

Climate change and human security

Case studies linking vulnerable populations to increased security risks in the face of the global climate challenge

Dr Simon Chin-Yee



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About the author

Dr Simon Chin-Yee was the Konrad Adenauer Stiftung (KAS) fellow 2017/18 for the European Centre for Energy and Resource Security. He is currently a research associate at King's College London as well as an associate lecturer in politics at Sheffield Hallam University. His doctoral research at the University of Manchester explored the influences on climate policy processes in the lead up to the Conference of Parties in Paris. In addition to his academic background, Simon has extensive experience in international cooperation and policy having worked as a consultant on UN projects primarily in Africa.

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Foreword

In 2017/18, for the eighth time in a row, the Konrad-Adenauer-Foundation (KAS) supported the Fellowship in Energy Security at EUCERS. This year we welcomed Dr Simon Chin-Yee, who submitted a meticulously researched paper on how climate change impacts human security, titled “Climate change and human security: Case studies linking vulnerable populations to increased security risks in the face of the global climate challenge”.

The topic could hardly be timelier given the increasing manifestations of climate change and the ways it impacts human security, be they more apparent such as extreme wildfires and record temperatures or more subtle in the form of creeping desertification.

Through a series of case studies, Dr Chin-Yee argues that the threats arising from climate change are manifold but not readily apparent. Issues such as cross-border migration, internal displacement and violent conflicts – concerns that on the surface may seem like traditional security and humanitarian challenges – take on a whole new meaning when analysed more carefully. Then, as is demonstrated in this paper, the underlying cause of many of these diverse security concerns are also rooted in changing climatic conditions. Indeed, it would be analytically disingenuous to view the loss of living space in low-lying atolls due

to rising sea levels resulting from climate change separately from migration issues, for instance.

This paper encourages academics, policymakers and those interested in the subject to view the topic of climate change through a fresh lens by discarding anachronistic methods of analyses that characterized the discipline even just a few years ago. Compartmentalizing climate and human security challenges into set disciplines is not sufficient any more to deal with the complex challenges climate change poses to human security in the 21st century. As Dr Chin-Yee aptly puts it in his paper “...catastrophic environmental, social, cultural and economic consequences have required that politics and economics become intertwined with the laws of physics, biology and chemistry.”

We would like to take the opportunity to thank Dr Simon Chin-Yee for his timely and insightful study. We would also like to thank Professor Michael Rainsborough and Professor Mervyn Frost from the Department of War Studies, King’s College London for supporting our work at EUCERS. A special thank you goes to Mr Arash Duero, Senior Research Fellow at EUCERS and Dr Frank Umbach, EUCERS Research Director, for editing this Strategy Paper as well as Mr Magnus Smidak, KAS Project Manager, for his continuous support.

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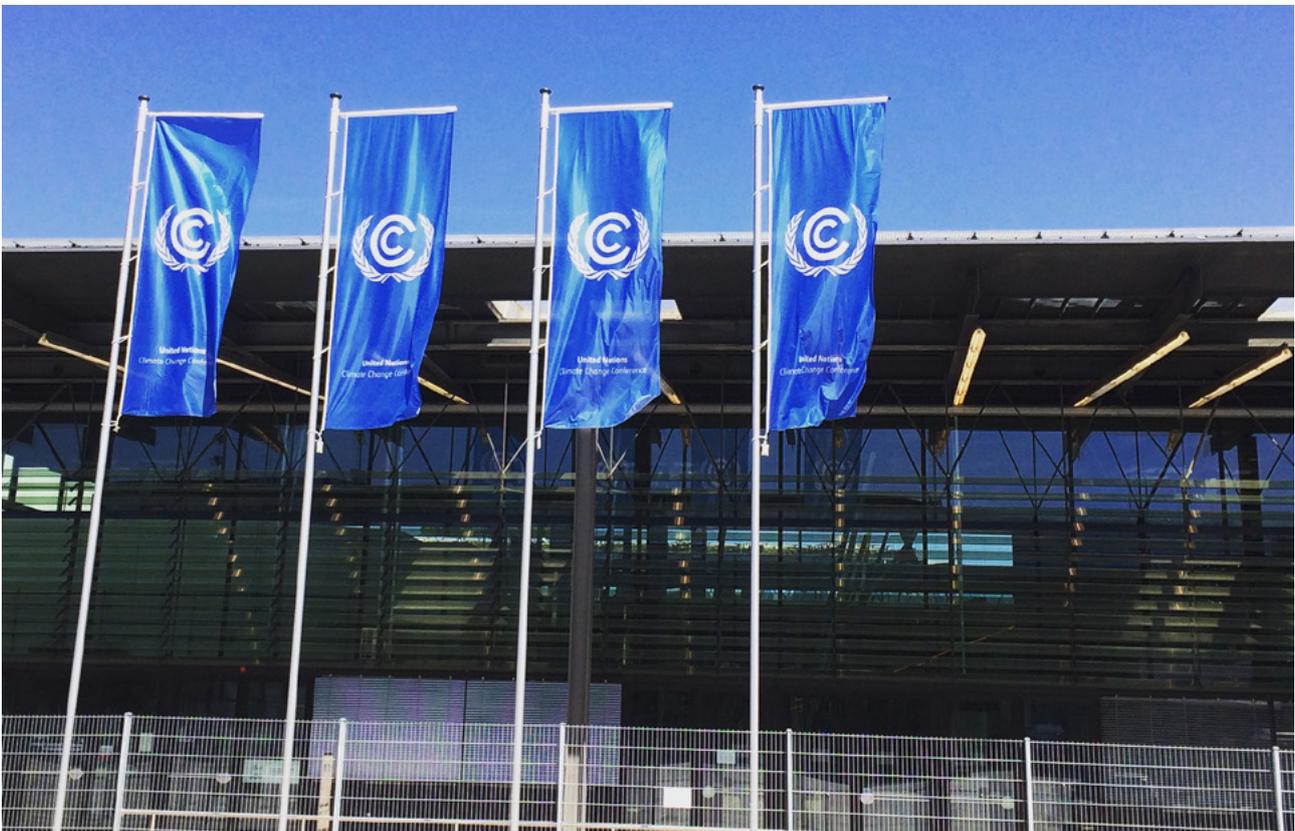
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Abstract

Climate change has become ubiquitous in today's socio-economic and political discourse, being global in scale, climate impacts across ecosystems that cannot be contained by state boundaries. Actions of one country affect regions on the other side of the world, hence the need for a comprehensive and effective global climate regime. In 2015, the Paris Climate Change Agreement was adopted, and in the ensuing years, countries, along with researchers, civil society and industry have been debating how to implement concrete action to address the climate challenge. The link between climate change and human security was first recognised in the early 2000s. This paper examines how climate change has exacerbated uncertainty and instability in vulnerable populations in different regions. It achieves this by looking at diverse national and local experiences through multiple policy lenses, namely, the proliferation of extreme weather events, coastal erosion and sea level rise, internal displacement, cross border migration, and climate change as a threat multiplier. It looks at specific cases in Sub-Saharan Africa, the Pacific Islands and the Levant to understand how human (in)security is being affected by climate change. It also addresses the future of global climate policy by assessing the current state of climate policies in light of the

Paris Agreement. Global action on climate change is urgent. While many developed countries like to avoid notions of climate justice and differentiated responsibilities, the reality for the most vulnerable countries is that supranational policy is crucial if they are to tackle the climate challenge at home. This paper emphasises the importance of having meaningful and focused national climate adaptation and mitigation policies in place in order to address both the avoidable and unavoidable impacts of climate change on the economy, the culture and ultimately the security of a country.

This study finds that as climate change plays an increasingly important role in discussions of security, comprehensive strategies are needed to respond to climate-induced security threats and geopolitical (in)stability both nationally and around the world. The Paris Agreement was a good first step in driving countries to commit to curbing emissions and drafting climate adaptation action plans. We now need the global climate regime – including countries, industry, and researchers – to step up to the plate and implement effective policies if we are to limit the serious impacts of climate change. The findings in this paper aims to contribute to the global debate around security and climate change.



The 48th sessions of the UNFCCC Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) at the World Conference Centre Bonn

Introduction

The days when policy and decision makers spoke of climate change solely in environmental terms has passed. It is now recognised as a multiplying factor that has crept its way into the broad spectrum of global political discourse, including questions surrounding economic growth, cultural heritage, sustainable development and national security. The catastrophic environmental, social, cultural and economic consequences have required that politics and economics become intertwined with the laws of physics, biology and chemistry. This paper looks at how climate change and natural forces are affecting the security of global communities. It emphasises the importance of having meaningful and focused national climate adaptation and mitigation policies in place in order to address both the avoidable and unavoidable impacts of climate change on the economy, the culture and ultimately the security of a country.

The evidence that anthropogenic climate change exists is indisputable. In many regions of the world it is not a future threat but an all too real and present danger. The fact that climate change does not respect national boundaries has meant that the actions of one country are affecting countries on the other side of the world. As such, there is a need to take a global approach to tackling climate challenge. Over the last decades the international community has established a global climate regime, at the heart of which is the United Nations Framework Convention on Climate Change (UNFCCC). Since its establishment in 1992, the regime has produced sets of standards, rules and norms intended to address vulnerabilities for countries and communities. This culminated in the 2015 Paris Climate Change Agreement.

Climate change has a direct effect on the lives of individuals and communities as weather patterns change (Hoffmann 2014: 605). For small island states and atolls, the effects of greenhouse gas (GHG) emissions in terms of sea-level rise, increased extreme weather events such as hurricanes and cyclones and droughts have been felt for over a decade (Cai et al 2014; Bulkeley and Newell 2010: 1; Barnett and Adger 2003: 326; Barnett and Busse 2002). Moreover, as people are forced to relocate and/or change their traditional practices there are tangible economic, social and cultural impacts on society.

It is becoming increasingly important to understand how climate policies are influenced around the world. In the lead up to the most recent Conference of Parties (COP) to the UNFCCC, COP24 Katowice (December 2018), the global climate regime was negotiating the Paris Rulebook, intended to assist countries with implementing their Nationally Determined Contributions (NDCs) or climate action plans. The formal implementation process of the

Paris Agreement is set to start at the beginning of 2019. The regulations within the Paris Rulebook will both assist countries in implementing their climate strategies and be an assessment tool that the UNFCCC will use to quantify and monitor action being taken at the country level.

With all the talk surrounding the global need to address climate change, security risks are only mentioned once in the Paris Agreement in relation to the vulnerability of food production systems. Although research on climate change and increased security risks is relatively new, the connections are, nonetheless, being made by both academia and governments alike (*see government security strategies: EU 2014; GoUK 2008; GoUS 2017 etc.*). As far back as 2003, the Pentagon's Office of Net Assessments had commissioned a report focusing on the security implications of climate change. Additionally, the 2008 'Climate Change and International Security' paper has been attached to the 2003 'European Security Strategy' (Umbach 2010). In 2007, the UN Security Council held its first ever ministerial-level debate on the relationship between energy, security and climate (Ibid.). During this high level meeting, the then Secretary-General Ban Ki-moon called for a 'long-term global response' to climate change, stating that there are implications for peace and security, in particular, in 'vulnerable regions that face multiple stresses at the same time – pre-existing conflict, poverty and unequal access to resources, weak institutions, food insecurity and incidence of diseases such as HIV/AIDS' (UN 2007).

Throughout this paper, I look at both the direct and the indirect consequences of climate change on issues of human security, violent conflict and increased migration. As the shifting climate has slowed crop yield growth, communities are forced to relocate, which increases competition for existing resources. Climate change is also seen as a threat multiplier, exacerbating already volatile situations (Bardram interview 2018; Anonymous 3 interview 2018). The 2017 hurricane season was particularly catastrophic. Hurricane Irma turned Barbuda into a ghost town overnight (Lyons 2017), while Hurricane Maria plunged Puerto Rico into the longest black out in US history (Jervis 2018). In Sierra Leone widespread flooding caused mudslides that left over a thousand people dead and countless others homeless (Simmons 2017). In East Africa, desertification has increased the vulnerability of local populations in the region, which has intensified tensions between communities, increased migration, and provided a space where al-Shabab, a jihadist fundamentalist group, recruits new members (Kuele and Miola 2017). The world is now faced with new and evolving security challenges (Anonymous 1 interview 2018; Tarfa interview 2018).

The overarching question of this paper is: How has climate change exacerbated issues of security? I examine concrete examples of security concerns of countries in different regions of the world. Its purpose is twofold: First, it addresses the future of global climate policy through assessing the current state of climate policies in light of the 2015 Paris Agreement. Second, it examines the security concerns that have been linked to climate change. Diverse lived country and local experiences are considered, namely [1] the proliferation of extreme weather events, [2] coastal erosion and sea level rise, [3] internal displacement of communities, [4] cross border migration, and [5] climate change as a threat multiplier.

I conclude by examining the progress made by countries and the global climate regime on climate policy formulation and implementation. In the wake of the US withdrawal from the Paris Agreement, there has been widespread support from many other actors on the need to act on climate change. These actors include many national governments, US state governors and city mayors, as well as nongovernmental organisations who are stepping up to the plate to affirm their commitment to the pledges made in Paris. Days after Trump declared that the US would pull out of the Agreement, 19 of the 20 G20 leaders made it clear that the USA has an isolated stance on climate change, affirming their ‘irreversible’ commitment to the Paris Agreement. A communique released following the G20 Summit in Hamburg clearly states that

‘We take note of the decision of the United States of America to withdraw from the Paris Agreement’ adding that ‘The leaders of the other G20 members state that the Paris Agreement is irreversible ... [reiterating] ... the importance of fulfilling the UNFCCC commitment by developed countries in providing means of implementation including financial resources to assist developing countries with respect to both mitigation and adaptation’ (EU 2017: 10).

My argument is underpinned by a thorough analysis of interviews with policy makers, climate change negotiators and specialists, as well as official statements and documents (including NDCs) submitted to the UNFCCC. To develop this paper, three international climate conferences were attended from 2017 to 2018 (COP23 Fiji 2017; COP24 Katowice 2018; the 48th Sessions of the UNFCCC Subsidiary Bodies, Bonn 2018). During the negotiations, I followed the Ad Hoc Working Group on the Paris Agreement (APA). This working group was established to prepare for entry into force of the Paris Agreement, providing guidance to countries party to the convention on implementing their NDCs. In particular, to facilitate ‘clarity, transparency and understanding’ of the mitigation

measures, further guidance for adaptation strategies, identifying the sources that will be included in the global stocktake, and the promotion of compliance with regards to implementation of the work programme (UNFCCC *nd2*).

In the lead up to COP24, the Intergovernmental Panel on Climate Change (IPCC) submitted a ‘Special Report on Global Warming of 1.5°C’ that was approved by governments in October 2018. During COP24, Hoesung Lee, the IPCC Chair, highlighted the findings of this report, warning that the world has only 12 years left to cut emissions to avoid calamitous climate change. During the negotiations the head of AOSIS (Alliance of Small Island States), the Maldives, tabled a motion to ‘welcome’ the report. However, to the dismay of almost all other parties, this was blocked by four countries, Saudi Arabia, Russia, Kuwait and the US, who wished the report to be ‘noted.’ In response, Rueanna Haynes, a delegate from Saint Kitts and Nevis, stated that ‘this is not a choice between one word and another ... It seems to me that if there is anything ludicrous about the discussion that is taking place, it is that we in this body are not in a position to welcome the report’ (Ayres 2018). Although the plenary erupted in applause, the climate negotiations are built on consensus, which allows countries such as Saudi Arabia or the US to block discussions.

Observing how the states interact with one another in the negotiating room as well as in smaller groupings was important, especially in light of the US withdrawal. At COP22 Marrakech in November 2016 Claudia Salerno Caldera, Venezuela’s lead negotiator, directly asked the US delegation ‘what will happen when Trump comes to power?’ (Chin-Yee and Gifford 2016). When looking to the future of global climate policies, understanding how international rules, norms and standards are negotiated is essential. These interactions and their consequences, combined with official country and UN statements, have informed this paper.

The Global Climate Regime: Who is creating the international rules, norms and standards?

International rules, norms and standards are set by the global climate regime, an international system established to govern climate change globally. Research on environmental and climate change global systems of governance and the actors that operate within these regimes has progressed considerably since the inception of the global climate regime in the late 1980s (Bulkeley et al 2014; Bulkeley and Newell 2010; Hall and Biersteker 2002; Pattberg 2007; Andonova 2010; Avant et al 2010). Born out of international scientific reports and international negotiations, the global

climate regime has gone through its fair share of problems in its relatively short history. No single state can solve the climate crisis. Climate change is a global issue that needs international cooperation by all parties. Governance of this regime is therefore centred on negotiations where consensus is the means of moving collective policies forward. This ensures that each party contributes to the solution, preventing parties from free riding (Bulkeley and Newell 2010: 2). However, this has also meant that the negotiations can and have come to a grinding halt if consensus cannot be achieved.

In recent years, there has been an onslaught of new climate science, information, international meetings and regulations as the world comes to grips with this global issue that has stymied national, transnational and international policy processes (Bulkeley and Newell 2010: 1; Dryzek and Stevenson 2011: 1865). The proliferation of actors that demand a voice – states, negotiating coalitions, private enterprise, civil society – has made the regime both unwieldy (Levi 2009) and complex, making it difficult for decisions based on consensus to create effective policy (Vogler 2008: 362; Bulkeley and Newell 2010: 2). That being said, the number and diversity of the actors can change or direct the narrative of how global and regional entities influence national climate policies. Like the global climate regime itself, its primary epistemic community, the IPCC, is unique; a network of scientists, academics and policy makers that produce scientific knowledge that was formed and is driven by the UN, giving states influence in the scientific advisory process (Haas 2004: 580). As previously mentioned, I put the UNFCCC at the heart of the global climate regime.

Since its inception upon the creation of the first IPCC in 1988, the global climate regime has been in a state of constant flux. The establishment of the Kyoto Protocol in 1997 was the global climate regime's first attempt to bring in legally binding policy. It provided a framework under which governments were to address national GHG emissions. By setting upper limits on emissions and hard deadlines, the Protocol attempted to move away from a business-as-usual approach to emissions reductions (Barrett 1998: 20). Almost immediately the global climate regime hit a roadblock. At the time of signing, the Kyoto Protocol instructed states to reduce GHG emission levels to 5.2 per cent below the 1990 levels by 2012 (Murphy 2001: 647). This did not happen.

In December 2009, COP15 took place in Copenhagen. Originally nicknamed 'Hopenhagen,' expectations were high going into this climate conference. With a new administration in the White House, this conference was to launch the Copenhagen Accord, successor to the Kyoto Protocol. As part of the UN Seal the Deal campaign,

'Hopenhagen is about more than hope. It is about global action for a global climate treaty and a better future for humankind' said then UN Secretary-General Ban Ki-moon (Brownsell 2009). The Danish government had spent three years preparing for this meeting. With 122 heads of state in attendance, the 'deal' was to have been a strong accord setting emissions targets for 2012 for developed states, as well as the incorporation of developing parties in addressing climate change. As Carl Death (2011: 8) explains, '[n]ot only did this not happen, but the entire event was an unconvincing performance of political leadership from international leaders and elites.'

As a result of these failures, a lot was riding on COP21 Paris. In the 6 years in between COP15 and COP21, the international community banded together, fully aware that a failure in Paris would put the whole global climate regime in jeopardy. An agreement had to be drawn up that was based on consensus and would also address the global climate challenge. In the last year leading up to COP21, the UNFCCC's subsidiary bodies (the Ad Hoc Working Group on the Durban Platform for Enhanced Action) met on four occasions to try and come up with a text that would be acceptable to all parties, and in Paris itself, the final adoption of the agreement was delayed as Presidents and negotiators hammered out the final version of what was to be the document that was to govern global climate change. Finally, on 13 December 2015, the Paris Agreement was formally adopted and within the year, on 4 November 2016, it went into force.

One of the fastest ratified UN accords in history, the Paris Agreement was the culmination of years of collaboration between scientists, experts, negotiators, government officials, and civil society to produce the world's first truly global climate change agreement. The Paris Agreement's goal is to strengthen the global response (from all parties, both developed and developing states) to climate change by '[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels' (UNFCCC 2015: Paris Agreement Article 2: 3). These outcomes have a direct consequence on national climate policy processes. A clear example of this was the submission of the INDCs (Intended Nationally Determined Contributions) prior to COP21 Paris. Although voluntary by design, these contributions were a direct 'response to decisions adopted at the 19th and 20th sessions of the Conference of the Parties to the [UNFCCC]' (GoK 2015: 1).

In the last decade, global climate change discourse has transcended environmental issues such as GHG emissions to become an essential theme in many policy areas, for

example global security, public health and job creation. The regime has been able to put in place mechanisms that are intended to operationalise the agreement. However, as previously mentioned, as it is built on consensus, the negotiations highlight divisions that appear between states. For example, disputes between those who feel climate change threatens their very existence with those whose economy is based on fossil fuels (Karlsson et al 2012: 5). Both Nigeria and Norway want to move on climate change while protecting their oil reserves, while Tonga and the Seychelles are focused on their disappearing coastlines (Fulivai interview 2018; Jumeau interview 2018). However, despite several stumbling blocks since its inception, the adoption of the Paris Agreement by the global climate regime is an historic milestone in global climate governance.

It is within this context that climate change policy is being monitored and assessed. However, is the international community doing enough to limit the effects of global

warming? Since the early 2000s academics, policy makers and security advisors have been connecting a changing climate to security problems. As is explained throughout this paper, climate change increasingly undermines human security, and by reducing access to, and the quality of, natural resources that are important to sustain livelihoods this will only be exacerbated in the future. States have a varying capacity to handle the climate challenge. As has been noted within the Paris Agreement, many (developing) countries have a *Common but Differentiated Responsibility*. How this is reflected in strategies and implementation remains to be seen. The reality is that climate change is already undermining the capacity of countries to put in place policies that can both predict and adapt to changing weather patterns, which in turn underlies their inability to maintain existing livelihoods, nevermind mitigate future environmental disasters. I argue that the direct and indirect impacts of climate change have increased security risks within countries and across borders.

Climate change and security risks: Case by case study

The next five sections are an in-depth look at concrete examples of how climate change has affected security in select countries and regions. A narrative analysis of climate change policy tells the story of policy processes that can point to the future of the global climate regime. It makes sense of the particular influences, both scientifically determined and socially constructed in light of the Paris paradigm and the Trump challenge. The analysis in these case studies will take the relevant historical and political contexts into consideration to understand the security concerns of different countries.

The sections can be broken down as follows:

1. Extreme weather events: considering small island states
2. Sea level rise: risks facing small island states
3. Internal displacement and violent conflict: Africa
4. Cross border migration: Africa and the Levant
5. Climate change as threat multiplier: Global challenges

The Right to Exist: Small island states at risk of disappearing completely

Some countries will feel the effects of climate change more acutely than others. Low-lying island states, such as the Maldives or Tonga, are in real danger of disappearing all together. In 2017, for the first time since the inception of the UNFCCC, one of the small island developing states (SIDS), Fiji, presided over the Conference of Parties (COP) that govern the global climate regime. In a statement made prior to COP23, Fijian Prime Minister Frank Bainimarama (2017) stated

‘I intend to act as COP President on behalf of all 7.5 billion people on the planet. But I bring a particular perspective to these negotiations on behalf of some of those who are most vulnerable to the effects of climate change – Pacific Islanders and the residents of other [island] countries and low-lying areas of the world.’

Spread across the globe – the Pacific and Atlantic, Indian Ocean, Caribbean, Mediterranean and South China Sea—small islands are at particular risk of climate change (UN-OHRLLS 2011: 2). The reasons are threefold: First, the geographical realities for the SIDS. The size and position of these countries means that as sea levels rise, their land disappears. Second, as extreme weather events proliferate around the world, many of these islands are in the pathway of hurricanes and typhoons. Third, the islands are not only small in physical size, but are also economically less powerful than most other countries in the negotiations.

Despite being culturally and geographically diverse, the 51 SIDS, nevertheless, speak as one in the global climate regime. Their size and remoteness mean that they confront similar economic and sustainability challenges, including elevated transportation costs, growing populations and the unsustainable use of available natural resources (UNFCCC 2007: 4). With small populations who are often reliant on single source markets, their ability to adapt to climate change or to rebuild after an extreme weather event is limited. Additionally, the carbon footprint of the islands is negligible, but they are suffering disproportionately from climate change.

Anote Tong, the former president of the island republic of Kiribati stressed

‘I’ve always said climate change is the greatest moral challenge for humanity. Because if you know the action, what you do actually results in the demise of a people on the other side of the world. What are you going to do about it? Are you going to keep going on doing it? Or do you have the moral capacity to refrain from doing it?’

... Our islands will be under water unless, of course, we undertake very serious adaptation measures, for which there are no resources forthcoming, even at this point in time’ (CBC 2018).

One particular stalwart of the climate negotiations is Ian Fry, negotiator for Tuvalu, a country located in the Pacific, halfway between Australia and Hawaii that at its highest point is only 4.6 metres above sea level. In a plea to the delegates attending COP15 Copenhagen, Fry stressed that

‘...we are not naive to the circumstances and the political considerations that are before us. It appears that we are waiting for some senators in the US Congress to conclude before we can consider this issue properly. We note that President Obama recently went to Norway to pick up a Nobel Prize ... we can suggest that for him to honour this Nobel Prize, he should address the greatest threat to humanity that we have before us, climate change, and the greatest threat to security, climate change’ (Pasternack 2009).

The size, composition and location of many of these islands are particularly vulnerable to climate change. This, combined with the economic realities of these countries, means that it is more difficult for them to adapt and/or recover after extreme weather events.



The Maldives

The proliferation of extreme weather events

As we have seen in recent years, island states are particularly susceptible to large ocean-atmospheric events, such as the effects of El Niño, but also extreme events such as hurricanes and typhoons. Their geographic situation, combined with the socioeconomic realities of island states, has made them particularly vulnerable to extreme weather events (UNFCCC 2007: 4). Between November 2017 and April 2018, the Pacific Islands were battered by twelve cyclones. Not all of them make landfall, but when they do they are more intense than they used to be, leaving devastation in their wake (Fulivai interview 2018).

Hurricanes have become commonplace in the Caribbean. In September 2017, Hurricane Irma made landfall on the island of Barbuda. This Category 5 hurricane was 378 miles wide when it destroyed the 62 square mile island (Cockburn 2017). Only two days later, fearing that Hurricane José would be of similar strength, the entire island was evacuated (Lyons 2017). Later that same month Hurricane Maria devastated neighbouring Dominica, turning a country with a promising eco-tourism sector into rubble overnight (Elie 2017). With 95 per cent of the buildings damaged, many Dominicans fled the country, some permanently (Ibid.). Maria also hit Puerto Rico, an unincorporated territory of the US, demolishing trees and buildings alike (Holpuch and Fishwick 2017). According to Amnesty International (2018), one year later, there are still tens of thousands of Puerto Ricans living under blue tarps. A George



Washington University study raised the death toll to an estimated 2,975 from the 64 originally reported (Ibid.).

This is not just occurring in the Caribbean. Low lying islands all over the world are now threatened with more and stronger weather events. Sione Fulivai, the principal climate finance analyst for the Tongan Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Communications and Climate Change, explained island states are finally beginning to accumulate enough data to get a clear picture of both sea level rise and extreme weather (interview 2018). He explained that in Tonga, 80 per cent of their population live along or in close proximity to the coastline. Consequently, they are at risk of inundation and wave overtopping during high tidal events. Combining this with heavy rainfall, they are at high risk of flooding (Ibid.).

In February 2018, Category 5 Cyclone Gita made landfall in Tonga. During this time, discussions were taking place to re-categorize cyclone strength to include a Category 6. Cyclones are getting stronger, and Category 5 only takes into account wind strength/speed that goes up to 200 km an hour. The Pacific is now experiencing cyclones with wind speeds closer to 250 km an hour (Fulivai interview 2018). The recovery time for small island states is also being compounded by repeated weather events. According to Fulivai (interview 2018), it took four years for Tonga to recover from Cyclone Ian in 2014, just as Cyclone Gita hit. Moving forward, all island states need to focus on disaster risk reduction and climate change adaptation. Governments and communities in low lying islands need to be prepared for cyclones, hurricanes and other weather events to become more frequent. Countries that do not have the human resources, facilities or technologies to recover from extreme climatic events are extremely vulnerable (Ibid.). Sione Fulivai made it very clear that

‘[t]he ideology in Tonga now, is to ... [move] from reliance to resilience. In the past there’s been [the tendency for] communities ... [to] wait for government and other donors, development partners to come in and assist. It’s now trying to place some emphasis on the communities to ... do what [they] can to recover from this because government won’t have enough resources to cover everything. A simple example is the flooding that just happened in Tonga – we received flooding over nine days and had to pump all that water back into the ocean. We were pumping at a rate of 6,000 litres a minute. Once the pumping was completed it came to 30 million litres of water pumped back into the ocean and that’s the thing, there’s nowhere else to pump it. So, the infrastructure plays a big part in the recovery process as well as ... the adaptation measures prior to when the event happens’ (Fulivai interview 2018).

Sea level rise and climate refugees

Sea level rise is a major concern for many, if not all, island states, none more so than the Pacific island nation of Kiribati, whose 100,000 inhabitants could be the first people to see their country disappear within a generation (Mathiesen 2014). The IPCC attributes sea rise to an increased volume of the oceans, caused by thermal expansion, melting glaciers and ice sheets, as well as the reduction of water storage on land (Church et al 2013: 1139). Contributing to less than 1 per cent of global GHG emissions, small islands are at the forefront of advocating for action on climate change in the global climate regime (UNDP 2017). For these islands, climate change is both an issue of security and survival. According to the United Nations Development Programme (2018), 26.2 per cent of land area on the islands is less than five meters above sea level, while 29.3 per cent of the population lives in the coastal zones. In 1988, Jodi Jacobson (1988: 29) explained that ‘[a]mong the various environmental problems that cause the displacement of people from their habitats, none rivals the potential effects of sea level rise as a result of human-induced changes in the earth’s climate.’

Adao Barbosa, the lead negotiator for Timor-Leste and spokesperson for the Least Developed Countries (LDCs) on loss and damage in the climate negotiations, has made the link between climate change and human and regional security. He explained that with the rising sea levels

‘[We are] going to be losing our properties, our land will be under water. In Timor-Leste I conducted some research ... especially in coastal area. We did find that some of pieces of land [are] under water ... [even] the future of our capital Dili will be under water. This is not an issue of environment, but ... [an] issue of development, an issue of security for our people, our infrastructure and our land’ (Barbosa interview 2018).

The reality for island states is that, as sea levels rise, their land is disappearing at an alarming rate. In the case of Kiribati, the former president Anote Tong stated that they may have already reached ‘the point of no return,’ adding that, ‘to plan for the day that you no longer have a country is indeed painful, but I think we have to do that’ (UNFCCC *nd*). Timor-Leste is one of the countries that have offered land to the people of Kiribati should their land become uninhabitable (RTCC 2012). This brings up the sensitive subject of *climate refugees* – what becomes of a people whose country has disappeared or become uninhabitable due to climate change? Fulivai explained that while Tonga has a small population of 100,000, a neighbouring South Pacific Island Niue has a total population of only 1,200. In 1999, a category 5 cyclone nearly wiped out the entire country. With the infrastructure, including health services,

on Niue completely flattened, people had to be airlifted to New Zealand. The fear among many Pacific Islands – the majority of which are low lying atolls – is that their country may be next (Fulivai interview 2018).

Many Pacific Islands use a land tenure system that prohibits the sale of land (Ibid.). According to Sione Fulivai (interview 2018), land in Tonga is hereditary. The system is in place to prevent eviction of people from their land by foreign and domestic interests, and to ensure a subsistence lifestyle on the islands (Latu and Dacey 2006: 146). However, this means as land disappears or is devastated by a natural disaster, there is no alternative land for the relocation for the families either through familial ties or government programs. The only option left is to migrate overseas and claim refugee status. However, as of 2018, there is no official international definition of a ‘climate refugee’ (Fulivai interview 2018).

‘[For] Pacific Islands, cultures are tied to the land, the sea and the sky ... Our ancient myths and legends on our origins are all based on stories and oral traditions from the land, earth and sky. Our identity is based on where we are from’ (Fulivai interview 2018).

In other words, they do not want to leave their lands. An islander’s identity is tied to their home. If their country disappears and they are forced to migrate, they will be strangers in a new land. For over three thousand years, they have farmed particular vegetables, developed knowledge about the best fishing areas, gained an intrinsic understanding of their homeland – the coastline is part of their identity (Fulivai interview 2018). The islander reaction to climate change is not simply a loss of terrain, but a loss of cultural values and practices that are tied to identity (Farbotko and Lazrus 2012: 382). As Susan Crate and Mark Nuttall (2009: 13) elucidate, ‘as the earth literally changes beneath their feet, it is vital to understand the cognitive reverberations and cultural implications to a people’s sense of homeland and place.’ The term climate refugee is highly politicised, being used by some as the face of the climate crisis. However, this concept is rejected by many islanders, who are looking for solutions through self-determination and action, rather than the planning for mass displacement of entire populations (McNamara and Gibson 2009: 481). As Fulivai (interview 2018) eloquently explained, ‘in Tonga, we always say that if there are three blades of grass still above sea level we’re going to fight for that, because that is the last remnants of what we call home, where our identity lies.’

For small island states, mitigation is what is needed, not migration (McNamara and Gibson 2009: 480). In 1998, President Maumoon Abdul Gayoom of the Republic of the

Maldives brought attention to the plight of small islands in an impassioned speech:

‘We don’t want no sea level rise. There must be a way out. Neither the Maldives nor any small island nation wants to drown. That’s for sure. Neither do we want our lands eroded, or our economies destroyed. Nor do we want to become environmental refugees either. We want to stand up and fight. All we ask is that the more affluent nations and the international community in general, help us in this fight (Gayoom 1998: 29).

Within the global climate regime, small islands have been calling for industrialised nations to step up action on combating the climate challenge. They argue fervently that they do not want to be labelled ‘future climate refugees.’ They are sovereign, independent nation states and wish to remain so (McNamara and Gibson 2009: 480). Using the Pacific Islands as examples of climate refugees is tantamount to accepting that their lands will be lost. The fear is that,

by seeing an entire population as climate refugees, polluters will have an excuse to continue unsustainable practices, as the relocation ‘solution’ has been put on the table (Ibid.: 482). Finally, by referring to islanders as climate refugees disempowers entire populations and, while it is likely that climate migration will be a reality for some, islanders want the debate framed around concepts of ‘human rights and global citizenship’ (Farbotko and Lazrus 2012: 388). They see a future for their countries, but it is dependent on action by the larger polluting countries (McNamara and Gibson: 481). As Adao Barbosa powerfully explained

‘The critical thing is human displacement. If mitigation [measures] fail in the next few decades, then small island states will be facing [a] very huge problem. They will need to be displaced from their house, from their country. Some of the islands will be under the sea. In this regard we need to discuss how ... [to move] people, and into which country? This is [an issue of] security, a nation’s right to be alive’ (Barbosa interview 2018).



Timor-Leste has offered land to the people of Kiribati in the event that their land becomes uninhabitable

Africa: Internal displacement and violent conflict

Similar to the SIDS, it is widely recognised that the African continent will be hit faster and with a higher magnitude by a changing climate than many other parts of the world (Pelling and Uitto 2001; Adger et al 2003; Collier et al 2008). It is projected that for many countries, temperature increases will be several degrees higher than the global average. Throughout the continent climate-related impacts, such as droughts, failing crops, unpredictable weather patterns and rising temperatures in lakes have escalated in recent years (Collier et al 2008). The resulting economic instability and food (in)security have been linked to large-scale migration and displacement of communities and conflict over the remaining resources (Black et al. 2011). This 'new' unstable environment gives rise to security threats at the national and transnational level.

In the lead up to the signing of the Paris Agreement in 2015, African negotiators had been lobbying for a deal that would hold global temperature rises to 1.5°C and not the divisive 2°C that was agreed on in Copenhagen. This is because there is a higher sense of vulnerability in Africa, as well as a sense of urgency that needs to be met with concrete action on the ground. The 4th IPCC assessment reports (2007: 48) stressed that '[t]he most vulnerable industries, settlements and societies are generally those in coastal and river flood plains, those whose economies are closely linked with climate-sensitive resources and those in areas prone to extreme weather events, especially where rapid urbanisation is occurring.' Additionally, the 5th IPCC Working Group II (2014: 797) also affirmed that 'climate change will ... create new poverty pockets in countries with increasing inequality ... Wage-labour dependent poor households that are net buyers of food will be particularly affected due to food price increases ... especially in regions with high food insecurity and high inequality (particularly in Africa).'

Vulnerability is key to understanding the impact that climate change has on African countries. Broadly defined as risk to exposure, sensitivity and adaptability (McCarthy et al 2001), Sub-Saharan Africa stands out as particularly vulnerable. The IPCC Assessment Reports stressed that it is poor and marginalized people who will be most severely affected by climate change. They also happen to be the least able to adapt. Additionally, the 2014 IPCC report stated that 'heightened vulnerability is rarely due to a single cause. Rather, it is the product of intersecting social processes that result in inequalities in socioeconomic status and income, as well as in climate exposure. Such social processes include, for example, discrimination based on gender, class, ethnicity, age, and (dis)ability' (IPCC 2014: 6). Poverty and vulnerability go hand-in-hand. Without the correct tools (technology, skills, infrastructure, etc.) it is more difficult for communities (or countries) to tackle climate change. This is further exacerbated in communities side-

lined from social security and decision-making processes. Ashley McIlvain Moran et al. (2014: summary) underlined Africa's vulnerability to climate change, noting that

'Due to reliance on climate-sensitive activities like agriculture and fishing, Africa is projected to experience substantial losses in food production by as early as 2050. Many parts of Africa now face a number of security challenges concurrently — such as food and water stress, disease outbreaks, contests over state power, and conflict in some regions — that, when combined with more frequent climate hazards, could overwhelm governments' capacity to meet the basic needs of their people.'

Much of the language that surrounds global governance of the climate is future-oriented (Chaturvedi and Doyle 2015). As the international community talks about projections for 2030, 2050, even 2100, Africa is already suffering from a rapidly changing climate and unpredictable weather patterns. The 2014 IPCC Working Group reported that in 2008, the Zambezi River in Mozambique flooded displacing approximately one million people (IPCC 2014: 42). The report also highlighted the increase in temperature of surface waters in the African Great Lakes and Kariba in Zambia; the retreat of tropical highland glaciers in East Africa; soil moisture drought and tree density decrease in the Western Sahel and Morocco; a shift in the ranges of plants and animals; and the degradation of coral reefs in African waters (IPCC: Impacts, Adaptation and Vulnerability 2014: 44). According to a study released by Verisk Maplecroft, a data analytics and risk assessment firm, rising temperatures could result in a decline of 10.8 per cent of West Africa and 7.9 per cent of Central African exports, primarily in the agriculture and extractive industries (Bérenger 2018).

In recent years, Africa has made gains in development. However, with a population estimated at 1.25 billion (Population Reference Bureau 2017) in 54 countries, Africa is home to a large share of the world's least developed populations, and recent development gains are threatened if the climate crisis is not managed correctly. Low levels of development are further exacerbated by distributional issues as countries in Sub-Saharan Africa have some of the highest levels of inequality of human development in the world (Grimm et al 2008).

The link between climate change and security is becoming increasingly prominent across the continent (Barnett and Adger 2007). A causal factor, desertification has forced herders to move into areas that have more sustainable sustenance for their cattle. For example, in Nigeria's northern Sahel region, which is experiencing increased heat and less rain. It has been reported that this zone

receives less than 25 per cent of the rain it received thirty years ago (Sayne 2011: 3). As the Sahel moves south at a rate of 1,400 square miles a year, people have had to move their livestock or abandon villages as areas become desert or semi-desert (Ibid: 4). Reduced access to water and changing weather patterns have negatively affected food security and undermined livelihoods in already vulnerable communities. As peoples are displaced from drought prone areas and resource scarcity, they come into competition with already existing communities. Desertification, rising water temperatures and unpredictable weather patterns are forcing people off their traditional lands. This is having direct socio-economic and cultural impact on populations (El Wavi interview 2018; Anonymous 1 interview 2018; Anonymous 2 interview 2018).

The climate change-migration nexus in Europe tends to have a focus on crossing borders. The image of people attempting to cross the Mediterranean to reach European shores has been etched into the European psyche. However, in Africa, the reality is that population movements occur more frequently within the borders of countries. As I explore in the next section, cross border migration is also an issue, however, internal displacement is the more pressing concern for African countries. Historically, migration has been used by people for various reasons, from searching for alternative food sources to escaping conflict zones. In 2018, climate change is an underlying factor in human movement.

An increased demand for land combined with shrinking resources is causing conflict. Petrus Muteyauli (interview 2018), Namibia's Deputy Director in the Ministry of Environment and Tourism, highlighted that in communities with a usually stable human-wildlife balance, are seeing herders move into these areas, occupying land illegally to feed their cattle. As humans are being brought into contact with dangerous animals such as leopards, cheetahs and lions – these animals sometimes end up being killed to protect the herders and their livestock. In certain local communities, animals such as lions are used for trophy hunting. As Muteyauli stated

'[In Namibia] we have national breeding camps ... to make sure that we maintain the species at a sustainable level. Different conservancies use [these camps] for trophy hunting ... one lion ... [can net] €20,000. The community uses that income for other activities to uplift themselves from the use of wildlife' (Muteyauli interview 2018).

This loss of tourist income has brought herders and communities into conflict.

Peter Tarfa (interview 2018), Director of Nigeria's Department of Climate Change, highlighted that internal

displacement is increasingly becoming an issue. With a population of 177 million, Nigeria is not only the most populous country on the continent, but also the most populous country in OPEC – the Organisation of the Petroleum Exporting countries (OPEC *nd*). Made up of environmentally diverse regions, from the mangrove swamps that span Nigeria's coastline to the savannah where rainfall is limited and tree cover minimal, Nigeria is also home to one of the world's largest deltas – the Niger. Despite attempts to diversify away from oil production, Nigeria remains economically reliant on its oil and gas industry. The recent recession was largely the result of declining global oil prices (Abidoye and Cali 2014), which was exacerbated by a decrease in oil production because of intensified violence in the Niger Delta (Eboh 2017). For over a decade, Nigeria's economy saw growth and became the largest on the continent because of crude oil production, which accounts for 70 per cent of government revenue (BBC 2016). However, in recent years, falling oil prices, combined with an overvalued national currency and a debilitating currency shortage, have left the country's economy floundering (Kissi and David 2017). Additionally, low oil prices and a decrease in output have reduced Nigeria's national profits and foreign exchange earnings has led to a rise in prices for goods and services, increased unemployment, and a decline in its Gross Domestic Product (Eboh 2017).

With this backdrop, national climate strategies in Nigeria come with a complex set of environmental, cultural, economic and political intricacies. Their INDC acknowledges that Nigeria is susceptible to climate change, signalling out the north as particularly prone to drought (GoN 2015: 1). As sea levels rise, desertification intensifies, and flooding and erosion becomes more commonplace (Medugu, 2009; Oloruntade et al 2011: 54), the changing climate is already having socio-economic impacts on the country. Despite the importance of the Niger Delta in oil production, it is the very oil exploration that has resulted in environmental degradation and pollution, bringing about social, political, health and economic insecurity to the region (Eneh 2011: 252). With the decrease in precipitation, many rivers, such as Lake Chad in northern Nigeria, are in danger of disappearing. Not only is climate change altering ecosystems, but as water becomes scarcer the concentration of people and fauna around the remaining sources have the potential to increase water borne diseases, such as cholera and typhoid fever (Akpodiogaga-a and Odjugo 2010: 52).

According to Tarfa (interview 2018), climate and conflict are manifesting themselves in clashes between herdsman and farmers. As climate change is forcing herdsmen to migrate, they move inwards towards the middle belt of the country, where they come into conflict with local farmers. The Nigerian government is currently in policy discussions

intended to bring national climate change and security issues together. Included in the discussion are several of Nigeria's security agencies – police, military, immigration – who understand the need to look at the movement of populations across the country (Tarfa interview 2018).

Herders from a large nomadic pastoral community called the Fulani have moved their livestock into the North-Central region or Middle Belt of Nigeria in search of grazing pastures (Blench 2004; Okoli and Atelhe 2014: 80). The scarcity of resources in their traditional lands has forced herders to relocate to protect their livelihoods. However, this has put them in direct conflict with existing farming communities. As Murtala Adogi Mohammed explained

‘As the population is increasing, definitely there will be as well increase in demand for land, water, forest products and grazing land within the territories inhabited by Fulanis and farmers; these groups are forced to find new ways to cope with different types of conflict at once because of competition over marginal resources’ (Adogi 2013: para 7).

The herder-farmer relationship in Northern Nigeria dates back over a century. However, since 2013, security issues have deepened as armed herders have moved into the Middle Belt and been accused of deliberately letting their cattle graze on farmland, which has led to violent confrontations (Enokela 2018: 326). The issue is double sided, as competition over resources is not a new issue in Nigeria. In this case, climate change has been a multiplying factor (*see section 5: threat multiplier*) in exacerbating conflicts in the region. The majority of the herders are

Fulani that have had to move south, outside of their traditional routes as desertification takes hold. However, farmers have also had to use more and more land each year due to weather-related impacts, leaving less room for the Fulani's livestock to graze (Sayne 2011: 5). In Benue State, the government enacted the Anti-Open Grazing Law in an effort to curb the conflicts. However, this backfired when the cattle breeders association (Miyetti Allah Cattle Breeders Association) called for the law to be repealed, which led to more clashes and violence (Enokela 2018: 326). The Africa Conflict and Security Analysis Network (ACSAN) reported that 853 people were killed in attacks in the Middle Belt region between January and March 2014, of these 214 were Fulani herders (as well as 3200 cattle), and 633 Tiv people (Adamu and Ben 2017: 13). Other reports have claimed that over 5,000 deaths have occurred between 2014-2018 as a result of these confrontations (Enokela 2018: 327).

Herder-farmer clashes were also highlighted in South Sudan (Anonymous 1 interview 2018). As herders move into already existing communities, conflicts arise, cattle are stolen or killed. There have also been reports of the herders themselves being killed (Ibid.). In South Sudan's Bahr el Ghazal region, the government implemented the 2016 Marial Bai agreement, which is an addendum to the country's existing land laws (Nnoko-Mewanu 2018). This agreement directly addresses the conflict that arises from migration and includes compensation packages for damaged crops or livestock killed, as well as procedures on how to handle conflicts related to migration (Teklewold 2018). Local community-driven solutions such as the Marial Bai agreement are needed throughout the continent to address conflicts arising from climate related migrations.



Climate change and cross border migration

Movement is not limited to within borders. An increasing issue is groups of people moving into neighbouring countries, as climate-related impacts force them from their traditional territories. As we have already seen, some people, and in the case of small islands, potentially entire populations, have to move or be relocated as their homelands become less habitable due to increased climate risks. In recent years, there have been a growing number of people moving across borders as security issues increase due to violent conflict, which, as I explore in this section, is often exacerbated by climate change. The growing number of refugees from Syria in Jordan or Somalia in Kenya demonstrates new challenges in addressing human mobility in international processes. There is the need to be careful not to conflate already complex issues when linking climate change, violent conflict and cross border migration. That being said, there is growing evidence that the root causes of many conflicts have been desertification and climate change, robbing people of their livelihoods (Anonymous 1 interview 2018; Tarfa interview 2018). The previous section looked at how herders and farmers have come into conflict within country boundaries. This section looks at examples of human mobility across borders and its effects on the receiving country.

The Horn of Africa is particularly volatile and has been known for decades for its long-lasting intra and interstate conflicts. Currently, the proliferation of al-Shabab in Somalia, the violent civil conflict in South Sudan, and the border conflict between Ethiopia and Eritrea are but a few of the pressing human security challenges in the region. The present situation of the region also reflects the intensification of political violence in some countries, gross violation of human rights in others, large scale displacement of people, inequitable distribution of resources and increasing poverty as a result of periodic droughts, famine and man-made environmental disasters. Moreover, this context is particularly threatening as seven (Djibouti, Eritrea, Ethiopia, Somalia, Sudan, South Sudan and Uganda) of the eight-member states of IGAD (Intergovernmental Authority on Development), a regional trade bloc, are classified as Least Developed Countries (LDCs) and have therefore very limited capacity to respond to these challenges. While the region has attempted to make visible efforts to move away from the history of crises that have paralyzed the political and socio-economic development of the entire region over the years, climate change is further hindering stability in the Horn.

On the border of Ethiopia and Kenya, conflicts have arisen as Ethiopian pastoralists have moved across the border to search for grazing land and water. Stretching from southern Ethiopia into Kenya, the Omo-Turkana basin is particularly prone to droughts, which are now becoming more frequent

and intense (ECC Platform *nd*). Conflicts between the Dassanech people of Ethiopia and the nomadic Turkana people of Kenya are rooted in cultural practices involving rites of passage. However, in 2009, the conflict took a different turn, as fighting broke out over scarce resources (Corcoran 2016). Highly vulnerable to climate change, the pastoralists of southern Ethiopia have suffered from economic and political marginalisation, as well as ill-chosen development activities and poor infrastructure (Gebresenbet and Kefale 2012: 573). For the Dassanech, migration is not only a coping mechanism during times of drought, but a way to minimise the impacts of flooding (Ibid: 575). With an economy reliant on rain-fed agriculture, pastoralists in Ethiopia are particularly vulnerable to climate change. On 2 May 2011, an incident known as the Todonyang massacre took place. The Turkana and Dassanech were trading on the Ethiopian side of the border. As the Turkana traders, mainly women and children, were ambushed by the Dassanech Merille Militia, killing 28 people. The Turkana warriors launched a counter attack killing 46 Dassanech (Corcoran 2016). Competing for dwindling food supplies, the regional governments – Ethiopia, Kenya, South Sudan – need to implement early warning systems to better prepare for climate change along their borders in order to predict when there will be periods of extended flooding or drought (Gebresenbet and Kefale 2012: 578).

Another highly volatile region with both a history of conflict and high vulnerability to climate change is the Levant. The countries of Syria, Lebanon, Israel, Jordan and the occupied Palestinian territory have seen rising temperatures exacerbating tensions in recent years. With over 60 years of conflict in the region, climate change is not always the first issue that comes to mind when examining regional stresses. However, not only is climate change having a direct effect on the region, but the decades of conflict have undermined the region's ability to cope with the changing climate (Brown and Crawford 2009: 10).

The Hashemite Kingdom of Jordan (GoJ), a small upper-middle income country in the heart of the Middle East has limited natural resources and increasing energy demands (GoJ 2016: 3). With a population of approximately 6.4 million, Jordan has been able to invest heavily in infrastructure while maintaining foreign and domestic investment. However, unemployment remains high, and the influx of Syrian refugees since the breakout of civil war has increased demand for energy (Ibid: 4). Jordan, already a water-poor country, is expected to lose one third of its winter rainfall by 2100, as well as experiencing a 4.5°C temperature rise, which will likely increase the frequency, duration and intensity of droughts in the country (Arsenault 2017). Jordan's NDC submitted to the UNFCCC in 2016 outlines that

‘One of the main demographics and, thus, political determinants for Jordan and, thus, development implications is migration. Being at the crossroads of two major areas of instability and prolonged conflicts, Jordan has become the destination for several waves of forced migrants from Palestine and, lately, from Iraq and Syria. Since 2011, and until February 2015, Jordan has hosted over 650,000 refugees from Syria ... The waves of refugee influxes are still ongoing, as the conflict has no foreseeable solution. Based on data from [the] Department of Statistics (DOS) obtained at the end of 2014, the total number of unregistered Syrian people in Jordan is 750,000 people while the registered number with [the] UNHCR is 650,000. The grand total number of Syrian [sic] in Jordan is 1.4 million persons’ (GoJ 2016: 5).

Dina Kisbi, Director of Climate Change Directorate, Ministry of Environment for Jordan, eloquently explained that the influx of Syrian refugees combined with limited resources puts a strain on a small economy.

‘You have ... very limited resources, especially water and then you have an induced growth rate that was not provisioned ... one million Syrian refugees, in just the last couple of years ... And then you have the conflict [in] the area. Putting all these puzzle pieces together, you need to find a balance that is not as easy ... [including] having the basic needs of living for individuals ... meeting your obligations on the international platform, along with finding the domestic potential financing for projects.’

In 2007/2008, a severe drought in the region decimated crops. The wheat harvest in Syria fell to less than half of the previous year’s production, in Jordan cattle declined to 600,000 from one million (Brown and Crawford 2009: 22). Then came the anti-government protests in 2011, which very quickly escalated to a full-scale civil war in Syria. According to Human Rights Watch, over 400,000 people have died in the conflict, with 5 million fleeing abroad and an additional 6 million internally displaced (Human Rights Watch *nd*). Jordan has been pressured to accept more and more refugees despite concerns over its own security (BBC 2016).

Today, Jordan’s annual average water supply is 150 cubic metres per person, much less than the UN criteria stating the need for countries to have at least 500 cubic metres per person (Arsenault 2017). In a country already suffering from serious water shortages, the impacts of climate change combined with the growing population threaten to overwhelm Jordan (Brown and Crawford 2009: 11). To compound the problem even further, the conflict in Syria has disrupted the water management system in the Yarmouk-Jordan River system (Arsenault 2017).

For the Jordanian Ministry of Environment, climate change is an umbrella term that can be used to tackle different issues and projects, incorporating adaptation and mitigation issues into actual policies and programmes across ministries (Kisbi interview 2018). According to Dina Kisbi (interview 2018), the Syrian conflict puts a halt to these cross sectoral projects: ‘You can’t speak to the ministry of planning, saying that you need to put climate change as a priority while they have the Syrian refugee crisis.’ Jordan has been proactive in its adaptation and even mitigation targets, pledging to decrease GHG emissions by 14 per cent, which, for a country that only contributes 0.06 per cent to total global emissions, is considerable (Ibid.). They have been attempting to attract outside financing and firms to invest in Jordan. As a country that imports 97 per cent of its energy needs, these projects could help stabilise the country. One of the issues for Jordan is its position in the ‘hot zone.’ Although Jordan has been relatively stable, an outside investor perspective sees Jordan as being surrounded by Iraq, Syria, Palestine, and Lebanon. As a result, big industry has stayed away (Kisbi interview 2018) further adding strain on an already taxed economic and political situation.

The civil war in Syria has had unintended consequences on climate action and policy in the region. The Levant has had a history of water-related conflicts. As mentioned in the beginning of this section, it is important to understand how the intricacies that climate change can add to conflict and movements of peoples. Conflict in Syria has been a series of complex interrelated factors, such as socio-political tensions and civil unrest looking for political reform. Another factor was the 2007-08 drought, which played a role in the economic deterioration in Syria (Gleick 2014: 331). The drought itself was not uncommon in the region. However, the humanitarian crisis that ensued was, and it was the government’s response (or failure to respond) that led to the uprising in the rural affected parts of the country (de Châtel 2014: 522). However, for Jordan, whether equating the drought with political instability in the region (Gleick 2014: 338) or seeing the dangers in overstating the importance of climate change in the conflict (de Châtel 2014: 522), their own climate change problems have been exacerbated by the influx of refugees coming from Syria. As Dina Kisbi (interview 2018) stated

‘We see the Syrian refugee problem; we try to help as much as we can. But we can’t forget that that is a huge number of people in a country with very limited ... resources or income that can be directed towards [the issue] ... We try to solve all issues that are related to our friends and our families, Syrian families, because whatever happened, it’s unfair and ... we’re trying to help everyone as much as we can.’

Climate change as a threat-multiplier

In the Paris Agreement security is only mentioned once, in relation to food security. As we have seen in the four previous sections, climate change is a security issue for multiple reasons: exacerbating existing conflicts, creating new tensions between communities, forcing people to leave their traditional home in search of fertile land. Many of the European Commission's member states have been among those countries that have asked for climate change to be included on the agenda of the UN Security Council. For the EU, climate change is a threat multiplier. It can accentuate situations of distress relating to scarcity of natural resources or conflict situations by amplifying the problems. This includes mass movement of people in Africa (eg Darfur), which can partially be attributed to climatic circumstances creating pressure points that have moved people towards cities and/or borders. These movements of people have become uncontrollable (Anonymous 3 interview 2018; Bardram interview 2018).

In November 2017, as negotiators from all over the world – including the US – descended on COP23 to continue discussing how the Paris Agreement will be operationalised, the US House and Senate Armed Service Committees were finishing negotiations of their own. In the *National Defense Authorisation Act for Fiscal Year 2018 Report* released following the conference, former US Secretary of Defence James Mattis stated

'I agree that the effects of a changing climate – such as increased maritime access to the Arctic, rising sea levels, desertification, among others – impact our security situation' (GoUS 2017: Sec 335).

This was corroborated by Former Chief of Staff of the US Army, Gordon Sullivan, who stated

'Climate change is a national security issue. We found that climate instability will lead to instability in geopolitics and impact American military operations around the world' (GoUS 2017: Sec 335).

The White House has affirmed that it will abide by the four year exit process of the Paris Agreement, which means that it will not officially withdraw from the agreement before 2020. Regardless, the US Armed Services recognise climate change as 'a direct threat to the national security of the United States [that] is impacting stability in areas of the world both where the United States Armed Forces are operating today, and where strategic implications for future conflict exist' (GoUS 2017: Sec 335). By understanding that as the climate continues to change rapidly, certain countries and/or regions will not be able to 'respond, cope with, or adapt' in time, which could lead to instability and the potential for 'more failed states, which are breeding grounds of extremist and terrorist organizations' (Ibid.).



Activists at the COP22 UN climate conference in Marrakesh, Morocco, demand protection for people and communities displaced by climate change November 10, 2016. Photo by Ryan Rodrick Beiler / Shutterstock.com

This was not the first time that the US recognised climate change as a threat multiplier. In October 2003, the Pentagon commissioned a study entitled ‘An Abrupt Climate Change Scenario and Its Implications for United States National Security.’ The report linked food shortages, declining fresh water and disrupted access to energy to the destabilisation of the regional and world order (Schwartz and Randall 2003: 2). They note that in countries such as India, South Africa and Indonesia, that are already experiencing conflict, climate change has the potential to destabilise an already volatile situation (Ibid.: 19).

‘Violence and disruption stemming from the stresses created by abrupt changes in the climate pose a different type of threat to national security than we are accustomed to today. Military confrontation may be triggered by a desperate need for natural resources such as energy, food and water rather than by conflicts over ideology, religion, or national honor’ (Schwartz and Randall 2003: 14).

This report, commissioned by Andrew Marshall, who served as director of the United States Department of Defence’s (DoD) Office of Net Assessment (ONA) from 1973 to 2015, was deemed too politically controversial for US government officials at the time. The decision of the ONA to commission a report of this nature suggests that the military understood that the US government would need to include climate change in its national security planning (Shearer 2005: 461). Indeed, it was followed by a number of studies linking climate and security issues (Umbach 2012: 380). One such study, ‘The Security Challenges of Climate Change’ warned the effects of climate change could be self-perpetuating in developing countries as

‘water shortages can lead to food shortages, which can lead to conflict over remaining resources, which can drive human migration, which can create new food shortages in new regions’ (Podesta and Ogden 2008: 116)

Another study, ‘The Age of Consequences,’ highlighted that climate change was already exacerbating conflicts.

‘[The] magnifying of existing problems by climate change is already taking place, from desertification in Darfur, to water shortages in the Middle East, to disruptions of monsoons in South Asia and attendant struggles over land and water use.’ (Campbell et al 2007: 8)

They expect the number of conflicts to multiply in the future.

In 2014, the US DoD released its Quadrennial Defence Review, in which it clearly outlined that climate change poses significant security challenges for the US as well as



US Navy boat in Djibouti. Photo by Vladimir Melnik / Shutterstock.com

globally. A US government report (GoUS 2014: 8) stated that with temperatures rising around the world and extreme weather events becoming more commonplace, combined with increased urbanisation as well as economic growth in the emerging markets (Brazil, China, India),

‘[t]he pressures caused by climate change will influence resource competition while placing additional burdens on economies, societies, and governance institutions around the world. These effects are threat multipliers that will aggravate stressors abroad such as poverty, environmental degradation, political instability, and social tensions – conditions that can enable terrorist activity and other forms of violence’.

A decade ago, the 2008 National Security Strategy of the United Kingdom (UK) claimed that ‘climate change is potentially the greatest challenge to global stability and security, and therefore to national security’ (GoUK 2008: 18). The UK government also recognised climate change as a threat multiplier, which is only likely to become more prevalent in the years ahead, while having a disproportionate impact on the developing world (GoUK 2010: 17).

For the European Union, the nexus between climate change and security has received increasing attention in recent years. In 2008, a paper from the High Representative and the European Commission to the European Council entitled ‘Climate Change and International Security’ was produced (Bardram interview 2018). From the outset, it highlighted that ‘[c]limate change is best viewed as a threat multiplier which exacerbates existing trends, tensions and instability’ (EU 2008: 2). Interestingly, it not only understood that climate change exacerbates issues in countries that are already prone to conflict, but also that the political and security risks associated with climate change will directly affect European interests (ibid.). In other words, it is in the interest of the EU countries to address the global effects of climate change.

Elina Bardram, Head of Unit for International and Inter-institutional Relations in the Directorate-General on Climate Action for the European Commission, stated

‘Climate change is a threat multiplier. It can accentuate situations of distress relating to scarcity of natural resources or conflict situations over natural resources by amplifying the problems. There are lots of studies regarding the mass movement of people in Africa – in Darfur, even in Syria – that attribute partial cause to the climatic circumstances that have prevailed and then led to these pressure points that have moved people towards cities, towards borders and has become uncontrollable ... It can be among the root causes of climate induced people movements and it’s definitely something that has to be increasingly factored in to different early warning systems, which is something that the European Commission and our external action service are very committed to’ (Bardram interview 2018).

Within global climate negotiations, talk of security threats around climate change is kept minimal. Although the negotiators are aware of the importance of understanding climate change as a threat multiplier related to issues of security, the negotiations are firmly focused on mitigation and adaptation measures, as well as the technical and financial aspects around action on climate change. However, both the European Commission and US DoD have had climate security in their national directives for at least a decade.

The EU works with partner countries to understand regional climate change and security issues – identifying ‘hot spots’ as well as different approaches, collaborations, cultural or national sensitivities, as well as disaster management and reduction that need to be incorporated into EU policies, so that they become part of the DNA of EU humanitarian assistance (Bardram interview 2018). While the EU works with all countries, the focus on climate change and security is on the most vulnerable.

‘If you look at Pakistan for instance ... extreme weather events have led to mass movements ... It’s not always attributed to climate change ... but climate change is certainly among the root causes in many cases and it is an amplifier, accentuating, [a] threat multiplier we often say. In the context of our last Foreign Affairs Council conclusions ... this nexus which again recognises an area of increased importance and increased attention in terms of our political dialogues, partner countries [and how at the] European level we consider our strategies’ (Bardram interview 2018).

As I have argued throughout this paper, climate change is affecting the very social, economic and cultural aspects of communities and countries. Peter Tarfa (interview 2018)

noted that the North East of Nigeria has seen intensified insurgencies, which is exacerbated as people move to different areas of the country. Additionally, the Nigerian government is also aware of increased cross-border migration from Chad, Cameroon and Niger, which have increased conflict in already troubled zones. As a threat multiplier, climate change exacerbates already volatile conflict in fragile states.

Somalia, in particular, has faced severe challenges. In October 2017, a devastating blast ripped through the centre of Mogadishu. Killing over 350 people, it was the deadliest bomb in Somalia’s history. The perpetrators, al-Shabaab, a jihadist fundamentalist group based in East Africa, also claimed responsibility for the mass shooting at Garissa University and in Nairobi’s Westgate Mall in recent years. Since the ousting of the military regime led by Siad Barre in 1991, Somalia fell into a decades-long civil war. The Somali famine of 2011 resulted in a significant increase in refugees in Djibouti, Ethiopia, and Kenya, as well as an estimated 1.5 million people internally displaced (Ferris and Petz 2011; Ferris 2012). These refugee camps have become recruiting centres for groups like al-Shabaab. We are only beginning to understand the link between this devastation and climate change. By seeing climate change as a threat multiplier allows us to identify underlying causes that have exacerbated conflict and enabled the rise of terrorist activities in parts of Africa.

Finally, climate change has the potential to create new international security issues far into the future. In the last 10 years, the Arctic has experienced some of the most rapid climate changes on earth, almost twice the global average. As the Arctic melts, various stakeholders have recognised the potential to unlock the vast tracts of petroleum not to mention opening up the Arctic seaway to international traffic. Climate change has propelled the region into the centre of geopolitics, as commercial interests clash with environmental and security concerns. With the potential for the North West Passage and Northern Sea Route to open up (Dittmer et al 2011: 203), along with the potential for the Arctic to become ice-free in the summer months, questions around sovereignty and legal rights of both state and non-state actors have begun to surface. In 2014, the US Military Advisory Board (MAB) released a report that highlighted that in the future as ‘a warming planet affords increased access to the Arctic, the MAB cannot rule out new disputes arising over natural resource exploration and recovery, fishing, and over future shipping lanes’ (MAB 2014: 19). Climate change and security are now part of the US DoD lexicon. As the frequency and complexity of global security concerns become more common, climate change policy can be seen as a tool for governments to tackle security issues.

Conclusion

Conveying the severity of security threats when broaching the subject of climate change has been challenging. For many, understanding that rising temperatures, coastal erosion, extreme weather events, or even crop failure can have a direct link to security is difficult to grasp. Without feeling direct impact, making people or countries take action on climate change has been an uphill task. Within the global climate regime, simply look at some of the most vocal countries – Tuvalu, Philippines, Maldives – to understand that it is those in imminent danger of disappearing or repeatedly being hit by hurricanes or typhoons that have been pleading with the larger economies to take mitigation action on climate change. This paper has highlighted the plight of certain peoples, communities and countries in order to demonstrate the clear link between climate change and security.

The Paris Agreement, based on mandatory (but voluntary) country submissions, is certainly not perfect, but arguably better than no agreement at all. Indeed, considering developing country groups had criticised previous draft texts as ‘at best, a weak attempt to a compromise text, rather than a text that could serve as a basis for negotiation’ (AGN 2015) it was a surprise to many that any consensual agreement at all was made. The Trump Administration’s withdrawal from the Agreement should not have come as a surprise to anyone following the global climate change regime. Since its inception in the late 1980s, the US has always obstructed any notion of binding emission targets (Cléménçon 2010; Cléménçon 2016; Leggett 2001). At the suggestion by the US that the Paris Agreement could be renegotiated, Italy, Germany and France released a rare joint-statement reaffirming that the ‘Paris Agreement cannot be renegotiated since it is a vital instrument for our planet, societies and economies.’

Although Trump has stated that the US is to immediately cease implementing their NDCs, stopping all federal resources towards meeting carbon emissions targets, other actors both inside and outside the US – countries, US state governors, mayors, and even industry – have affirmed their commitment to the pledges made in Paris. During both COP23 and COP24, the US essentially had two delegations in attendance. The official delegation continued to play a role in the UNFCCC negotiations and, while less vocal than they had been in the past, still managed to scupper attempts to put the latest IPCC report at the heart of the negotiations. However, there was a second unofficial delegation, representing the #WeAreStillIn movement. In 2017, this delegation, led by California governor Jerry Brown and former New York City mayor Michael Bloomberg launched ‘America’s Pledge.’ This pledge unites private and public sectors to ensure that the US upholds the objectives set out in the Paris Agreement.

As for military planning, the US DoD clearly outlined that ‘climate change is a direct threat to the national security of the United States and is impacting stability in areas of the world both where the United States Armed Forces are operating today, and where strategic implications for future conflict exist’ (GoUS 2017: Sec.335). The US military understands that globally we cannot afford uncertainty around climate security. As retired General Gordon Sullivan stated

‘People are saying they want to be perfectly convinced about climate science projection ... But speaking as a soldier, we never have 100 per cent certainty. If you wait until you have 100 per cent certainty, something bad is going to happen on the battlefield’ (Conca 2014).

As explored throughout this paper, for developing countries, in particular countries in Sub-Saharan Africa and the small island states, global action on climate change is urgent. While many developed countries like to avoid notions of climate justice and differentiated responsibilities, the reality for the most vulnerable countries is that supranational policy is crucial if they are able to tackle the climate challenge at home. Trump’s withdrawal from the Paris Agreement is not automatic; in fact, the four-year period it will take for the US to pull out of this treaty could see a change in leadership in the White House. However, the \$3 billion the US had pledged to the Green Climate Fund, a fund created to help developing countries implement their own NDCs, has been halted, which could drastically affect climate policy implementation in many impoverished countries.

Operationalisation of the Paris Agreement is set to begin in January 2019. For many developing countries, finance is crucial to implementing their climate strategies. In the Paris Agreement, Article 9 specifies that developed country parties provide financial resources to developing countries for both mitigation and adaptation measures (UN 2015: 25). In fact, there are four different financial mechanisms to enable developing countries to access funds: The Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF), the Green Climate Fund (GCF) and the Adaptation Fund (UN *nd*). The Paris Agreement also noted that these financial resources will need to be ratcheted up if the country-driven climate strategies are to be effectively implemented, particularly, in the least developed countries and small island developing states (UN 2015: 26). The norms and standards set in the global climate regime will have an impact on the adaptive capacity of developing countries. However, although the Paris Agreement does lay out the framework in which climate finance needs to be scaled up, it stops short of going into the specifics of how this should be achieved. It has been recognised that if developing countries are to make any

progress on mitigation targets, the target of \$100 billion annual finance by 2020 will need to be met (Farid et al 2016: 6). The ability for these international norms and standards to trickle down to the most vulnerable in society still remains to be seen. As such, environmental migrants continue to be an issue in many parts of the world.

Whether talking about food security, water shortages, rising temperatures, or extreme and unpredictable weather patterns, links are being made between a changing climate and security. And it is truly a global problem. Emissions produced in the US lead to melting the icecaps in the Arctic, which in turn is detrimental to Pacific Island States. It is important that the global climate regime is able to meet the promises made in Paris. The latest IPCC report released in October 2018 states that we have 12 years to wean ourselves off fossil fuels if we are to limit the impacts of climate change. For many, it is already too late. As UN Secretary General Antonio Guterres stated during the last international climate conference: 'We face a direct existential threat. Climate change is moving faster than we are ... If we do not change course by 2020, we risk

missing the point where we can avoid runaway climate change, with disastrous consequences for people and all the natural systems that sustain us' (UNSG 2018). Climate change plays an increasingly important role in discussions of security. Although a relatively new field, comprehensive strategies are needed to respond to climate-induced security threats and geopolitical (in)stability both nationally and around the world. The Paris Agreement was a good first move in pushing countries to commit to curbing emissions and drafting climate adaptation action plans. We are now waiting for the global climate regime to step up to the plate and turn pledges and promises into concrete action. At COP24 Katowice, Former President of the Maldives and Chair of AOSIS, Mohamed Nasheed, made an impassioned plea to the international community to make urgent commitments to reduce global carbon emissions stating

'We are not prepared to die ... We are not going to become the first victims of the climate crisis ... We Maldivians are a nation of survivors. And we will do everything we can to ensure the survival of our country. But we can only survive as a nation if we also survive as a planet' (Nasheed 2018).



The 48th sessions of the UNFCCC Subsidiary Body for Implementation (SBI) and Subsidiary Body for Scientific and Technological Advice (SBSTA) at the World Conference Centre Bonn

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