climate Change-Induced Sea Level Rise

Climate change is without a doubt one of the most pressing issues facing humanity and planet Earth. It raises critical questions in a myriad of disciplines and its effects are far-reaching and overlapping, encompassing development, poverty, migration and global security, inter alia. Given the communal and global nature of the issues at hand, international law has an imperative role to play, but at the base of the discussion are the convincing evidence provided by scientific research. How to deal with the ongoing climate change is an economic, political, societal, geological and legal question. It is a highly relevant question both at a local, national and international level, and at its core are the greenhouse gases and the greenhouse effect. Much of the changes that are a cause for concern are related to emissions of greenhouse gases, which have constantly increased since the industrial revolution, but which have accelerated its pace recently and continue to do so today.

Climate change as a phenomena is not new and although experts might still argue over various minor specifics they are coherently in agreement on the bigger picture. Climate change drives global warming, which by extension is directly linked to our oceans and the rising sea levels. A significant number of nations, predominantly small island states in the Pacific and Caribbean oceans, are extremely vulnerable to the consequences of climate change and specifically to sea level rise. Some of these developing states are seriously in danger of physical extinction, i.e. they risk losing their entire territory due to the rising oceans consuming the low-lying islands in this process.

2.1 Understanding Climate Change

Energy from the sun regulate the temperature of the earth. The amount of solar energy that the earth receives and that remains in the atmosphere, relative to how much is lost back out into space, is a directly determining

factor for the average temperature on earth.[1] It works just like any greenhouse – hence the *greenhouse effect* expression.[2] Energy from the sun reaches earth as radiation, predominately harmless visual light and severely harmful UV-light.[3] The ozone layer absorbs some of the UV-light, stopping it from ever reaching the surface of the earth. About one third of all this solar energy is immediately reflected back into space off of various particles, mainly aerosols, in the different layers of the atmosphere.[4] Land and oceans absorb the rest of the energy and get heated up by it in the process.[5] Like a radiator, the land and the oceans then release this energy back into our atmosphere in the form of infra-red radiation.[6] Greenhouse gases, which are present everywhere in the atmosphere, absorb this radiation, thus warming the atmosphere which increase the average temperature.

The most famous greenhouse gas is probably *carbon dioxide* (CO_2). Other examples of greenhouse gases are *methane* and *nitrous oxide*. Without the greenhouse effect planet earth would be freezing due to yearly average temperatures below zero degrees Celsius.[7] Since millions of years fossil fuels have been stored naturally on earth, but only since the industrial revolution have we begun burning coal, oil and natural gas, and have done so at an alarming rate.[8] This means releasing huge amounts of deposited carbon dioxide and other greenhouse gases back into our atmosphere, leading to an increased greenhouse effect and by extension to global warming. Humans are literally burning fossilized sunlight that has been stored naturally on earth for millions of years, thus warming the planet at a very concerning rate.[9]

By examining the rings of ancient trees, the sediment in lakes and oceans, ice cores and cave alluvium scientists have been able to learn

[1] Maslin (2002) p. 9.
[2] Ramanathan (1998) p. 187 ff.
[3] Archer (2012) p. 11.
[4] Ruddiman (2008) p. 32.
[5] Rayfuse (2012) p. 147 f.
[6] Archer (2012) p. 23 ff.
[7] Raina Lal (2017) p. 237.
[8] Ibid.
[9] Maslin (2014) p. 2.

extensively about our past climate.[10] The short story is that in order to maintain this, historically, relatively cold climate which is a precondition for life as we know it today, we are dependent on the massive ice masses in Antarctica and Greenland as well as the sea ice in the Arctic Ocean. This makes our climate very sensitive to global warming, and at the current rate and with the current modus operandi many scientists and scholars say it is set up for a disaster.[11]

There is, historically, a strong correlation between the concentration of green house gases in the atmosphere and the global average temperature.[12] There is also clear evidence that green house gases, and especially carbon dioxide, have been rising ever since the beginning of the industrial revolution.[13] Ever since 1958 atmospheric concentrations of carbon dioxide have been measured continuously.[14] New additional observatory stations have been established each year, and the records show that the levels of carbon dioxide have increased every single year since that first measurement at the top summit of an Hawaiian mountain.[15] Thanks to this data, together with evidence based on analysis of ice core drillings, scientists have a good idea of the historic variations of carbon dioxide in the atmosphere, and the numbers suggest that the pollution caused by humans in the last 100 years is comparable to a natural equivalent that took nature thousands of years to cause.[16]

Just like wealth, emissions of greenhouse gases are not evenly distributed around the world. *Anthropogenic* green house gases refers to all man-made greenhouse gases, and the developed nations' emissions by far exceed those of developing nations. The IPCC[17] suggests that up until 2010 Europe, North America and Asia were together responsible for over 90 per

[10] Ruddiman (2008) p. 292 ff.
[11] Maslin (2014) p. 3 ff.
[12] Manabe (2019) p. 2 ff.
[13] Warrick and Farmer (1990), p. 6 and p. 17.
[14] Biraud et al, p. 751.
Patra et al (2005) p. 364.
[15] Maslin (2002) p. 14.
[16] Ibid. p. 7.
[17] *The Intergovernmental Panel on Climate Change*.

cent of all industrially produced carbon dioxide.[18] When looking at non-industrially produced emissions of carbon dioxide, however, the pattern is different. The largest source of non-industrially produced emissions of carbon dioxide is the change of land-use, such as deforestation in order to facilitate urbanization, infrastructure development and agriculture.[19] Here the global south dominate; South America, Africa and Asia are responsible for over 90 per cent of the total emissions.[20] Some of these historically low-emitting countries, such as Brazil, China, India and South Africa, have recently begun to increase, and at a rapid pace, their greenhouse gas emissions. The total emissions of anthropogenic greenhouse gases, what used to be the privilege of the relatively small developed world, are now spiking and this is partly due to the rest of the world catching up, creating political and economic difficulties when attempting to deal legally with this issue under international law.[21] A group of countries that are far from catching up, emissions-wise, but where the consequences and the impacts of climate change is perhaps felt the most, are the small island developing states, mainly in the Pacific Ocean and the Caribbean.[22]

Thus far, planet Earth has been very generous and helpful in dealing with our emissions of green house gases and helping us absorb the emitted carbon.[23] Scientists suggest that about half of our emitted greenhouse gases have been absorbed by the Earth, with the oceans and land biospheres splitting the workload around 50/50.[24] However, this is unlikely to continue for a variety of reasons.[25] With the global population ever increasing, continued change of land-use will leave less and less vegetation to absorb the greenhouse gases, and as the global temperature rises, the oceans', and especially the ice-covered areas, capacity of holding greenhouse gases will be reduced accordingly.[26]

[18] Maslin (2002) p. 25 ff.
[19] Ibid.
[20] Ibid. p. 27
[21] Berners-Lee and Clark (2013) p. 206 ff.
[22] Shortened *SIDS*, see more under 2.2.
[23] Bialek and Ariel (2013) p. 476.
[24] Maslin (2014) p. 9.
[25] Bialek and Ariel (2013) p. 477.
[26] Maslin (2014) p. 9.

Since 1880, the global average surface temperature has increased by 0.85 °C, contributing to the sea levels having risen about 20 centimeters as well as over a 40 per cent decline in Arctic sea ice.[27] It is only recently (post-1980s) that these issues have gained serious traction, both in terms of media attention and public debate, but also politically. In the last 50 years scientific models have become much more advanced and accurate in modeling future climate. It was also only in the 1960s that much of the measurements that form the foundation for these models begun taking place. That climate change is happening, and that it is humanity causing it, is widely recognized and accepted today. The trajectory if we stay on the current path of emitting greenhouse gases is for the Earth to warm by somewhere between 2.8 and 5.6 °C in the next 85 years, scientists predict.[28] This should be compared with the 0.85 °C temperature rise of the last 140 years. Short-term deviations of the warming climate does not invalidate the long-term records or prognoses, as these temporary changes occur naturally because of single or temporary events, such as volcanic eruptions or the phenomena *El Niño* and *La Niña*.[29] Decade by decade the trend is obvious and the evidence for global warming occurring is clear, with each decade proving warmer than its predecessor.[30]

Another product of climate change is the change in precipitation, which vary greatly between regions.[31] While some parts will receive unprecedented volumes of rain, other regions will receive less rain and be subject to droughts, especially some of the SIDS countries.[32] Depending on the scale of change and whether it is an increase or a decrease in precipitation, some of those affected will be greatly so and in a number of ways.[33] The warmer the atmosphere the more water vapor it can hold, and since the 1980s the water content in the atmosphere has increased both over land and oceans.[34] In addition to this change of precipitation being greater in

[27] Ibid. p. 11.
[28] Ibid. p. 12.
[29] Henson (2007) p. 32 f.
[30] Archer and Rahmstorf (2010) p. 41 ff.
[31] Ibid. p. 48
[32] Carr et al (2013) p. 44 f.
[33] Archer and Rahmstorf (2010) p. 135.
[34] Ibid. p. 47.

specific regions it is also seasonal, with heavier and more intense rains during rainy seasons and less precipitation at other times of the year.[35]

Compilations by the IPCC show that sea levels rose by 17 to 21 centimeter between 1901 and 2001. Historically, sea levels were measured by the tide-gauge systems, which meant the line of water was measured against land-based benchmarks.[36] This was not without its flaws, and since 1993 a measuring system using satellites (satellite altimeters) is also used, and these two systems are often combined for more accurate data.[37] Despite slightly unreliable results for any given location at a specific time, the long term trends are clear and the overall point still stands. The satellite data alone also shows that global sea levels rose more than 50 millimeters from the first measurements in 1993 up until 2010.[38] On average, the sea level rise from 1971 up until 2010 was around 3.2 millimeters per year, which is almost double the pace of 1.7 millimeters per year when looking at the period 1901 up until 2010.[39] There is no reason to let temporary exceptions to the sea level rising, such as satellite altimeters registering a decrease in sea level during El Niño years, eschew the overall data.[40] One thing to bear in mind when discussing past sea level rise is that the Greenland and Antarctica ices melting is believed to be responsible for over 20 per cent of this rise of sea level.[41]

The evidence from monitoring natural disasters and extreme weather events suggesting climate is changing is overwhelming. The Arctic sea extent is decreasing at a rate of between 3 and 4 per cent per decade, looking at the last three decades, and regions with permafrost (i.e. where, at a certain depth, the ground remains frozen all year round) has seen a larger depth at the surface defrosting during the summers.[42] Weather patterns are also changing, with floods, heat waves and tropical storms such as hurricanes

[35] Seung-Ki et al (2011) p. 379.
[36] Carr et al (2013) p. 17 ff.
[37] Gehrels (2009) p. 327.
[38] Maslin (2014) p. 36 f.
[39] Ibid. p. 37.
[40] Carr et al (2013) p. 19.
[41] Maslin (2014) p. 38.
[42] Ruddiman (2008) p. 356.

and cyclones occurring much more frequently than ever before.[43] A continuing increase of the average wave height also show a trend that supports the case of storms at sea becoming more frequent.[44] What used to happen once per century is now happening once a decade. There is also ample evidence of glaciers around the globe shrinking.[45]

2.2 Predicting Climate Change and Sea Level Rise

Predicting the climate is very different from predicting the weather. No climate model is perfect, but today's estimations are made with great confidence, for a number of reasons. Climate can be generally defined as the average weather over a long period of time.[46] Nature is unpredictable and weather has always been difficult to predict with great accuracy, which is why the weather forecasts are often for a forthcoming period of a few days up to a couple of weeks, at the most. Climate is much easier to predict in the sense that it might be difficult to say exactly which days any given year will be sunny with clear blue skies, but it is rather easy to estimate the amount of hours of clear sunlight during that year.

There are plenty of different ways to predict the climate, and the methods have become much more sophisticated lately as our understanding of how the climate works and what is affecting it has increased.[47] So has technology and technological capacity, not least computer power. Today's most advanced climate models are based on three-dimensional circulation models that simulate the entire globe in a comprehensive way, accounting for regional differences and sub-climates. On the one hand there are huge amounts of various land surface biotopes to consider, on the other hand there are also the different layers of the atmosphere and the oceans to account for. One of the main focuses of the IPCC is to predict our future

[43] Carr et al (2013) p. 46.
[44] Archer & Rahmstorf (2010) p. 55.
[45] Zemp et al (2019), p. 382-386.
Zemp (2019) p. 39.
[46] Archer (2012) p. 1 ff.
[47] Stocker (2011) p. 28 ff.

climate, assessing all available scientific research and running simulations to forecast long-term climate changes.

The first IPCC report in 1990 was a far cry from today's advanced simulations. The fifth IPCC assessment report, from 2014, attempted to account for socio-economic variables and regional differences.[48] All weather occurs in the *troposphere*, the lowest layer of the atmosphere, and local anomalies in this layer is highly relevant to consider in a climate simulation. For its latest report, the IPCC ran upwards of 40 advanced climate simulations and used all available models, then presented the mean and the variation of uncertainty based on all results, thus giving an arguably confident ballpark-result of what to expect in the future.[49]

Greenhouse gases, generally, have a warming effect on the Earth, but there are also cooling effects to consider when trying to understand climate change. Aerosols (particles in the air, of which many are anthropogenic) have a cooling effect in the sense that they reflect solar radiation back into space before it reaches the surface of the Earth.[50] Water vapor is also often mentioned as having a cooling effect, although it is highly debatable whether the net effect from water vapor can be said to have such an effect. Water vapor has the same effect as all natural white surfaces, like clouds and ice, namely the *albedo* reflection.[51] Water vapor is mainly found in clouds, and although they reflect radiation from the sun they also absorb heat radiation and thus warm the climate, just like carbon dioxide does.[52] Therefore, clouds are among the more unpredictable parts of climate simulations, but scientists today suggest that the net effect of clouds overall still is that they have a warming effect rather than a cooling one, and by quite a large margin.[53] An even greater source of uncertainty in climate models, than clouds, are humans. The human factor is extremely difficult to accurately account for, since we control the rate of deforestation, land-use change, population growth, burning of fossil fuels and the development of

[48] Fifth Assessment Report, IPCC (2014).
[49] Ibid.
[50] Ruddiman (2008) p. 32.
[51] Maslin (2002) p. 40.
[52] Archer (2012) p. 50 f.
[53] Maslin (2014) p. 51 f.

green technology and alternative fuel sources. This is one of the reasons the IPCC run so many aggregated advanced climate simulations and then present the mean and the variation of uncertainty for its assessment reports. The latest assessment report suggests the average global temperature could rise by as much as 4.1 °C by year 2100.[54] A global average sea level rise of 1 meter over the same period also seem unavoidable, thus placing large areas of what is today considered low-lying dry land under water.[55] Locally, the sea level could rise even more. In the last 60 years the total sea level rise in parts of the western south Pacific has been three times as high as the global average.[56]

2.3 Small Island Developing States

Small Island Developing States (SIDS) is an umbrella term under which a group of small ocean states, predominately but not exclusively from the Pacific Ocean and the Caribbean, have come together for common causes such as their similar challenges in sustainable development and vulnerability to climate change. It is also a plurality term for those individual states themselves, i.e. small states without mainland which are still in a developing stage relative to the developed world's standards. Merely by virtue of existence, this group of countries shine a light on the law on statehood in the current era simply because their very existence is threatened by the impacts of climate change.[57] Their unique situations problematize the law on statehood and challenge the understanding of it, and this make them key players in the combat on climate change in general and sea level rise in particular.[58]

SIDS as a multilateral group for cooperation currently has 58 members.[59] Of those, 38 are UN members and the other 20 are still constituent entities, in varying forms, under their colonial powers, e.g. Puerto Rico (US), Aruba (The Netherlands), Guadeloupe (France) and the

[54] Fifth Assessment Report, IPCC (2014).
[55] Carr et al (2013) p. 54.
[56] Kumar et al (2018) p. 1502-1518.
[57] Torres Camprubí (2016) p. 275.
[58] Ibid.
[59] https://sustainabledevelopment.un.org/topics/sids/list.

British Virgin Islands (UK). Within the UN, the 38 independent states associate with the *Alliance of Small Island States* (AOSIS) as well as with their respective regional cooperation bodies: *Indian Ocean Commission*, *Pacific Islands Forum*, and the *Caribbean Community*, for unified negotiation and lobbying efforts.[60]

Much can be said about how these nations came to be independent states, but most of the SIDS countries are relatively young and attained their statehood fairly recently.[61] Those in the Pacific Ocean, in particular, share a fascinating history where colonialism and the two World Wars played a significant part.[62] Irrespectively, they do exist and they are by all means independent juridical entities, and they face the threat of climate change and global warming as much as any state at the moment. In the Pacific Ocean, twelve nations together account for over 20 000 islands, with massive adjoining maritime areas, spread out over a huge area.[63] They are sometimes referred to as *micro-states*, together with mainland states of similar size, such as Lichtenstein and Andorra in Europe, to name a few.

The SIDS nations are spread out across the global oceans, and include São Tomé and Príncipe in the Gulf of Guinea and The Comoros on the African east coast, as well as fellow African nations Mauritius and the Seychelles. Of particular interest when examining consequences of climate change-induced sea level rise in the near future are Kiribati, Tuvalu, The Maldives, and The Marshall Islands.[64] These four island nations each have their average altitudes just meters above sea level, and their highest elevated points are often not much above that, making them the most endangered states in the world with regards to sea level rise.[65] These states consist of a number of different islands, and for some of them their islands are distinguishably different from each other, ranging from volcanic islands to coral atolls and high coral islands.

[60] http://aosis.org/about.
[61] Wannier and Gerrard (2013) p. 6.
[62] For more, see 1.1.2 in Torres Camprubí (2016).
[63] Torres Camprubí (2016) p. 33.
[64] Crawford and Rayfuse (2012) p. 244.
[65] Torres Camprubí (2016) p. 46.

Kiribati, with its many and very scattered islands, is one of the larger island groups if you take its territorial waters into account, but also one of the most remote countries in the world, with its future clouded by the effects of climate change.[66] Although there is an elevated point at 81 meters above sea level on the one raised limestone island, Banaba, the rest of the island group consists of low-lying atolls with a maximum elevation of between 2 and 4 meters.[67] Kiribati became independent from the UK in 1979 and became a full member of the UN twenty years after that. Among SIDS countries threatened by climate change Kiribati has been especially creative and proactive. The first reports of Kiribati buying foreign land came in 2012, when it announced its plans to purchase land on Fiji for extracting earth to be used for sea defenses, as well as planting crops and relocate around 500 farmers on the land.[68] Kiribati purchased 6,000 acres from Fiji and in 2013 president Anote Tong defended the acquisition, primarily to ensure food security rather than relocating citizens, by saying "there is nowhere to move back to because we have no hills, we have no mountains. [...] it is more serious than perhaps many people understand".[69] The Kiribati population may very well become the world's first climate refugees, but the purchase has been criticized as a poor investment and an overpayment.[70] Without exploring in depth the matter of climate change-migration, which is a major topic on its own, it is obvious that relocation is a last resort strategy that most of the affected islanders would prefer to avoid. New Zealand has created an annual lottery giving 75 Kiribati citizens the chance to emigrate to New Zealand, but quotas in the so-called *Pacific Access Ballot* are reportedly not being filled, as people have little interest in leaving their homes if they don't have to.[71] Transactions of land between sovereign entities and relocation of its citizens is not an entirely new phenomenon, not even for the region, but the stakes are certainly higher this time.[72] In 2014

[66] IMF Country Report No. 19/26 (2019) p. 3.
[67] Oakes et al (2016) p. 21.
[68] BBC News, 8 March 2012.
[69] ABC Australia, 6 February 2013.
[70] DevPolicy, 11 January 2016.
[71] BBC Future, 15 August 2019.
[72] Torres Camprubí (2016) p. 105.

an entire village, Vunidogoloa in Fiji, was abandoned and the around 100 inhabitants were relocated to a new town built by the government on top of a nearby hill.[73] All together, there are around 580 000 people directly affected if all populations on threatened small islands were to be relocated.[74] Based on the current predictions it is entirely plausible that this entire population, or at least most of it, will be forced to migrate by 2100.[75]

Tuvalu and The Marshall Islands are also among the island states most acutely threatened by climate change. The tiny island group of Tuvalu has its highest elevation at only 5 meter above sea level.[76] The Marshall Islands' highest point reaches 10 meter above the ocean, but most of the inhabitable islands are only elevated a couple of meters above sea level.[77] Rising sea levels threaten to submerge most of the islands, but also to crack open a plant with radioactive waste deposited by the United States during World War II, making the need to combat rising sea levels even more dire for the Marshall Islands.[78] The Marshall Islands has among the oldest continuous records of the sea level, and their oldest still operational tide-gauges have been in use since 1946.[79] The Maldives in the Indian Ocean, together with its Pacific Ocean counter-parts, is also considered one of the island groups most threatened by sea level rise. The highest elevation for any of the Maldivian islands is 1.5 meter.[80] As early as 2009 the Maldives made headlines when the government sent out a climate emergency alert by conducting a 30-minute cabinet meeting in full scuba diving gear at 3.8 meters depth in the sea.[81]

During the third SIDS conference, held in Samoa in 2014, the member states agreed to and adopted the *SAMOA Pathway*[82], shedding light on their "unique and particular vulnerabilities".[83] The outcome document

[73] Worland (2019) p. 32.
[74] Johnsen (2018) p. 173.
[75] Juvelier (2017) p. 24.
[76] Beyerl et al (2018) p. 29.
[77] Giardino et al (2018) p. 2238.
[78] BBC News, 30 December 2019.
[79] Ford and Kench p. 15.
[80] Gagain (2018) p. 84.
[81] Reuters, 17 October, 2009.
[82] SIDS Accelerated Modalities of Action (SAMOA) Pathway.
[83] https://sustainabledevelopment.un.org/sids2014.

was later the same year endorsed by the UN General Assembly, and focuses on "the sustainable development of small island developing states through genuine and durable partnerships".[84] The document acknowledges many aspects of political and developmental issues relevant to the member states and explicitly addresses loss of territory among many climate change-related threats. The SAMOA Pathway recognizes that "sea-level rise and other adverse impacts of climate change continue to pose a significant risk to small island developing States and their efforts to achieve sustainable development and, for many, represent the gravest of threats to their survival and viability, including, for some, through the loss of territory".[85] In the outcome document the member states sound a profound alarm over the continuing global rise of greenhouse emission gases and reaffirm that climate change is one of the greatest challenges of our time.[86]

The SIDS community, with the AOSIS organization at the forefront, serves an important purpose. This is highlighted by the members' successful attempts to get the threat of climate change-induced sea level rise up on the global political agenda, including the UN General Assembly, thereafter followed by the UN Security Council.[87] The internal differences between member states of SIDS are many, but the commonalities are striking at the same time. They stand at a juncture where they face similar adversity and share a varying need of international support in their efforts to not only combat these climate change-related threats but simultaneously drive sustainable development and economic growth.[88] All states will eventually have to adapt to climate change, and SIDS countries sooner than most, hence these states can share valuable lessons and learn from the experience of others.[89] Although one solution does not fit all situations, be it for different environmental, economic, cultural, social or political reasons, sharing and communicating adaption efforts should be a win-win for all

[84] UN General Assembly, Resolution A/RES/69/15, (2014).
[85] The SAMOA Pathway (2014), § 11.
[86] Ibid. § 32.
[87] UN General Assembly, Resolution 63/281, 'Climate Change and its Possible Security Implications', (2009).
UN Security Council, 8307th meeting, 11 July 2018.
[88] OECD (2018) p. 116 ff.
[89] Klöck and Nunn (2019) p. 209.

parties involved.[90] For this reason SIDS is a great cooperative organization for combating climate change. Next in line to be included in the group of small island developing states, and reasonably a future prospective member of AOSIS as well, could be the island of *Bougainville* (APB), currently an autonomous part of Papua New Guinea. The island voted overwhelmingly for sovereignty in a referendum in November 2019, although the results were non-binding for the Papua New Guinean government.[91]

The SIDS countries, mainly low-lying island states, together challenge the understanding of the law on statehood in the era of today, simply because their very existence is threatened by the impacts of climate change.[92] They highlight the complexity of it, as the world as we know it today transforms.[93] This alone makes this specific group of countries, notwithstanding their remoteness and size, key players in the common task of combating global climate change.

2.4 Territory at Sea

Jurisdiction and sovereignty over maritime areas, a state's *territory at sea*, is since the entry of the *United Nations Convention on the Law of the Sea* (UNCLOS) onto the stage of international law governed by this extensive and rather exhaustive set of treaties. Before 1930 no formal attempt to codify law regulating the sea had been made and the first attempt, by the League of Nations, was not successful.[94] The UNCLOS convention in its current form, *UNCLOS III*, went into effect in 1994 when the 60th state, Guyana, ratified this latest edition.[95] The first four treaties, which entered into force in a span between 1962 and 1966, were negotiated between 1956 and 1958.[96] Although these treaties were considered highly successful there

[90] Ibid.
[91] BBC News, 11 December 2019
[92] Torres Camprubí (2016) p. 275.
[93] Ibid.
[94] Powers and Stucko (2013) p. 125.
[95] United Nations Convention on the Law of the Sea (UNCLOS) 1982.
[96] Convention on the Territorial Sea and Contiguous Zone.
Convention on the Continental Shelf.
Convention on the High Seas.
Convention on Fishing and Conservation of Living Resources of the High Seas.

were still a few areas left unregulated, but with the completion of UNCLOS III these issues were finally covered and resolved. UNCLOS III is the result of a conference that technically lasted from 1973 to 1982 because the conference favored a consensus process, as opposed to a majority vote.[97] However, given that all 160 parties eventually reached consensus, the outcome document was well-received, even though it took some time to reach the threshold for ratifications.[98] It has been overwhelmingly endorsed since it entered into force in 1994.

A state's territory at sea can be of great importance in many different ways to the state, e.g. for purposes of food security, livelihood, transport and energy. The small island developing states often have disproportionately large territories at sea, compared to the size of their dry land. This is because of how these maritime areas are delimitated, according to UNCLOS. The low water mark of the coastline constitutes the *baseline*, which is the most important line of them all, as the convention sets limits to all maritime areas with the baseline as the starting-point.[99] There are exceptions which allow the baseline to be drawn as a straight line where the coast is deemed too irregular to use the low water mark as basis for the baseline.[100] This is referred to as *straight baselines* as opposed to *normal baselines*.[101] Atolls and fringing reefs above the water at low-tide are another exception.[102] For island states made up of such atolls and reefs, e.g. many of the SIDS countries, the baseline would be the seaward low-water line of the reef.[103] Any water that ends up on the inside (landward side) of the baseline is referred to as *internal waters*, and sovereignty and jurisdiction for internal waters is no different than for the rest of the dry land.[104] Seaward from the baseline and out to 12 nautical miles is the zone called *territorial waters*, and the state is free to use any resources and regulate any use of the waters, as well as set the laws and rules governing this area. Foreign vessels are

[97] Rothwell & Stephens (2016) p. 12.
[98] Ibid. p. 18 f.
[99] UNCLOS, art. 5.
[100] Ibid. art. 7.
[101] Sefrioui (2017) p. 6 f.
[102] UNCLOS, art. 6.
[103] Rayfuse (2012) p. 20.
[104] UNCLOS, art. 8.

allowed "innocent passage" through territorial waters, meaning peaceful passage in good order, not for purpose of any military conduct or spying, fishing or polluting, and so forth.[105] Another 12 nautical miles from the seaward end of the territorial waters is the *Contiguous Zone*, where the state continues to control customs, taxation and immigration.[106]

The most important area to define for many of the small island developing states is the *Exclusive Economic Zone* (EEZ). The EEZ extends 200 nautical miles into the sea from the baseline, and gives the state exclusive rights of exploitation in this zone, including fishing and drilling for oil.[107] Foreign states have the right to navigate through or fly over this area, and under some circumstances to lay pipes and cables on the sea bottom.[108] Depending on the shape, location and natural prolongation of the *continental shelf* there are also instances where the state may have exclusive rights to the seabed, beyond the 200-mile EEZ.[109] In these cases, it means the right to harvest minerals, nonliving material, and living creatures, in or attached to the continental shelf, but not in the water itself above the bottom, beyond the EEZ.[110]

It is worth remembering that there are obviously cases where not everyone's maritime territory can extend as far as the maximum prescribed by UNCLOS, simply because of someone else's superior claim or areas that would be overlapping.[111] To no surprise, this can be a cause for disagreements, and there are some disputed waters. The South China Sea is a great example of this.[112] One particular dispute between China and the Philippines over the artificial islands that China has been building in order to extend their claim for territories at sea was even brought to court. The Permanent Court of Arbitration ruled in favor of the Philippines, after a long and drawn out process.[113] The court pointed out that artificially built islands

[105] Ibid. art. 17.
[106] Ibid. art. 33.
[107] Ibid. art. 55-57.
[108] Ibid. art. 58.
[109] Ibid. art .76.
[110] Ibid. art. 77.
[111] Scalieri (2019) p. 363 f.
[112] Zou (2016) p. 363 ff.
[113] Permanent Court of Arbitration, Case Number 2013-19, Ruling on 12 July 2016.

do not constitute islands giving rise to any territorial claims under the definition in UNCLOS.[114] In the light of this ruling, it appears that building islands for the small island states would be simply for using the dry land space it creates rather than to retain maritime territory. Having it any other way could also open up a can of worms that might best be kept close, even for these states. Recognizing man-made islands as basis for territorial claims at sea would invite much more powerful states, e.g. China, to build and claim large and currently undisputed areas. Among the pacific island nations there are some disputed areas as well, and more problematic is that not all states have promulgated their baselines in a correct way, and may lack unilaterally self-proclaimed maritime areas.[115] Even more numerous are the cases and disputes regarding conflicting continental shelf claims.[116] Much can be said on this topic but with regards to climate change-induced sea level rise and how it affects statehood there is no need to dig deeper into these specifics.

Contrary to artificial islands, permanent structures on the original coast built with the aim of protecting against erosion and loss of land could prove to have more potential, and will be covered further down. Historically artificial islands have been accepted as territory, albeit without any influence on maritime zones.[117] Simply constructing or acquiring floating islands to replace lost territory with would probably not get the same treatment, at least legally, although politically they might be accepted by the international community on moral grounds.[118] Floating islands would technically disqualify as artificial islands and more likely be deemed to be artificial installations.[119]

One relevant provision in UNCLOS concerns the definition of an island as opposed to rock. What is today considered dry land could very well in the future be just rocks, in strictly juridical terms, according to

[114] Ibid.
[115] Torres Camprubí (2016) p. 52 ff.
[116] Ibid. p. 62.
[117] Grote Stoutenburg (2013) p. 62.
[118] Ibid. p. 63.
[119] Ibid.

international law as the land becomes uninhabitable due to sea level rise.[120] This island vs. rock dilemma has been mentioned above and its legal base is found in article 121 of UNCLOS. Article 121 constitutes what is to be considered an island with dry land giving rise to territorial waters, but also contains a caveat stating that "rocks which cannot sustain human habitation or economic life of their own shall have no exclusive economic zone or continental shelf".[121]

[120] Torres Camprubí (2016) p. 74.
[121] UNCLOS, art. 121 (3).

3 Statehood and State Recognition

Statehood is defined as the condition of being a state, and states are both the primary object, but also the subject, of international law.[122] Being a state, however, is not as clear cut of a condition as one might think. Statehood, according to general international law, is derived from the *Montevideo Convention on the Rights and Duties of States*.[123] To become a state there are four criteria in the Montevideo Convention that has to be met: "(a) a permanent population, (b) a defined territory, (c) government, and (d) capacity to enter into relations with the other states".[124] It is an ongoing debate what role state recognition has in terms of statehood. One thing that is clear is that statehood does not automatically guarantee recognition as a state by other states.[125]

Particularly interesting is the territorial criteria. States have ceased to exist before, but it is unprecedented that a recognized state loses its entire dry land territory.[126] Historically, there are also a number of states whom have been formally recognized by getting accepted into the UN or League of Nations despite the borders being unclear or ill-defined.[127] The same is true with regards to the other three formal criteria according to the Montevideo Convention.[128] The same question is also valid for what happens to maritime waters once the coastline that they are based on disappears. The criteria for becoming a state only defines what is needed to attain statehood, thus it can be argued that no longer fulfilling the criteria would not ipso facto mean loss of statehood, even though some have made, and will make, that argument.[129] The criteria for statehood are often applied more strictly at

[122] Crawford and Rayfuse (2012) p. 245.
[123] Rayfuse and Scott (2012) p. 20.
[124] Montevideo Convention on the Rights and Duties of States, art. 1.
[125] Crawford and Rayfuse (2012) p. 246.
[126] Gagain (2012) p. 92.
[127] Raina Lal (2017) p. 244.
[128] Crawford and Rayfuse (2012) p. 247.
[129] Fasternrath (1987) p. 465.

the formation of a state than in regards to its continuity.[130] Somalia is one example of a state continuing to be considered a state despite many declaring it a failed one, although this case is detached from the territory criteria specifically.[131] This suggests that the concept of a failed state is more about politics than about the application of international law.[132] Based on what has been discussed above, this begs the question: are some criteria more important than others? There are certainly examples of states being recognized as such by the international community, entering into legally binding treaties, despite not having an effective government, or even a defined, but rather a highly contested, territory. How statehood can be lost and how statehood can be retained are questions that will have to be answered by the international community in a not too distant future. The answer will have political, economic and societal consequences, but will have to be based on international law.

How statehood can be achieved is relatively straightforward, but nonetheless worth examining. How statehood could be lost or retained is more disputed.[133] One suggestion is that a state will cease to exist when it is split up into smaller entities, or merged into a larger ditto, or because it physically ceases to exist.[134] The latter of the three would include a scenario where all dry land is consumed by the rising sea, and for some countries that is no longer an unthinkable scenario. If that were to happen it would be an unprecedented challenge for the global community, let alone for the affected island state of course, in terms of how we define statehood and continue to recognize already sovereign nations as states. Another proposal for retained statehood, in response to the phenomenon of submerged island states, is the creation of new legal subjects in international law.[135] The suggested term for this alternative form of statehood is *Ex-Situ Nationhood* and the idea is that it would allow for continued sovereignty in perpetuity for the state and its

[130] Kreijen (2004), p. 110.
[131] Crawford and Rayfuse (2012) p. 247.
[132] Ibid.
[133] Torres Camprubí (2016) p. 7.
[134] Fasternrath (1987) p. 465.
[135] Burkett (2013) p. 89 f.

citizens, regardless of geographic location.[136] Although plausible in theory, its implementation in practice seem unlikely.

There has not been much reason to question the precondition of a defined territory when evaluating statehood, to date. From the outset it makes perfect sense for a sovereign state to also physically exist in the form of a dedicated space on Earth. When the Montevideo Convention was negotiated in 1933, the prospect of climate change was not among the considerations, and nor was the primary aim of the convention to deal with statehood alone, but rather with the rights and duties of states, as the title implies. The convention merely codified the idea of statehood according to customary international law, i.e. wrote down what was already an established practice.[137] When it entered into force in 1934 it had been signed by 19 states, arguably unknowing that it would forever since be the go-to convention for, and benchmark of, declaring statehood.[138] The convention explicitly states that the existence of a state, strictly politically, is independent of recognition by other states.[139]

Practical effectiveness on the one hand, and legality one the other, can be two conflicting principles.[140] The former focuses on the factual situation in any given case while the latter is more concerned with remaining within accordance of international law, primarily not violating any *peremptory norms*, also referred to as *jus cogens*.[141] Peremptory norms of international law, or jus cogens, hails from treaty law and the Vienna Convention.[142] It provides that treaties in conflict with peremptory norms, at the time of its conclusion, are void.[143] Originally, the principle of peremptory norms covered only treaties, but international law has since developed and the scope of peremptory norms is now accepted in the entire international legal doctrine and extends beyond its initial domain.[144] Moreover, it has been

[136] Ibid. p. 90 f.
[137] Montevideo Convention, art. 1.
[138] Raina Lal (2017) p. 242.
[139] Montevideo Convention, art. 3.
[140] Grote Stoutenburg (2013) p. 58.
[141] Ibid.
[142] Vienna Convention on the Law of Treaties (VCLT), May 23, 1969.
[143] Vienna Convention (VCLT), art. 53.
[144] Grote Stoutenburg (2013) p. 73.

proposed that de-recognition of island states because of their climate change-related realities could be a breach of *jus cogens*, thus making the de-recognition illegal according to international law.[145] This is more extensively covered further down. A jus cogens-based claim could be made not least in combination with human rights law, as human rights are universal, and in addition, certain human rights are non-derogable. Thus, stripping a state of its statehood would deny the citizens of that state many of their most essential and non-derogable human rights.[146] For all purposes, a nexus between the breach and the consequences of it would have to be established.[147]

Regardless of recognition by others the state is free to defend itself and provide for its people, and "the exercise of these rights has no other limitation than the exercise of the rights of other states according to international law".[148] This line of reasoning is referred to as the *declarative theory* of statehood, and is the one The Montevideo Convention codified.[149] As long as a state fulfills the four criteria mentioned earlier, and does so without the use of military force, it should be considered a state. A caveat that forbids any use of military force in order to gain sovereignty is also codified in the Montevideo Convention.[150] "Independence", as such, is not mentioned in the Montevideo Convention, but it is more or less a precondition for fulfilling the fourth criteria of statehood, "capacity to enter into relations with other states".[151] The declarative theory is opposed to the *constitutive theory* of statehood, which hails from the colonial era in the 19th century.[152] It requires a prospective state to be recognized by an already recognized state.[153] Beside the moral grounds this theory can be challenged on, it has also proven, practically speaking, to be less than satisfying, e.g. when a state is recognized by some but not by others. In an increasingly

[145] Ibid. p. 79 f.
[146] Venn (2017) p. 345 ff.
[147] Bialek and Ariel (2013) p. 510 f.
[148] Montevideo Convention, art. 3.
[149] Lauterpacht (1947) p. 419.
[150] Montevideo Convention, art. 11.
[151] Kreijen (2004) p. 110.
Montevideo Convention, art. 1 (d).
[152] Kreijen (2004) p. 110.
[153] Murphys and Stancescu, p. 10.

multilateral world any theory that can avoid polar-opposites is probably preferable. The constitutive theory has been increasingly challenged by the declaratory theory during the twentieth century as modern international law to a greater extent acknowledges that effectiveness as an ambition could be in conflict with fundamental principles of international law.[154] Today, the dominant of the two theories must be said to be the declaratory theory in terms of statehood.[155]

Despite having reached an honorable age, the first article of the 1933 Montevideo Convention stands relatively unchallenged as the basis or starting point when it comes to the formation of a state. The claim that it is an accurate codification of statehood has not been much disputed at all, and among those later reviewing and approving it is the International Law Commission, whom should be considered as good of a yardstick par excellence as any.[156] However, the Montevideo Convention's definition of statehood should perhaps be interpreted as a declaratory matter of fact rather than of law, and the set of criteria should not be confused with elements, therefore serving to prove the existence of the state rather than constituting it.[157] Not all scholars are convinced that the Montevideo Convention should be regarded as highly as it is, but other than criticizing its shortcomings, there is no denying that the convention continues to get cited for the definition of statehood.[158]

State recognition encompasses what it takes to become a state whereas statehood means being a state. For most of the SIDS countries, achieving statehood was just the first step of many in establishing themselves in the international community. Statehood on its own, simply being a state, does not automatically mean receiving invitations to all multilateral clubs. The case of getting UN membership for SIDS countries was no different from that of most micro-states in general, i.e. rather

[154] Grote Stoutenburg (2013) p. 58.
[155] Gagain (2012) p. 88.
[156] Grant (1999) p. 407.
[157] Torres Camprubí (2016) p. 30 f.
[158] Grant (1999) p. 453 ff.

difficult.[159] Simply being a state was not enough, especially according the British and American delegations.[160]

The Pacific Island states, in particular, have been reluctant to acceding international treaties and in many cases they would have been unable to comply with them had they done so.[161] Despite this they remain unambiguously committed to international environmental law.[162] In the abovementioned SAMOA Pathway, they voice their support for the UNFCCC[163] as the primary international intergovernmental forum for negotiating the global response to climate change.[164] SIDS countries are so-called *non-Annex-I* countries under the UNFCCC, meaning they do not have any mitigation obligations, like the industrialized countries do.[165] The SIDS countries are, regardless of treaty accession or IGO affiliation, to be regarded as active and relatively powerful actors in climate negotiations.[166] Achieving statehood is one thing, retaining it or potentially losing it is another, and the latter will be further covered below. Achieving and retaining statehood, respectively, do not necessarily require fulfilling the same criteria, and the termination of states due to physical disappearance does not have existing rules in international law the way the creation of states does.[167]

The voices of the small island developing states and their cries for survival as the sea level keeps rising are gaining more and more attention.[168] A century ago it was not seen as controversial to suggest that a state submerged by the sea would cease to exist, especially since this scenario at the time seemed highly unlikely to take place, but since then the discussion has become more nuanced.[169] There are a few different lines of reasoning at

[159] Torres Camprubí (2016) p. 41.
[160] Ibid.
[161] Ibid. p. 231.
[162] Ibid.
[163] The United Nations Framework Convention on Climate Change (UNFCCC).
[164] The SAMOA Pathway (2014), § 34.
[165] UNFCCC, art. 4 (2) (a).
[166] Torres Camprubí (2016) p. 233.
[167] Rayfuse and Scott (2012) p. 20.
[168] Torres Camprubí (2016) p. 7.
[169] Ibid.

the moment.[170] At least one of them suggests that a complete submergence of a state would lead to the claim of statehood to fail.[171] Others instead point to the fact that international law concerning these specific situations is not very clear, and a material loss for the subject (i.e. for the state) cannot automatically lead to loss of the legal personality (i.e. statehood).[172] Since states are non-physical juridical entities their extinction should not be based on loss by physical force of elements alone.[173] Although the criteria in the Montevideo Convention are applied strictly at the formation of a state, there are without a doubt examples of cases where they have been much more forgiving when it is a question of continuity of a state's being.[174] These contradicting views on statehood and how you can lose the status as a state, if at all, indicates that the question is open to debate and that there is no definitive answer yet.[175] Ceasing to fulfill one of the Montevideo criteria, e.g. through loss of land, does not necessarily deprive a state of its statehood, if that state was already once recognized as a state.[176] Still, in the absence of a minimum requirement in terms of size, even the tiniest bit of land has to be inhabitable or it risks being defined as a rock instead of an island.[177] This island vs. rock dilemma has been mentioned already, but cannot be disregarded when scrutinizing relevant international law in relation to statehood and its impacts by climate change.

Since the idea of a so-called failed state is more political than legal, as suggested above, there is possibly even a moral argument for the continuity of states affected by climate change to be made.[178] This especially makes sense because the states at risk of being consumed by the sea are not the culprits of, and not causing the, climate change. The anthropogenic contribution to climate change has predominately been made by developed countries in the West. As these Western states at the same time have much

[170] Ibid.
[171] Ibid. p. 8.
[172] Ibid. p. 113.
Burkett (2013).
[173] Torres Camprubí (2016) p. 113.
[174] Kreijen (2004) p. 110.
[175] Torres Camprubí (2016) p. 8.
[176] Crawford and Rayfuse (2012) p. 247.
[177] Grote Stoutenburg (2013) p. 60.
[178] Crawford and Rayfuse (2012) p. 247.

stronger diplomatic powers in general, they do not only have the leverage, but perhaps a moral duty, to argue in favor of small island developing states' continuity as states. The abstract prerogatives of sovereignty have been intrinsically linked with the tangible and material equivalents of it for as long as the very concept of a state has existed, thus attempting to separate the two from each other begs numerous questions yet to be answered.[179] If the latter can survive, i.e. legitimately base its claim for continuity, on the former then that would mean a state could continue to exist and function, albeit without a physical territory at its disposal. It is a question without a definitive answer, and there have been opinions leaning both ways. In the early twentieth century in a case between the Netherlands and the United States an arbitrator suggested in a dictum that a state could not exist in absence of territory.[180] However, this has never been regarded as setting any legal precedent.[181]

De-territorialisation, referring to territory both as a physical and legal construct, can be partial or total, and is described as the physical changes to a state's territory and the subsequent legal shift in territorial right due to those changes.[182] With few exceptions, every state with a not insignificant coastline is soon to be, or already is, affected by partial de-territorialisation. However, of greater importance here is to examine those states threatened by total de-territorialisation. Most of the Pacific Ocean and the Caribbean are affected to some extent, but none more than the islands of Kiribati, Tuvalu, the Marshall Islands, and in the Indian Ocean, the Maldives, with their common denominator being that the highest elevated point, on the majority of their islands, only reaches a few meters of altitude above sea level.[183]

There is not one, single, inherent definition of *territory* within the international legal system, let alone semantically in the word itself.[184] Because of its centrality to the concept of statehood, there is merit to view it

[179] Torres Camprubí (2016) p. 17.
[180] The Island of Palmas case (1928).
[181] Crawford and Rayfuse (2012) p. 250.
[182] Torres Camprubí (2016) p. 46.
[183] Ibid.
[184] Ibid. p. 18.

in the broadest possible sense. Territory is one of the preconditions for statehood according to the Montevideo Convention, but the demarcations of that defined territory also determine the adjacent maritime areas paramount to the survival of the people on many of the small island states. The criteria of a defined territory is one of four qualifications to prove the existence of a state, not one of four elements constituting a state.[185] There is also no specified minimum threshold to be met in regards to the size of the territory, hence the criteria should be considered satisfied provided some territory remains.[186] On the flipside, however, most scenarios predict low-lying islands will become uninhabitable before eventually being submerged, thus making the territorial areal-size discussion void and making the argument redundant.[187] Consequently, SIDS countries must do the utmost to preserve at least some part of their island group inhabitable.[188]

An interesting analogy can be made from the case of the *Order of Malta* which, just like the *Holy See*, continues to be recognized as a state by over a hundred countries and continues to enjoy many sovereign privileges, such as diplomatic immunity, despite not having any territory at all.[189] Its founding purpose was to provide medical care, and it still enjoys the sovereign immunity necessary to carry out those duties.[190] Other than a few buildings in Rome which they retain ownership over, not sovereignty, The Order of Malta has had no physical territory since it lost sovereignty over the Maltese in 1798.[191] At the very least, this shows that there is some room for flexibility within the current legal system when it comes to statehood and the precondition of a defined territory.[192] Despite having no physical territory The Order of Malta maintains a government and issues passports.[193] It even has embassies in over fifty countries.[194] This kind of special treatment depend on strong historical and political arguments and it

[185] Ibid. p. 30 f.
[186] Raina Lal (2017) p. 244.
[187] Grote Stoutenburg (2013) p. 61.
[188] Ibid.
[189] Raina Lal (2017) p. 260.
[190] Crawford and Rayfuse (2012) p. 251.
[191] Johnsen (2018) p. 182.
[192] Torres Camprubí (2016) p. 143.
[193] Raina Lal (2017) p. 260.
[194] Gagain p. 92f

is impossible to say how the international community would react if a state were to invoke this example today, especially a small and remote state without much leverage.[195]

However, even with a solid legal argument allowing a submerged state continued recognition by the international community, its de-territorialized form will likely struggle in the long run due to lack of citizens, thus becoming irrelevant as a juridical entity.[196] Furthermore, making an analogy from the UNCLOS definition of islands, what is today considered an island could in the future be nothing more than rocks, in strictly, according to international law, as the land becomes uninhabitable due to sea level rise.[197] Further adding weight to this is the fact that the relevant article of UNCLOS was negotiated relatively early on in the negotiations and has never been amended or seriously questioned since.[198] However, here the moral argument can again be brought up to keep delimitations and particularly defined entities unaltered.

[195] Torres Camprubí (2016) p. 113 and p. 143.
[196] Jain (2014) p. 52.
[197] Torres Camprubí (2016) p. 74.
[198] Torres Camprubí (2016) p. 73.

4 Impacts and Solutions

4.1 Consequences of Climate Change and Global Warming

There is an ongoing debate on whether a point of no-return has been passed already, in terms of the decline of ice on the massive ice sheets on Greenland and the Western Antarctic. These discussions revolve around methane, also considered a greenhouse gas, trapped in those ice sheets today and the irreversibility refers to the scenario of methane getting released into the air as the ice melts further, augmenting global warming, which in turn would release even more methane into the atmosphere, even further boosting the global warming, releasing still more methane, and so on and so forth.[199] This phenomenon is also referred to as *positive climate feedback*.[200] The quantity of these trapped elements is not known, but huge amounts of carbon in the form of gas hydrates, a mixture of water and methane, is currently deposited in solid form, because of pressure and temperature, in the ice sheets and in the permafrost as well as in the sediments under the oceans.[201] A warmer climate could release these substances as gas, creating a runaway effect. Methane is a much stronger greenhouse gas than carbon dioxide and would thus intensively add to the warming effect, releasing even more methane, as described above.

One thing is clear, the worst case scenario of current climate simulations has the average global temperature eventually rising with over 5 °C compared to today, and if that were to happen all ice on both Greenland and the Western Antarctic would completely melt.[202] By the time those are completely melted, the sea level would have risen by 13 meters.[203] First and foremost, this means the majority of the small island states would be evaporated, many of them entirely, but it also means many major cities

[199] Dean et al (2018) p. 232 f.
[200] Mascarelli (2009) p. 46 ff.
[201] Dean et al (2018) p. 227 f.
[202] Maslin (2014) p. 96 f.
[203] Ibid.

around the world would be under water as well. Many of the world's 20 largest cities are located on, or close to, a coast.[204] How the climate will respond to forces such as greenhouse gases is a complex question, and its response is often delayed rather than immediate. The melting of large ice sheets are, among many uncertainties, perhaps the most unpredictable and potent threat for a rapid climate change. These ice sheets can only melt so fast, as there is a limit due to the laws of physics. Although it may take a long time there are estimates of what such meltdowns would do to the sea level. Were the ice to melt, West Antarctica would raise the sea level by 8.5 meters, Greenland by 7 meters, and Eastern Antarctica would raise the sea level a whopping 65 meters.[205] However, the latter is very unlikely to happen. Scientists are confident the Eastern Antarctica ice sheet will remain intact this century, as it has shown tendencies before to stay largely unaffected even in climates warmer than this.[206] Having covered the most extreme scenario, looking at more certain predictions and at a nearer future than the abovementioned Armageddon-like outcome, climate change is happening and scientists have a fairly good idea of what could happen relatively soon. Consequences will be plenty, especially for low-lying island states.

One of the most pressing issues, and one with clear legal impacts, is the loss of territory. When this happens it will be blatantly obvious, and not up for debate any longer, i.e. final. The IPCC released a report in 2014 looking at impacts, adaption and vulnerability due to climate change. Much of those potential impacts are less direct consequences, such as food security and human health, than loss of territory. Loss of territory is, to some extent, overlapping with the surge in tropical storms, which could severely impact low-lying islands' ability to handle the sea level rise already taking place, in addition to being damaging in and of themselves. Even with a sea level rise of between 27 and 98 centimeters, which the IPCC suggest to be very likely to happen before the end of this century, coastal defenses

[204] http://worldpopulationreview.com/world-cities/
[205] Maslin (2014) p. 103.
[206] Ibid.

against tropical storms and floods become severely impaired.[207] Cliffs, rocks and beaches become instable, and huge areas of coastal wetlands will be permanently under water, thus no longer serving as an emergency sponge during floods and further increased sea level rise.[208] Long before the final submergence, recurring floods will cause intrusion of saltwater onto the islands, further adding to the dissolving of important soft defenses, in particular wetlands.[209] For specific island nations in the Pacific and the Indian Ocean a sea level rise of 1 meter is enough to make them uninhabitable, as the majority of the dry land would become permanently flooded.

The devastation for small island states cannot be understated were they to lose their EEZ because of the dry land, and by extension also the reference point for its baseline, being submerged by the rising sea. There are some different proactive defense measures to consider, both hard defenses such as building sea walls, and soft defenses like nurturing wetlands or other beneficial coastal ecosystems.[210] Building permanent structures on the original coast could also be a viable solution. Structures built with the aim of protecting against erosion and loss of land (land reclamation), effectively artificially extending the baseline, have been considered part of the coast in instances in Japan, Singapore, United Arab Emirates and The Netherlands.[211] Measures of this type could include artificial elevation of beaches, construction of sea walls or artificial floating platforms, but although they are plausible to pass the test of what constitutes a an island generating a baseline according to UNCLOS there are other arguments against extensive use of these features.[212] In order to preserve statehood, both in practical and legal terms, the current minimum standard of what is considered a state will likely have to be stretched to the furthest possible point, and this might still not be enough.[213] It still might be required to

[207] Negro (2013) p. 55 ff.
[208] Raina Lal (2017) p. 240 ff.
[209] Schofield and Freestone (2013) p. 143.
[210] Willcox (2017) p. 129.
[211] International Law Association, Final Report on Baseline (2012) p. 26–27.
[212] Torres Camprubí (2016) p. 99.
[213] Ibid. p. 98.

explore other forms of counter-measures and legal approaches to allow for the concerned states to keep its international subjectivity.[214] One idea, as explained further down, could be to indefinitely recognize the baselines as they stand today.[215] Additionally, the economic burden for the hardest hit states, predominately developing states, is astronomic. Not only is the cost disproportionate, but the financial inefficiencies for many of the SIDS countries can be traced back to exploitation and oppression in colonial periods. Publishing an official chart determining baselines would be ideal, as long as it would end all disagreements and be accepted as a legitimate record of reference.[216]

4.2 Potential Solutions and Countermeasures

4.2.1 Legal Instruments and Institutional Capacity

Climate change is certainly happening. It is believed that in roughly 30 years, all parts and populations of the Earth will be affected in one way or another.[217] Humanity has proven over and over again that it can survive the most hostile environments and unexpected changes. The collapses of certain urban civilizations are believed to have been partly due to an inability to adapt to the new circumstances. Thus, how the world can predict and acts, proactively and reactively, in response to climate change will likely determine its fate and the damage it will do.

In 2015 the United Nations General Assembly set up and agreed on seventeen global goals as part of the *Agenda 2030 for Sustainable Development*.[218] The action plan and the accompanying goals, commonly referred to as *Sustainable Development Goals* (SDG:s), span broadly across topics and benefiters, and climate change is explicitly targeted and identified as a key challenge for the future of the planet: “We are determined to protect

[214] Ibid.
[215] Ibid.
[216] Grote Stoutenburg (2013) p. 279.
[217] Maslin (2014) p. 136.
[218] United Nations resolution A/Res/70/1 (2015).

the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations".[219] The seventeen goals for sustainable development replace the eight Millennium Development Goals set in the United Nations Millennium Declaration in 2000.[220] Sustainable Development Goal 13, entitled *Climate Action*, calls for urgent action to be taken "to combat climate change and its impacts".[221] SDG 13 is reviewed in-depth every year, most recently at the High-Level Political Forum of 2019, and each year the UN publishes a brief and easily accessible update of the progress towards meeting the goals, and relevant information related to it.[222]

In terms of addressing the causes for climate change and its effects, one of the most important international treaties is the *UNFCCC*[223], which came into effect 1994. The framework is widely considered the main international instrument for these issues, and its objective is to stabilize the concentration of greenhouse gases in the atmosphere at a desirable level.[224] Under the auspices of the UNFCCC there is a variety of efforts and mechanisms, from the *IPCC*[225] to the Green Climate Fund.

The latest accounts on the progress with SDG 13 paint a worrying picture.[226] Climate change due to rising greenhouse gas emissions appear to be occurring faster than previously anticipated. Although there are some examples of positive actions, mainly at national levels, the situation calls for improved ambitions and immediate actions.[227] Financing the adaption of action plans for sustainable development and to combat climate change is a major challenge, especially for developing states, which in addition are also often among those hit hardest by natural disasters and climate change-

[219] Ibid. p. 2.
[220] https://sustainabledevelopment.un.org/?menu=1300
[221] https://sustainabledevelopment.un.org/sdg13
[222] High-level political forum on sustainable development, held in New York in July 2019, convened under the auspices of the Economic and Social Council (ECOSOC).
[223] The United Nations Framework Convention on Climate Change
[224] Bialek and Ariel (2013) p. 484 f.
[225] *Intergovernmental Panel on Climate Change.*
[226] https://sustainabledevelopment.un.org/sdg13
[227] Report of the Secretary General on the progress towards the Sustainable Development Goals (2019) p. 18 f.

induced sea level rise. One positive note is that global climate finance flows in the period 2015–2016 increased by 17 per cent compared to the previous two-year period.[228] *The Green Climate Fund* is also proving successful, albeit rather slowly. The fund was set up following the COP16 meetings in 2010 and as of May 2019 there were 28 countries, predominately small island developing states, having accessed various Green Climate Fund grants.[229] The Green Climate Fund is a financial mechanism under the UNFCCC supporting various projects and other initiatives in developing countries.[230] Despite the various actions currently being taken, nationally and globally, greenhouse gas concentrations continue to reach new highs, and there is little disagreement among experts that greenhouse gas emissions are driving climate change.[231]

Combating climate change is inevitably an international question that spans across national borders and affects everyone to some extent. The United Nations is undisputedly an obvious forum of choice, where all sovereign nations can discuss, negotiate and subsequently agree on how to cooperate in order to tackle climate change, and its consequences, including rising sea levels. It goes without saying that much of the work taking place, from drafting and in the end ratifying treaties to creating and implementing actions plans, falls within the scope of the UN, and this is happening simultaneously within the numerous intergovernmental bodies under the UN umbrella, none more important than the IPCC for this particular matter.

Much of the underlying numbers that lay the foundation for this work is compiled by the IPCC, which has had a significant influence on many of the negotiations in relation to the UNFCCC.[232] The organization has even been awarded the Nobel Peace Prize, in 2007.[233] The IPCC was founded in 1988, in part to examine the possibility of global warming and the effects it might have. It was a joint effort by the *UNEP*[234] and the *WMO*[235] and has

[228] Ibid.
[229] Ibid.
[230] https://unfccc.int/process/bodies/funds-and-financial-entities/green-climate-fund
[231] Report of the Secretary General on the progress towards the Sustainable Development Goals (2019) p. 18 f.
[232] Maslin (2014) p. 10.
[233] https://www.nobelpeaceprize.org/Prize-winners/Winners/2007.
[234] United Nations Environmental Panel.

since evolved into what is today the IPCC. The IPCC does not conduct the actual scientific research itself, but look at the raw data available and assess all available and relevant information in order to interpret said data and information, as well as build prognoses based on them. It has been covered above that the IPCC produce assessment reports using advanced climate simulations to model future climate, and they are currently in their sixth assessment cycle. The IPCC is divided into three working groups, and together they cover positive and negative impacts of climate change both naturally occurring and anthropologically induced.[236] The IPCC also continuously produce reports evaluating risks and potential impacts in order to mitigate or prevent any negative consequences due to climate change.[237] One of the most recent reports from the IPCC is the comprehensive *Special Report on Global Warming of 1.5°C* from October 2018.[238] Two other significant reports, following the report on Global Warming of 1.5°C, are the *Special Report on Climate Change and Land* and the *Special Report on the Ocean and Cryosphere in a Changing Climate*, both from 2019.

The UNFCCC came into force in 1994, and is acceded by 197 states as of 2019 (including all UN member states). This practically universal adoption gives it high legitimacy and it has been instrumental for combating climate change thus far. The framework, intended as a non-binding foundation on how to multilaterally cooperate and negotiate treaties and agreements to combat climate change and greenhouse gas emissions, established the yearly *COP*-meetings[239] where all parties to the UNFCCC meet.[240] This has proven to be fundamental in dealing with these issues, including getting from the Kyoto Protocol to the Paris Agreement, which despite its flaws and weaknesses is the most ambitious treaty addressing climate change so far. One of UNFCCC's strengths, and a reason it is so

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[235] World Meteorological Organization.
[236] Maslin (2014) p. 10.
[237] Principles Governing IPCC Work (1998).
[238] Global Warming of 1.5°C: an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.
[239] Conference of the Parties.
[240] https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change.

universally endorsed, is that it recognizes differences between states and at the same time places a heavier burden and a higher expectation on developed nations to lead.[241] Subsequently, the framework divides states into different categories depending on their degree and pace of development, with the end goal being global equality in terms of greenhouse gas emissions per capita.[242] This has led to the discussions of trading emission rights, as covered further down.

Already in 1972 an international conference focusing on anthropogenic impacts on the environment was held, in Sweden.[243] It led to the *Stockholm Declaration* and the adoption of *Principle 21*, which codified and further entrenched the *no-harm principle*, which includes a prohibition to cause injury to a fellow state through emission or pollution.[244] The no-harm principle has later been affirmed as a rule of customary international law in an advisory opinion by the International Court of Justice (ICJ).[245] Principle 21 closely resembles Principle 2 of the 1992 Rio Declaration.[246] Fast-forward a decade and the field of international environmental law is starting to see some promising developments, beginning with the *Kyoto Protocol*.

The Kyoto Protocol was negotiated at COP3 in Kyoto, Japan, and entered into force in 2005.[247] Although the biggest polluter, and at that time by a large margin, the United States never signed the agreement and withdrew from the discussions in 2001, the Kyoto protocol in hindsight must be viewed as a foundational piece in the work to combat climate change. It was signed by over 190 states and included binding targets for emissions of greenhouse gases for 38 industrialized states.[248] Developing states were excluded from targets at this point, and there was also a fund set

[241] UNFCCC, art. 3 (1) and art. 4 (7).
[242] https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change.
[243] United Nations Conference on the Human Environment in Stockholm, Sweden, June 5 to 16, 1972.
[244] Robert et al (2013) p. 591 f.
[245] Adelman (2016) p. 40 f.
[246] Robert et al (2013) p. 593.
[247] Kyoto Protocol to the United Nations Framework Convention on Climate Change (1998).
[248] Haibach and Schneider (2013) p. 360 f.

up for developed states to help developing states adapt to climate change and green technology.[249]

With the Kyoto Protocol set to expire at the end of 2012, there was a sense of urgency ahead of COP15 in Copenhagen 2009, where a follow-up agreement was expected to take shape. However, the COP15 meetings were widely considered a huge disappointment, and it was not until COP18 in Doha, Qatar that negotiations of a replacement agreement to the Kyoto Protocol began making serious progress.[250] The outcome document of COP15, the *Copenhagen Accord*, did recognize the need to keep global warming below 2 °C but did not elaborate on how to achieve this. These ambitions, however, carried over and eventually made it into a new agreement. In 2015, at the COP21 meetings in Paris, this new agreement was at last finalized. The *Paris Agreement*[251] was adopted by consensus on 12 December 2015 and of the 197 UNFCCC parties, 187 have ratified the convention (although the United States announced its intention to withdraw from the agreement just a year later).[252] The agreement entered into force on 4 November 2016 as the threshold of at least 55 parties to the convention signing it, as well as those 55 parties accounting for a minimum of 55 per cent of the estimated total global greenhouse gas emissions, had been met.[253] The Paris Agreement is the most ambitious effort to date to combat climate change and global warming, adapt to its effects, and cooperate multilaterally in those efforts. The main focus of the agreement is to keep global warming below 2 °C above pre-industrial temperatures, but with an additional target to keep it even below 1.5 °C, as reports suggest this would reduce the risks and impacts of climate change dramatically.[254] The aim, globally, is to "achieve a balance between anthropogenic emissions by

[249] Maslin (2014) p. 117.
[250] Maslin (2014), p. 123 ff.
[251] Paris Agreement to the United Nations Framework Convention on Climate Change (2015).
[252] Signatories and parties are *as of* December 2019. https://unfccc.int/process/the-paris-agreement/status-of-ratification
[253] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
[254] Paris Agreement, art. 2.

sources and removals by sinks of greenhouse gases in the second half of this century".[255]

The agreement recognizes that reaching these goals will take longer for developing countries, and that these countries may require assistance to achieve them.[256] The agreement is asking for each state's highest possible ambition in combating climate change, while "reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances".[257] Developed countries are expected to lead by "undertaking economy-wide absolute emission reduction targets".[258] The special circumstances for small island states like the abovementioned Kiribati, Tuvalu, Maldives and Marshall Islands are explicitly recognized in the agreement.[259] The agreement also acknowledges the need for mechanisms dealing with loss and damage due to, for example, extreme weather events and sea level rise for affected states.[260]

One of the key aspects of the agreement is the creation of *Nationally Determined Contributions* (NDCs).[261] This requires states to prepare, outline and communicate their climate actions post-2020, i.e. their NDCs, and continue to maintain successive NDCs of what they intend to achieve.[262] By default, the impact of this so-called *principle of progression* in the end is entirely dependent on the good faith of the respective states in question, and it is questionable whether emission targets could be considered as duties if they are self-assigned.[263] In addition to keeping global warming to within 2 °C above pre-industrial temperatures and have greenhouse gas emissions globally peak as soon as possible, the agreement also encompasses adapting to the inevitable climate changes.[264] One way of adapting would be to mitigate the effects of said climate change. The Paris

[255] Paris Agreement, art. 4.1.
[256] Ibid. art. 4.1 and 4.5
[257] Ibid. art. 4.3.
[258] Ibid. art. 4.4.
[259] Ibid. art. 4.6.
[260] Ibid. art. 8.
[261] https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs.
[262] Paris Agreement, art. 4.2.
[263] Bou-Habib (2019) p. 1307.
[264] Paris Agreement, art. 7.

Agreement is not the final solution, but it is a significant step forward in the sense that there is verbatim language, agreed upon by consensus and (almost) universally endorsed, on how to move forward in the collective and individual multilateral work to combat climate change and global warming.

The Special Report on Global Warming of 1.5°C was conducted by request after governments agreed to invite the IPCC to prepare a special report following the meetings in Paris 2015 and the aforementioned Paris Agreement.[265] The IPCC accepted the invitation in April 2016.[266] There are three main themes of the report.[267] The first one focuses on mitigation pathways and how to limit global warming to 1.5 °C. Transitions in energy and land use is considered key aspects in this regard.[268] The second theme assesses the impacts of 1.5 °C and compares that to an increase of 2 °C and higher. The report states that future climate-related risks are larger "if global warming exceeds 1.5°C before returning to that level by 2100 than if global warming gradually stabilizes at 1.5°C" and that "some impacts may be long-lasting or irreversible, such as the loss of some ecosystems".[269] The report thoroughly examines the expected sea level rise in various scenarios and subsequent consequences respectively.[270] For low-lying island states "a slower rate of sea level rise at global warming of 1.5°C would reduce risks associated with it and offer greater opportunities to adapt, manage and restore natural coastal ecosystems and infrastructure reinforcement".[271] The third theme looks at reactions, mitigation and adaption to climate change and recognizes that this is already taking place. The report determines that although the anthropogenic emissions so far, from the pre-industrial period to the present, will already cause long term climate change and persist well into the future, they are unlikely to cause a global warming of as much as

[265] Understanding the IPCC Special Report on 1.5° C (2018) p. 2.
[266] Official report summary of the *Special Report on Global Warming of 1.5°C*, (2018), p. 4.
[267] Understanding the IPCC Special Report on 1.5° C (2018) p. 2.
[268] Official report summary of the *Special Report on Global Warming of 1.5°C*, (2018), p. 15 ff.
[269] Ibid. p. 5.
[270] Ibid. p. 7 ff.
[271] Ibid. p. 8.

1.5 °C.[272] There are, however, no sign of the anthropogenic emissions ceasing anytime soon, hence the concern is still justified.

Scientists feel that 2 °C is a tipping point where most of the world will suffer immensely. However, this already appears to be a very optimistic goal, since that check-point is fast approaching. There are estimations of global warming hitting 2 °C in 25 years already.[273]

The Special Report on Climate Change and Land thoroughly examines people, land and climate in a warming world and looks at possible near-term actions and options to respond. Land provides the principal basis for human livelihoods and plays an important role in the climate system.[274] Small islands with an already limited area of dry land face higher risks under all projected scenarios.[275] The report focuses more on land-use, desertification, land degradation and food security than on sea level rise-related issues, but they are all intrinsically connected and intertwined, which is part of what makes climate change, both in terms of response and forecast, so difficult.

The Special Report on the Ocean and Cryosphere in a Changing Climate, as the name suggests, focuses more on the ocean. It covers a vast range of aspects, from sea level rise, acidification and marine wildlife to fresh water supply, melting ice sheets and glaciers, and hydrological changes in general. The reduction and melting in snow cover, permafrost, sea ice extent and thickness that are taking place across the globe is a direct consequence of the cryosphere shrinking due to global warming.[276] Since 1970 global oceans have absorbed more than 90 per cent of the excess heat in the climate system, leading to increased surface acidification and marine heat waves.[277] Global sea levels are rising and extreme sea level weather events, such as extreme waves, rainfall and tropical cyclone winds, are

[272] Ibid. p. 5.
[273] Maslin (2014) p. 114.
[274] Official report summary of *Special Report on Climate Change and Land* (2019) p. 5.
[275] Ibid. p 15.
[276] Official report summary of *Special Report on the Ocean and Cryosphere in a Changing Climate* (2019) p. 6.
[277] Ibid. p. 9.

projected to occur much more frequently than they historically have done.[278] Human communities in low-lying coastal areas, such as many of the SIDS countries, are facing the highest risks, due to "increased mean and extreme sea level, alongside ocean warming and acidification".[279] Transformative governance and ambitious adaptation is needed to reduce these risks.[280] People with the highest exposure and vulnerability are often those with the lowest capacity to respond, and current SIDS governments are challenged to develop and implement adaptation responses, which in some cases will be pushing them to their limits.[281]

Cutting greenhouse gas emissions seems like the most reasonable and concrete action to take, but for it to happen soon enough and to be universally implemented it will certainly need to be regulated through an international treaty and an accompanying enforcement mechanism.

The last decade the SIDS countries have been successful on establishing the link between climate change and international security.[282] This discourse can be traced back to the days of the Cold War, but have re-emerged lately.[283] This topic was examined in the UN Security Council already in 2007.[284] Relentless lobbying within the UN lead to the UN General Assembly addressing the issue in 2009 in a series of resolutions that eventually lead to the report *Climate Change and its Possible Security Implications: Report of the Secretary-General*.[285] An open debate on the matter in the Security Council was held in July 2011 and in 2018 another debate was held.[286] The debate in 2018 focused on the nexus between climate change and conflicts around the globe and was arranged by Sweden during its presidency in the Security Council as a non-permanent member of the council.[287] Swedish Minister for Foreign Affairs, Margot Wallström, led

[278] Ibid. p. 20.
[279] Ibid. p. 27.
[280] Ibid.
[281] Ibid. p. 29.
[282] Torres Camprubí (2016) p. 234.
[283] Ibid.
[284] https://news.un.org/en/story/2019/01/1031322
[285] A/64/150 - 11 September 2009.
[286] https://news.un.org/en/story/2019/01/1031322
[287] https://www.government.se/government-policy/sweden-in-the-un-security-council/10-points-on-swedens-membership-of-the-un-security-council-20172018/

the debate and stated that "the threat that a changing climate presents to our societies and to international peace and security cannot be underestimated […] and to prevent the conflicts of tomorrow, we too can no longer afford to ignore this threat".[288] Many leaders of the SIDS countries had a chance to speak at the debate, and UN Deputy Secretary-General, Amina Mohammed, expressed that "climate change is a real threat and is proceeding at a relentless pace".[289] The climate change and international security discourse and its advancement within the UN system is helpful in many ways. It makes it official, on record, that the fight against climate change-induced sea level rise and the short-term and long-term potential effects from it, on SIDS countries in particular, have been brought to attention, at the highest level, far in advance.[290]

4.2.2 Adaption, Mitigation and Preventive Measures

International law will play a key part in facilitating the adjustments needed to deal with climate change and global warming, but it will most certainly have to be accompanied by some rather non-legal forms of measures. The IPCC puts great emphasis on the need to adapt to climate change, in addition to mitigate it or try to stop it entirely. The biggest threat of climate change is the unpredictability of it.[291] If we knew when and how things were to change we could adapt in time, but adaption takes time, sometimes decades, and precautionary adaption is more effective than emergency adaption. There are of course limits to adaption as well, with sea level rise for low-lying islands possibly proving to be an example of that, depending on how much the sea rises and how fast it does so. Financial limitation is also a real factor, because the work will not get done automatically, and someone will have to pay for it.

The obvious non-legal measure is renewable, so-called *green*, energy. To enable the continued high standard of living of today, and to increasingly

[288] https://www.government.se/statements/2018/07/statement-by-minister-for-foreign-affairs-margot-wallstrom-at-the-unsc-debate-on-climate-related-security-risks/
[289] https://www.un.org/press/en/2018/sc13417.doc.htm
[290] Torres Camprubí (2016) p. 244.
[291] Maslin (2014) p. 137 f.

encompass populations in developing nations, relying on cheap fossil fuel will not work.[292] Nuclear energy, from nuclear fission, is a climate-friendly form of energy in terms of greenhouse gas emissions.[293] The downsides, however, are that it produces radioactive waste that has to be deposited for thousands of years somewhere, along with the risk of nuclear disasters at power plants such as in Chernobyl in 1987 or in Fukushima more recently in 2011.[294] Futile attempts have been made with nuclear *fusion*, as opposed to *fission*, but so far these experiments have required more energy than it has produced, hence generating a net loss of energy, and it will likely require a lot of costly research to ever make it viable.[295]

The concept of wind energy is not new, and has developed from wind mills to large parks of wind turbines.[296] One of its benefits is that it is highly effective at sea, which means it can be used without allocating dry land for it. The downside is that it only provides energy when there is a strong enough wind.

Although yet at a much earlier stage of its development, a good option for constant flow of energy at locations near, or in, the sea could be tidal energy or wave energy.[297] Hydroenergy is also an alternative source of energy and it is used in many parts of the world, commonly in large dam projects such as the *Three Gorges Dam* in China or the *Itaipu Dam* on the border of Paraguay and Brazil.[298] Its energy is green in the sense that it is renewable, but its environmental friendliness, however, has been disputed.[299] Politics can become an issue with bigger dam projects using rivers that flow across international borders if available freshwater decreases. Another problem with dam projects, especially smaller and lesser maintained ones, is the risk of flooding, or the dam wall collapsing.

Another potential energy source is the heat from deep down within the Earth itself. Some countries with a lot of thermal activity, such as

[292] Berners-Lee and Clark (2013) p. 206 f.
[293] Ibid.
[294] Ciplet et al (2015) p. 222.
[295] Heinberg and Fridley (2016) p. 3 and p. 134.
[296] Archer (2012) p. 185 f.
[297] Maslin (2014) p. 147.
[298] Ibid.
[299] Morana et al (2018).

Iceland, already use this as a source for most of its energy, pumping hot water straight up from the ground.[300] Scientist believe that everyone could make use of the heat below by simply drilling deep enough boreholes and let cold water be pumped down, get heated up and then pumped back up, creating almost free hot water and heat.[301]

Solar energy is establishing itself, around the globe, an energy source of the future.[302] It is increasingly popular, everywhere from rooftops in modern cities to rural areas, in both developed and developing countries, regardless of climate. Solar energy can be converted into biofuel, which is another alternative source of energy gaining traction. From the plantations solar energy is harnessed in the plants and then transformed into liquid biofuel, and this is already being used in some places, especially in the transport sector.[303]

Environmentally neutral energy sources could prove to be a huge piece to the climate change puzzle, but as long as there are carbon emissions, emitted in the past or the present, these will have to be dealt with. Similarly to how nuclear waste from nuclear plants can be stored and contained, there is currently research examining how to achieve something similar for carbon dioxide, mainly within the emitting processes at the industries themselves, but also for collection and removal of already emitted carbon dioxide. The methods up to this point have proven incredibly expensive, and in addition to that there are also safety concerns regarding the storage itself.[304]

Suffice to say, not much of the above matters unless there is political will. The biggest challenge that climate change poses is perhaps that of our current economic and societal system. Irrespective of whether you call it a neoliberal system, capitalist system, or something else, it is clear to many social scientists that the global market will not fix this on its own, and that fundamental changes will be necessary. Scientifically, there is no doubt that climate change is happening, hence accepting climate change as real is

[300] Maslin (2002) p. 69.
[301] Heinberg and Fridley (2016) p. 47 ff.
[302] Ciplet et al (2015) p. 225 f.
[303] Heinberg and Fridley (2016) p. 85 ff.
[304] Maslin (2014) p. 149 f.

nothing more than a political question for politicians and economists.[305] Thus, the solution to climate change must be international and political, involving legally binding treaties. The Paris Agreement is a good start, but further instruments are needed. It is also imperative that everybody is on board and it is extraneous if the last non-compliant states are persuaded with sanctions or other available methods to put pressure on them. Since all economic development currently is based, indirectly, on globally increased use of energy, renewable energy must be one of the pillars of any action plan, and it must be made available to everyone, not just the countries that can afford it.[306] Although a final and sustainable solution to climate change may have to be political, in the meantime adaption and mitigation must continue until that has happened.[307]

The discussions on trading of carbon greenhouse gas emissions emerged axiomatically after the Kyoto Protocol opened up to setting individual emission limits on countries. Some countries might demand more emission credits than others, relative to its allocated limit, and in a global market economy that means trading of such emission rights likely inevitable. With renewable energy there may even be countries that can show a net negative carbon economy by exporting surplus energy. Additionally, some industries will most likely have an easier time cleaning up and adapting to emission limits than others, making a trade scheme not just multilateral between states but also global and regional between private entities and industries.[308] Some similar systems already exist and have proved highly effective. The United States successfully used emission trading schemes to reduce emissions contributing to acid rain.[309]

Setting a price on carbon could prove complicated, for a myriad of reasons. As with most trade schemes, irrespective of the commodity subject to trading, the point of departure is to let the market set the price. With carbon, no one necessarily wants the carbon as such, but it is rather an indirect necessity for producing goods and services that are manufactured or

[305] Maslin (2014) p. 171.
[306] Heinberg and Fridley (2016) p. 145 ff and p. 159.
[307] Maslin (2014) p. 178.
[308] Maslin (2014) p. 129 f.
[309] Condon and Sinha (2013) p. 177 ff.

provided for.[310] Thus, the price effect on the end product will vary greatly between products. One problem with this, as the objective of a carbon trading scheme is to reduce carbon emissions, is that products in high-demand which currently also have large margins of profit will still be profitable after the implementation of the trading scheme, and will therefore most likely continue to be produced in the same scale as before.[311]

The EU already has a system for emission trading in place, the *European Union Emissions Trading Scheme* (ETS).[312] The ETS is currently in its third period of trading.[313] The major challenge for a trading scheme involving the entire world is to avoid it being a new form of colonialism that puts developing states at a disadvantage.[314] It is generally much cheaper to cut emissions in developed countries than in developing ones. Binding targets, through international law as well as national legislation, is probably required in order to meet the ambitious but highly necessary goals in order to keep climate change at a desirable level. The ability to trade emission rights might make it easier to implement caps on emission that ensure these targets are met. Carbon tax might be an alternative to trading rights to emit carbon, but despite its many advantages, the latter is far ahead in its development.[315]

As covered above, some preventive defense measures to consider could be enhancing and developing wetlands, serving as an emergency sponge during flooding and further sea level rise, or to build hard structures like sea walls.[316] One already existing example of a so-called hard defensive feature is found in Malé, the capital of the Maldives, which is surrounded by "The Great Wall of Malé", an almost two meter tall sea wall of concrete, constructed to mitigate flooding.[317] But building permanent sea walls is highly expensive, and the sea walls can potentially cause erosion

[310] Helm (2012) p. 179.
[311] Ibid.
[312] Helm (2012) p. 182 f.
[313] Maslin (2014) p. 129 f.
[314] Ibid.
[315] Helm (2012) p. 180
[316] Willcox (2017) p. 129.
[317] Gagain (2012) p. 84.

themselves.[318] An example of a soft defensive structure is elevating the island artificially with material from the ocean floor or from other islands.[319]

The de-territorialisation model, including the Holy See and the Order of Malta, has allowed de-territorialized states to keep their legal subjectivity.[320] As already mentioned, the Order of Malta still maintains a government and enjoys recognition from a substantive part of the international community.[321] However, this de-territorialized example might not be a viable solution at present day and age, particularly not for the SIDS countries.[322] Without citizens, after generations of residing abroad, a de-territorialized state would likely become irrelevant as a juridical entity.[323]

Among the proposals in response to climate change-induced sea level rise that have been covered are Kiribati's plans to relocate its citizens to externally purchased land. Other measures that have been discussed are defensive mechanisms, both soft and hard. Legally, there is the possibility of invoking the fact that the territory criteria in the Montevideo Convention does not specify the size required for a piece of land to be defined as territory. Another possibility is to make an analogy to the Order of Malta, as an example of how to formally retain statehood despite having lost all physical territory. Notwithstanding all of the above, if all else fail when push comes to shove, there are a couple of very creative suggestions to ensure retained statehood for small island states.

The proposal to retain statehood through the creation of an alternative form of statehood, the international legal subject of *Ex-Situ Nationhood*, is suggested to allow for continued sovereignty in perpetuity for the state and its citizens, regardless of geographic location.[324] The adaption of this idea and its incorporation in international law would be a tremendous challenge and a monstrous task in practice, but at least in theory there is no harm in discussing it. Other suggestions in response to climate change-induced loss

[318] Raina Lal (2017) p. 253.
[319] Grote Stoutenburg (2013) p. 62.
[320] Raina Lal (2017) p. 260.
[321] Gagain (2102) p. 92 f.
[322] Torres Camprubí (2016) p. 113.
[323] Jain (2014) p. 52.
[324] Burkett (2013) p. 89 ff.

of territory due to sea level rise are cessation or merger with another state, as opposed to simply acquiring land from another state.[325] It is presupposed that this would have to be done in accordance with international law and through binding international agreements between all affected parties.

The jus cogens-based argument for retained statehood is also interesting. It has been proposed that de-recognition of island states because of their climate change-related realities might constitute a breach of *jus cogens*, thus making the de-recognition illegal according to international law.[326] Such a claim could be made not least in combination with human rights law, as human rights are universal and certain human rights are non-derogable, and therefore stripping a state of its statehood would deny the citizens of that state many of their most essential human rights. This would also provide an excellent opportunity to decimate the current dichotomy in international law between the environmental and climate-focused legal field and its human rights equivalent.[327] However, a serious breach of peremptory norms would have to be proven for a duty to continue to recognize affected island states to exist.[328] Only if an internationally wrongful act can be proven would a state assume responsibility.[329] Given that a causal link between greenhouse gases and the submergence of island states could successfully be made, the subsequent argument would take aim at states' failure to regulate greenhouse gas emissions, i.e. arguing that the omission to effectively combat greenhouse gases has deprived island states of their territory.[330]

One approach mentioned is to simply freeze the baselines, recognizing them as they stand today.[331] This would require an internationally binding treaty, and above all the affected neighboring states to honor the delimitations that those baselines would determine. There is a moral argument to be made that the international community has an

[325] Crawford and Rayfuse (2012) p. 249.
[326] Grote Stoutenburg (2013) p. 79 f.
[327] Venn (2017) p. 345 ff.
[328] Grote Stoutenburg (2013) p. 79.
[329] Bialek and Ariel (2013) p. 510 f.
[330] Grote Stoutenburg (2013) p. 80.
[331] Torres Camprubí (2016) p. 100 f.

obligation to accept such a solution, with respect to the fact that these tiny islands, hit hardest by the rising sea levels, are only behind a microscopic part of the anthropogenic greenhouse gas emissions. These emissions have been proven to be a major driving force for the clime change causing the sea level rise, and small islands states account for nothing but the tiniest fraction of them, industrially and non-industrially emissions altogether. The fact that these states at the same time are developing states, lacking the financial strength to deal with the effects of climate change alone, adds even further weight to this argument. In addition to binding treaties, protecting the current delimitations of island states through international law might require altering some, or creating new, rules of international customary law.[332]

Predictions on climate change are grim, but at the same time they differ considerably depending on who you ask. Without the luxury of hindsight, those predictions must shape the foundation for current and future efforts. Until it is replaced or renegotiated, the world will have to make due with the Paris Agreement. Humanity has proven before that it can adapt to the most extreme conditions, and with appropriate forward thinking, multilateral cooperation and adequate mitigating measures, the combat on global warming may turn out successful. For SIDS countries in general and those low-lying islands most vulnerable to sea level rise in particular, time is running fast. They are dependent on the rest of the international community in their fight for survival, for retained statehood and future recognition as states, irrespective of the path they choose for their battle.

[332] Soons (1990) p. 231.

5 Conclusion and Analysis

5.1 Analysis

Climate change is happening, and it is without a doubt one of the most pressing issues facing humanity and planet Earth at the moment. It raises critical questions in several disciplines, and international law has an imperative role to play, not least due to the communal and global nature of the issues at hand. At the base of the discussion is the thorough and convincing scientific research on climate change, with greenhouse gases and the greenhouse effect at its core.

Climate change drives global warming. Land and oceans absorb energy from the sun and release heat back into the atmosphere. This heat is absorbed by greenhouse gases, most notably carbon dioxide, thus warming the globe. Hence, the concentration of greenhouse gases in the atmosphere is directly linked to the average temperature of the air and the oceans, and by extension to the rising sea levels. Anthropogenic greenhouse gas emissions can therefore confidently be said to be behind a significant part of climate change. Since the industrial revolution, fossil fuels which have been stored naturally on Earth for millions of years, are being burnt at an ever-accelerating pace. This means literally burning fossilized sunlight, increasing the concentration of greenhouse gases in the atmosphere at an alarming rate.

Through various methods, scientists have been able to learn extensively about our past climate, and in combination with current data, this has facilitated considerably more accurate estimations of present trends and future climate. Compilations by the *Intergovernmental Panel on Climate Change* show that sea levels rose by 17 to 21 centimeter between 1901 and 2001, and by average around 3.2 millimeters per year from 1971 to 2010. Reports suggests that the average global temperature could rise by as much as 4.1 °C by year 2100, accompanied by an average sea level rise of around 1 meter over the same period, thus placing large areas of what is

today considered low-lying dry land under water. This should be compared with the 0.85 °C temperature rise of the last 140 years.

Small Island Developing States (SIDS), predominately but not exclusively from the Pacific Ocean and the Caribbean, are among the most vulnerable states in the world. The island groups of Kiribati, Tuvalu, The Maldives, and The Marshall Islands each have their average altitudes just meters above sea level. Their common denominator is that their very existence is threatened by the impacts of climate change, and by virtue of that, this group of countries challenge the current view on the law on statehood. This makes them key players in the combat on climate change in general and sea level rise in particular. *SIDS* is a multilateral organization for cooperation, and in the outcome document of its third conference, the *SAMOA Pathway* from 2014, they jointly sounded a clamorous alarm and voiced their concerns for the ongoing climate change.

Statehood is defined as the condition of being a state, whereas state recognition encompasses becoming a state in the view of others. Being a state, however, is not as straightforward as one might think. Statehood, according to international law, is derived from the Montevideo Convention. This convention stipulates four criteria that has to be met: "(a) a permanent population, (b) a defined territory, (c) government, and (d) capacity to enter into relations with the other states". It is an ongoing debate what role state recognition has in terms of statehood, but statehood does not automatically guarantee recognition as a state by other states. Additionally, the convention explicitly states that the existence of a state is independent of recognition by other states. The Montevideo Convention codified the idea of statehood according to customary international law at the time of its conclusion, in 1933. However, the criteria should not be confused with elements. The convention's definition of statehood should be interpreted as a declaratory matter of fact rather than of law, therefore serving to prove the existence of the state rather than constituting it.

Of particular interest is the territorial criteria. It is unprecedented for a recognized state to lose its entire territory, but for the abovementioned small island states, that is no longer an unthinkable scenario. The criteria for

becoming a state only defines what is needed to attain statehood, thus it can be argued that no longer fulfilling the criteria would not automatically mean loss of statehood. Moreover, the criteria for statehood are often applied more strictly at the formation of a state than in regards to its continuity. The *declarative theory* of statehood, as opposed to the *constitutive*, is the theory of statehood codified in the Montevideo Convention, i.e. statehood based on a preset of conditions rather than on the recognition from other states. *Independence*, per se, is not mentioned in the convention, but is in practice a precondition for fulfilling the fourth criteria of statehood, "capacity to enter into relations with other states".

In addition to the direct problem of statehood, an indirect consequence from loss of territory is the loss of adjoining maritime areas, or territory at sea. A state's territory at sea is governed by *UNCLOS*, an extensive set of treaties. Small island developing states often have disproportionately large territories at sea compared to the size of their dry land, because of how these maritime areas are delimitated according to UNCLOS. The most important area to define for many of the small island developing states is the *Exclusive Economic Zone*, which gives the state exclusive rights of exploitation in this zone. When islands are subjected to de-territorialisation, totally or partially, the basis for delimitating the maritime areas subsequently changes, and the state risks losing large maritime areas which their societies depend on. UNCLOS also affects the requirement for a defined territory in the Montevideo Convention, as it defines what constitutes an island. The Montevideo Convention does not specify any minimum threshold in terms of physical area for a piece of land to be considered territory, but according to UNCLOS an uninhabitable island might be considered a rock, thus disqualifying it as land in the first place.

There are different opinions on how loss of statehood would and should affect the state at hand. Some suggest that a complete submergence of a state would lead to the claim of statehood to fail, while others instead point to the fact that international law concerning these specific situations is unclear. One view is that material loss for the subject should not lead to loss

of the legal personality, as states are non-physical juridical entities and consequently their extinction should not be based on physical elements alone. These contradicting views on whether statehood would be lost or retained at the very least indicate that the question is open for debate and not yet decided.

The concept of a failed state appear to be more political than legal, but a political solution in favor of avoiding a state's failure may very well be based on a legal argument. Practical effectiveness on the one hand, and legality one the other, can be two conflicting principles. The former focuses on the factual situation while the latter is more concerned with not violating any *peremptory norms*, or *jus cogens*. Modern international law acknowledges, to a greater extent, that effectiveness as an ambition could be in conflict with fundamental principles of international law, but there is a moral argument to be made for small island nations' continuity as states. The reasoning behind this is that the states at risk of being consumed by the sea are not by any means responsible for the climate change causing the sea level rise. The anthropogenic contribution to climate change has predominately been made by developed countries in the West, and these states do not only have the political power, but perhaps even a moral duty, to argue in favor of small island developing states' retained statehood.

The jus cogens-based argument for retained statehood is also interesting. Jus cogens, also referred to as *peremptory norms*, are fundamental and non-derogable principles of international law. It has been proposed that de-recognition of island states because of their climate change-related realities could be a breach of *jus cogens*, thus making the de-recognition illegal according to international law. Such a claim may also be made in combination with human rights law, as stripping a state of its statehood would deny the citizens of that state many of their most essential and non-derogable human rights. This requires that a nexus between an alleged breach, e.g. omission to effectively regulate greenhouse gas emissions by a state, and the consequences of it can be established.

The obvious way of ensuring continued existence for small island developing states is to successfully combat climate change in the first place,

but for a myriad of reasons this seems highly unlikely, if not completely impossible, at this point. Important legal instruments at hand for doing so would be the *Paris Agreement.* The main focus of the agreement is to keep global warming within less than 2 °C above pre-industrial temperatures, and the agreement recognizes that reaching these goals will take longer for developing countries. The Paris Agreement is not the final solution, but it is a significant step forward in the sense that it is an international treaty with legally binding targets. There is verbatim language, (almost) universally endorsed, on how to move forward in the collective and individual multilateral work to combat climate change and global warming and until it is replaced or renegotiated, the world will have to make due with the Paris Agreement. The United Nations *Agenda 2030 for Sustainable Development* and its accompanying *Sustainable Development Goals*, as well as the *United Nations Framework Convention on Climate Change* are other important instruments. The explicit aim of the framework is to stabilize the concentration of greenhouse gases in the atmosphere at a desirable level.

Other suggestions mentioned in the thesis, both legal and non-legal, include artificial islands, carbon tax or a carbon trading scheme, defensive sea mechanisms such as sea walls, wetlands or elevation of beaches, and a switch to alternative energy, to name a few. Nuclear plants, hydroenergy, wind turbines and solar panels all have their pros and cons, but they are all environmentally superior to burning fossil fuels at the current rate. Relocation and purchase of land is another option, and Kiribati has already purchased land for this purpose on an island of Fiji. The creation of new legal subjects in international law as an alternative form of statehood is another suggestion. It would allow for continued sovereignty in perpetuity for the state and its citizens, but although plausible in theory, its implementation in practice seems unlikely. Freezing the baselines and recognizing them as they stand today through an internationally binding treaty is another approach.

Humanity has proven time and again that it can survive the most hostile environments and unexpected changes. The biggest threat of climate change is the unpredictability of it, and the IPCC puts great emphasis on the

need to adapt to climate change in addition to mitigate it or try to stop it entirely. Thus, it will be paramount to accurately forecast the forthcoming changes.

An interesting analogy can be made from the de-territorialised, but still recognized, state of the *Order of Malta*. It maintains a government and continues to enjoy many sovereign privileges despite the fact it has had no physical territory since it lost sovereignty over the Maltese in 1798. At the very least, this shows that there is some room for flexibility regarding statehood in relation to the precondition of a defined territory. However, this kind of special treatment depend on strong historical and political arguments and it is impossible to say how the international community would react if a state were to invoke this case today. Furthermore, even if the argument is successful, the long-term prospects of a submerged state in its de-territorialised form might still not be viable. It might struggle to stay relevant due to the lack of citizens, thus becoming irrelevant as a juridical entity.

The last decade the SIDS countries have managed to further establish the link between climate change and international security, successfully getting it up on the agenda in both the United Nations General Assembly and the Security Council, respectively. That makes it official, on record, that the fight against climate change-induced sea level rise and the potential short-term and long-term effects from it, on SIDS countries in particular, have been brought to attention, at the highest level, in advance.

5.2 Conclusion

This thesis has asked the question of whether or not low-lying small island developing states will lose their statehood if they are completely submerged by the ongoing, climate change-induced, sea level rise. This has been done by exploring how and why the climate is changing, and in what way this affects statehood and state recognition for states in general and for small island developing states in particular. Essential to this thesis has been to examine how statehood can be attained, and more importantly, retained. Statehood is derived from the Montevideo Convention, in which the concept

of statehood is codified. Innately, examining this convention has been central to the thesis, but the undertaking also encompass additional legal instruments and treaties of significance including the UNFCCC, the Kyoto Protocol and the Paris Agreement, as well as the Law of the Sea conventions (UNCLOS). Moreover, the search for solutions have comprised the concept of peremptory norms, the idea of new legal subjects, and the potential of freezing the current baselines as they stand today.

A defined territory appears to be a precondition for statehood, albeit not without exceptions, and arguably not necessarily in order to simply retain statehood. Territory at sea is dependent on territory on land, thus maritime areas would disappear relatively to the land submerged by the sea. Anthropogenic greenhouse gas emissions are causing climate change and by extension global warming. Sea levels are rising, and global warming is driving this force. This is affecting small island developing states to the point where they risk losing their statehood. In order to avoid loss of statehood there are certainly paths to explore and arguments to make, but no predictions of how these arguments would be received by the international community if invoked. Whether some or any of them would prove sufficiently convincing is difficult to accurately predict. Legally, it appears that states do risk losing their statehood if submerged by the rising sea levels, but there is no definitive conclusion to come to. If and when a state is de-facto submerged it will be an unprecedented scenario. Despite the strong argument for continued recognition on moral grounds to be made, such a solution gives rise to several additional legal questions, which are beyond the scope of this thesis. Although the thesis has a legal focus, and although the undertaking was done with a clear legal perspective, the conclusion is rather political. It is impossible to ignore the interplay between law and politics. Law is after all frozen politics in a sense. It appears inevitable that the sea will rise to a fateful level at some point in the future, if the reports and scientific predictions are even remotely correct. Small island states should still be able to retain their statehood, in theory, if not for all then at least for one of the different reasons mentioned above. However, it is very doubtful that it will play out like that when the time comes.

States are subjected by international law, and international law has an imperative role to play in securing the continued statehood and recognition of small island developing states. Ultimately, however, the answer will have to be a political one, at least in part, since international law lacks a universally accepted authority to enforce it upon the states. Thus, a cooperative or diplomatic solution is more likely to be successful than a strictly legal one. Notwithstanding all that can be done in terms of mitigating the impacts of the changing climate and adapting to the new reality, small island developing states are highly dependent on the rest of the world for their continued existence.

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