

Does the Principle of Common But Differentiated Responsibilities and Respective Capabilities Facilitate Distributive Justice in Adaptation Finance for the Pacific Region?

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ABSTRACT

Developing states in the Pacific region shoulder an unfair burden of the climate crisis. Exposed geographies and developing economies endanger states in this region by hampering their ability to adapt to threats that include rising seas and intensified weather events. In an unfair twist, many states in the Pacific region bear minimal responsibility for the drivers of the climate crisis given their historically low contributions to greenhouse gas emissions. Without the economic benefits of industrialisation, the region's economies are ill-suited to weathering the financial stress of adaptation. Their situation is in stark contrast to the emissions-intensive economies of developed states that makes them primarily responsible for and well placed to manage the climate crisis. Cognizant of this disproportion, the principle of Common But Differentiated Responsibilities and Respective Capabilities has been embedded into the international laws regulating climate change to redistribute inequalities between the global divide through differentiating legal obligations. In the context of adaptation, this means mandating the flow of finance from developed states to vulnerable states, such as those in the Pacific region, in a just manner that overcomes resource and wealth disparities.

This paper examines whether CBDR-RC has shaped the legal framework of adaptation finance to promote distributive justice through correcting economic disparities. A doctrinal approach is applied to identify the key legal provisions regulating adaptation finance followed by consideration of the underpinning policies to highlight flaws in the distribution of adaptation finance. Human geographies and scientific scholarship are drawn on to illustrate diverging policy bases for the concept of vulnerability. The paper analyses how an ambiguous usage of vulnerability is embedded in law and the effect that this has on allowing the distribution of finance to preference physical vulnerability over the underlying economic, social, and institutional causes of vulnerability. The ambiguity in the definition of vulnerability is argued to undermine the ability of law to facilitate the just distribution of adaptation finance to those in the Pacific region that need it most.

STATEMENT OF ORIGINALITY

This work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

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LIST OF ACRONYMS AND ABBREVIATIONS

CBDR-RC	Common But Differentiated Responsibilities and Respective Capabilities
Climate Change Regime	<i>UNFCCC, Katowice Rulebook, Kyoto Protocol, Paris Agreement</i> , and decisions by the COP
COP	Conference of the Parties to the UNFCCC
GEF	Global Environment Facility
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
LDCF	Least Developed Countries Fund
NAPA	National Adaptation Plan of Action
ND-Gain Index	Notre Dame Global Adaptation Initiative's index
Pacific States	Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, the Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, the Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCCF	Special Climate Change Fund
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

1. INTRODUCTION

Financing the costs of adaptation in the Pacific region is a pressing issue given that a serious degree of climate change appears inevitable. Even if warming is limited to 1.5°C, states in the Pacific region are still at the frontline of climate change's existential threats. The International Governmental Panel on Climate Change's (IPCC) Special Report on Global Warming of 1.5°C finds with high confidence that sea-level rise will still occur,¹ and that a multi-metre rise is likely.² The IPCC has high confidence that with 1.5°C of warming, states in the Pacific region with small islands and low-lying coastal areas will experience saltwater intrusion, flooding, and damage to infrastructure.³ The occurrence of these threats will be devastating for the food and water security, economies, safety and livelihood of many in the Pacific region. In this context, it is essential that support for adaptation is channelled to assist Pacific States that are particularly vulnerable to the adverse effects of climate change.

This research focuses on the disbursement of adaptation finance to support adaptation measures in developing states in the Pacific region that are signatories to the United Nations Framework Convention on Climate Change (UNFCCC).⁴ The research is theoretical and seeks to produce analytical evaluations on the principles that influence adaptation finance. In this respect it is outside the scope of the paper to consider the more procedural aspects of adaptation finance, such as the day-to-day operations of boards and the lifecycle of project applications. Adaptation refers to measures taken to reduce vulnerability and increase resilience to the adverse effects of climate change. Developing states in the Pacific Region are uniquely vulnerable to and are already experiencing climate change's adverse effects.⁵ They comprise the Cook Islands, the Federated States of Micronesia, Fiji, Kiribati, the Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, the Solomon Islands, Timor-Leste, Tonga, Tuvalu and Vanuatu (collectively referred to as the **Pacific States**).⁶ These states are captured by what the IPCC refers to as "small islands" which are located in the southern and western regions of the Pacific Ocean.⁷

¹ Valérie Masson-Delmotte, Panmao Zhai, Hans-Otto Pörtner, Debra Roberts, James Skea, Priyadarshi Shukla, Anna Pirani, Wilfran Moufouma-Okia, Clotilde Péan, Roz Pidcock, Sarah Connors, Robin Matthews, Yang Chen, Xiao Zhou, Melissa Gomis, Elisabeth Lonnoy, Thomas Maycock, Melinda Tignor, and Tim Waterfield (eds), 'Special Report: Global Warming of 1.5°C: Summary for Policymakers' (Intergovernmental Panel on Climate Change, 2018), 5.

² Ibid 7.

³ Ibid 8.

⁴ *United Nations Framework Convention on Climate Change* open for signature 4 June 1992, 1771 UNTS 107 (entered into force 21 March 1994).

⁵ Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2020) V.

⁶ United Nations Treaty Collection, 'Status of the United Nations Framework Convention on Climate Change' (14 November 2020) <https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXVII-7&chapter=27&Temp=mtdsg3&clang=en>.

⁷ Leonard Nurse, Roger McLean, John Agard, Lino Briguglio, Virginie Duvut-Magnan, Netatua Pelesikoti, Emma Tompkins and Arthur Webb, 'Small Islands' in Christopher Field, Vicente Barros, David Dokken, Katherin Mach, Michael Mastrandrea, Eren Bilir, Monalisa Chatterjee, Kristie Ebi, Yuka Estrada, Robert Genova, Betelhem Girma, Eric Kissel, Anderw Levy, Sandy MacCracken, Patricia Mastrandrea and Leslie White (eds) *Climate Change 2014: Impacts, Adaptation, and Vulnerability* (Intergovernmental Panel on Climate Change, 2014) 1618.

1.1. Vulnerability in the Pacific region

Many Pacific States bear nominal responsibility for climate change, have little capacity to cope with its adverse effects, and are located in a region that is susceptible to many of the physical threats posed by climate change.⁸ The risks posed to Pacific States by climate change far outweighs their responsibility for human induced warming. While the Pacific States are only responsible for a nominal 0.03 percent of global greenhouse gas (GHG) emissions, they are some of the most at-risk states to sea level rise, extreme weather events, coral bleaching, ocean acidification, water insecurity and food insecurity.⁹ However, it is commonly argued that on a per capita basis, small island states, including Pacific States, receive disproportionately high disbursements of adaptation finance when compared to other states.¹⁰ This argument, often used to justify the prioritisation of adaptation finance elsewhere, is misleading. The IPCC states that despite accounting for a fraction of projected global losses caused by sea-level rise, the damage that will be suffered by small island states “is enormous in relation to the size of their economies”¹¹ The high per-capita disbursement of adaptation finance is reflective of the cost of mobilising finance in a remote region that is disconnected from major global markets.¹² For example, the nearest major port to Samoa, Tonga, Kiribati and the Marshall Islands is over 3500kms away.¹³ Further, the geography of volcanic and mountainous islands, such as those of Vanuatu, makes it expensive to link infrastructure networks.¹⁴ Both these factors contribute to an increased costs of goods transportation and service delivery in the region.¹⁵

In its Fifth Assessment Report, the IPCC advises that Pacific states are highly vulnerable to both climate and non-climate related stresses.¹⁶ Their remote geographic location is particularly exposed to many natural hazards. Sitting along the “ring of fire” means many Pacific States are at a risk of earthquakes and volcanic eruptions. The mostly tropical climate of the region means many Pacific States are exposed to extreme weather events driven by the El Nino South Oscillation patterns and exacerbated by climatic variation.¹⁷

⁸ See generally Lalit Kumar, Sadeeka Jayasinghe, Tharani Gopalakrishnan and Patrick Nunn, ‘Climate Change and the Pacific Islands’ in Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2020).

⁹ A Gero, K Méheux and D Dominey-Howes, ‘Integrating Community Based Disaster Risk Reduction and Climate Change Adaptation: Examples from the Pacific’ (2011) 11(1) *Natural Hazards and Earth System Science* 101, 101 ; Kumar et al (n 7).

¹⁰ Jale Samuwai and Jeremy Maxwell Hills, ‘Gazing over the Horizon: Will an Equitable Green Climate Fund Allocation Policy Be Significant for the Pacific Post-2020?’ (2019) 25(1and2) *Pacific Journalism Review: Te Koakoa* 158, 161.

¹¹ Nurse et al (n 7) 1618.

¹² Samuwai and Hills (n 10) 161.

¹³ Lalit Kumar, Tharani Gopalakrishnan and Sadeeka Jayasinghe, ‘Impacts of Climate Change on Coastal Infrastructure in the Pacific’ in Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2020) 275.

¹⁴ Ibid 276.

¹⁵ Ibid 275-276.

¹⁶ Nurse et al (n 7) 1618.

¹⁷ Pd Nunn, ‘Responding to the Challenges of Climate Change in the Pacific Islands: Management and Technological Imperatives’ (2009) 40 *Climate Research* 211 ; Kumar et al (n 8).

While there is diversity in the climate and geographies of Pacific States that create different levels and experiences of vulnerability, all of these states are particularly at risk of sea-level rise.¹⁸

Sea-level rise is a Pacific wide threat as the majority of urban centres and subsistence communities in the region are located in coastal areas, many of which are low-lying.¹⁹ The threat of sea-level rise has long been recognised, with early projections of as little as a 32cm rise predicting devastation to ecosystems that many depend on for subsistence and income.²⁰ Already, 11 islands in the Solomon Islands and several in the Federates States of Micronesia have been submerged.²¹ Sea-level rise poses an existential threat to Pacific States, and more recent predictions are that by 2050 some 1.7 million people will be forcibly displaced, becoming environmental refugees.²²

The IPCC's Fifth Assessment Report emphasises the vulnerability of small island states to non-climate stresses.²³ It posits that greater benefits can be drawn from adaptation measures that not only address the physical hazards of climate change, but tackle "critical social and economic" issues.²⁴ These critical issues refer to problems such as poverty, gender inequality and limited institutional and governance capacities.²⁵ They comprise what many term the underlying causes of vulnerability that dictate the ability of a community to respond and adapt to climate change.²⁶

For Pacific States, the underlying drivers of vulnerability include demographic and economic factors such as a dependence on subsistence agriculture and tourism.²⁷ Take for example Vanuatu, where the economy is split between an urban market economy and a subsistence economy.²⁸ Both are vulnerable to natural hazards, with cyclones disrupting the tourism dependant urban economy and damaging the crops relied on by those living subsistence livelihoods.²⁹ Extreme weather events can devastate subsistence agriculture

¹⁸ Savin S. Chad, 'Climate Change Scenarios and Projections' in Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2020); Ibid.

¹⁹ Ibid 181-183; Gero, Méheux and Dominey-Howes (n 9) 102; Nunn (n 17).

²⁰ Kumar et al (n 8) 13.

²¹ Ibid 5; Simon Albert et al, 'Interactions between Sea-Level Rise and Wave Exposure on Reef Island Dynamics in the Solomon Islands' (2016) 11(5) *Environmental Research Letters* 054011; Patrick D Nunn, Augustine Kohler and Roselyn Kumar, 'Identifying and Assessing Evidence for Recent Shoreline Change Attributable to Uncommonly Rapid Sea-Level Rise in Pohnpei, Federated States of Micronesia, Northwest Pacific Ocean' (2017) 21(6) *Journal of Coastal Conservation* 719.

²² Kumar et al (n 8) 5.

²³ See Nurse et al (n 7).

²⁴ Ibid 1616.

²⁵ Ibid 1618.

²⁶ See PM Kelly and WN Adger, 'Theory and Practice in Assessing Vulnerability to Climate Change And Facilitating Adaptation' 29; W Neil Adger, 'Approaches to Vulnerability to Climate Change' (Working Paper GEC 96-05, Centre for Social and Economic Research on Global Environment, 1996) 66.

²⁷ Gero, Méheux and Dominey-Howes (n 9) 102.

²⁸ Johanna Nalau, John Handmer and Malcom Dalesa, 'The Role and Capacity of Government in a Climate Crisis: Cyclone Pam in Vanuatu' in Walter Leal Filho (ed) *Climate Change Adaptation in Pacific Countries: Fostering Resilience and Improving the Quality of Life* (Springer, 2017) 151-152.

²⁹ Ibid.

and the remoteness of these communities creates challenges for recovery efforts.³⁰ The experience of Vanuatu is common across many Melanesian Pacific States, with at least 80 per cent of the populations of Vanuatu, Papua New Guinea and the Solomon Islands leading subsistence lifestyles dependant on fishing and farming for food and income.³¹

The low socioeconomic status of many communities within the Pacific region is a further driver of vulnerability. While data on poverty rates is unavailable for many Pacific States, the available data does indicate that poverty rates are alarmingly high for Fiji (35 percent of households), Papua New Guinea (28 percent of households) and the Marshall Islands (over 50 percent of households).³² The socioeconomic experiences of struggling economies is often where vulnerability to natural hazards begins. For instance, poor income often equates to “low-quality houses, which are often unable to withstand cyclones, flooding, high winds and storm surges.”³³ The struggling economies of many Pacific States has also resulted in risks to healthcare, with high rates of infectious and lifestyle diseases.³⁴ With already poor healthcare infrastructure, the occurrence of extreme weather events can be devastating. As an example, in 2015 Cyclone Pam destroyed almost all healthcare facilities on the most affected province in Vanuatu.³⁵

There are also cultural factors that place many in the Pacific Region in particularly vulnerable positions.³⁶ For example, the traditional social system of Vanuatu, called “Kastom”, has led to gender inequality for some women as they are often excluded from decision-making.³⁷ Under this patriarchal system, the role of women is often “restricted to cooking, cleaning and fundraising.”³⁸ This traditional system has led to lower literacy levels of some women, which limits their ability to prepare for and adapt to climate change and natural hazards.³⁹ As a result, when physical hazards like cyclones occur, women have a disproportionately lower capacity to respond and adapt than men.

The unique vulnerability of Pacific States, together with their nominal contributions to global greenhouse GHG emissions, means the disbursement of adaptation finance to the region is an urgent matter of

³⁰ See Frank Wickham, Jeff Kinch and Padma Narsey Lal, *Institutional capacity within Melanesian countries to effectively respond to climate change impacts, with a focus on Vanuatu and the Solomon Islands* (Secretariat of the Pacific Regional Environment Programme, 2009).

³¹ Satish Chand, ‘Economic Impacts and Implications of Climate Change in the Pacific’ in Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2020) 482; Nalau et al (n 28) 151.

³² Chand (n 31) 486.

³³ Lalit Kumar, Tharani Gopalakrishnan and Sadeeka Jayasinghe, ‘Population Distribution in the Pacific Islands, Proximity to Coastal Areas and Risks’ in Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2020) 296.

³⁴ Chand (n 31) 486.

³⁵ Kumar et al (n 8) 18.

³⁶ See for example, Ben Wisner, Piers Blaikie, Terry Cannon and Ian Davis, *At Risk: Natural hazards, people’s vulnerability and disasters* (Routledge, 2nd ed, 2003) 35.

³⁷ See, for example, Heather Wallace, ‘Paddling the canoe on one side: women in decision-making in Vanuatu and the Solomon Islands’ (2011) 54(4) *Development* 505.

³⁸ Martin Pritchard, *Ex-Post Evaluation Report – Vanuatu NGO Climate Change Adaptation Program* (Oxfam Australia, 2017) 17.

³⁹ Simon Bradshaw and Nic Maclellan, *Lessons from the Vanuatu NGO Climate Change Adaptation Program* (Oxfam Australia 2015) 27, 30.

distributive justice. Access to adequate flows of adaptation finance is imperative for these states, given the escalating costs of adaptation and the existential threat posed by sea-level rise. However, there is a growing gap between actual flows of finance and the cost of adaptation in the region. Between 2010 and 2016, only US\$26 million was disbursed by the Adaptation Fund and US\$68 million by the Green Climate Fund to Pacific States. In contrast, the costs of adaptation are high, with some studies estimating the cost to implement National Adaptation Plans of Action to be between US\$290-530 million.⁴⁰ These costs will only rise if, as projected, we fail to limit global warming to 1.5 °C.⁴¹

1.2. The legal response

The international laws that govern the global response to climate change oblige developed states to assist vulnerable developing states in meeting the costs of adaptation. These laws include the *UNFCCC*, the *Paris Agreement*,⁴² and the various decisions made by the Conference of the Parties to the *UNFCCC* (**COP**) (collectively, the **Climate Change Regime**). These laws include many of the general principles of international environmental law, including the principle of Common But Differentiated Responsibilities and Respective Capabilities (**CBDR-RC**).

Many Pacific States will bear the brunt of the adverse effects of climate change despite being nominally responsible for GHG emissions and lacking the financial capacity to adapt. This unfair burden is recognised by the legal principle of CBDR-RC which seeks to differentiate the onus of obligations and commitments in the Climate Change Regime. The principle seeks to guide the specific obligations and commitments pertaining to adaptation that developed states contribute to the raising of adaptation finance that is distributed to developing states on the basis of vulnerability. This paper argues that the principle of CBDR-RC calls for distributive justice to be embedded into the disbursement of adaptation finance. Distributive justice refers to the allocation of wealth and resources in a manner that alleviates inequalities by targeting the least advantaged.⁴³ In the context of adaptation finance, distributive justice is about prioritising disbursements to the states that are most vulnerable to the adverse effects of climate change.⁴⁴

Under the auspices of the Climate Change Regime, numerous funding mechanisms have been created to facilitate much needed financial assistance for developing states for adaptation. Many Pacific States rely heavily on these mechanisms due to their geophysical vulnerability to climate change and their limited

⁴⁰ Will McGolderick, *Financing Adaptation in Pacific Countries, Prospects for the Post-2012 Climate Change Regime* (2007) 14 *Australian International Law Journal* 45, 49.

⁴¹ See Nurse et al (n 7) 945.

⁴² Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on Its Twenty First session, held in Paris from 30 November to 13 December 2015— Addendum — Part 2: Action taken by the Conference of the Parties at its Twenty First Session*, UN Doc FCCC/CP/2015/10/Add.1 (29 January 2016), Decision 1/CP.21 ‘Adoption of the Paris Agreement’ (‘Paris Agreement’).

⁴³ Marco Grasso, *Justice in Funding Adaptation under the International Climate Change Regime* (Springer Netherlands, 2010) 34.

⁴⁴ *Ibid* 6.

economic and institutional capacities to implement adaptation measures.⁴⁵ To ensure that Pacific States can respond to the existential threats of climate change, such as sea-level rise, these financial mechanisms must distribute finance in a manner that prioritises their needs.

However, the mechanism for prioritising disbursements of finance, being levels of vulnerability, is unclear at law.⁴⁶ There is no precise definition of vulnerability in the Climate Change Regime and it has been left open for the boards of climate funds to determine how, if at all, disbursements should be prioritised. The flexibility delegated to funds allows them to choose how to frame vulnerability. On the one hand, the risk-hazard approach can be adopted that preferences states with a high risk of economic loss to the physical threats of climate change. On the other hand, the human security approach can be utilised, which prioritises states that lack the economic and institutional means to adapt climate change's adverse effects. The choice of framing will have profound effects on whether finance is prioritising Pacific States rather than their larger Asian neighbours that, while exposed to the physical threats of climate change, have significantly stronger economic and institutional capacities to adapt.⁴⁷

1.3. Research question and structure

Against this background, the primary research question that is addressed is: Does the principle of CBDR-RC facilitate distributive justice in adaptation finance for Pacific States? To investigate this question, this study will consider the following four sub-questions:

1. Has the principle of CBDR-RC shaped the legal framework for adaptation finance?
2. Does the principle of CBDR-RC call for distributive justice in adaptation finance?
3. How does the Adaptation Fund frame vulnerability?
4. Does adaptation finance achieve distributive justice for vulnerable Pacific States?

The paper first examines the development of the legal principles and specific commitments and obligations contained in the Climate Change Regime that apply to adaptation finance. This section focuses on the provisions most relevant to the normative idea of distributive justice in the context of adaptation finance and will assess the extent to which those provisions are drafted with provision and mandating force. The

⁴⁵ See generally Samuwai and Hills (n 10); Gero, Méheux and Dominey-Howes (n 9).

⁴⁶ Richard JT Klein and Annett Möhner, 'The Political Dimension of Vulnerability: Implications for the Green Climate Fund' (2011) 42(3) *IDS Bulletin* 15, 16–17 ('The Political Dimension of Vulnerability'); Elise Remling and Åsa Persson, 'Who Is Adaptation for? Vulnerability and Adaptation Benefits in Proposals Approved by the UNFCCC Adaptation Fund' (2015) 7(1) *Climate and Development* 16, 552; Mizan Khan et al, 'Twenty-Five Years of Adaptation Finance through a Climate Justice Lens' [2019] *Climatic Change*; Åsa Persson and Elise Remling, 'Equity and Efficiency in Adaptation Finance: Initial Experiences of the Adaptation Fund' (2014) 14(4) *Climate Policy* 488.

⁴⁷ See April L Colette, 'The Politics of Framing Risk: Minding the Vulnerability Gap in Climate Change Research' (2016) 1 *World Development Perspectives* 43; Piet Buys et al, 'Country Stakes in Climate Change Negotiations: Two Dimensions of Vulnerability' (2009) 9(3) *Climate Policy* 288; Rhona Barr, Samuel Fankhauser and Kirk Hamilton, 'Adaptation Investments: A Resource Allocation Framework' (2010) 15(8) *Mitigation and Adaptation Strategies for Global Change* 843; Chen Chen et al, 'A Global Assessment of Adaptation Investment from the Perspectives of Equity and Efficiency' (2018) 23(1) *Mitigation and Adaptation Strategies for Global Change* 101.

paper then moves to establishing and justifying the normative framework of distributive justice used to assess whether adaptation finance is being disbursed in a fair manner that prioritises the most vulnerable. The final two substantive chapters considers the competing framings of vulnerability that the law leaves open for policymakers to adopt. This section first identifies and considers how the risk-hazard framing and the human security framing assess vulnerability and produce different answers on which states are considered most vulnerable. The paper then assesses which of these framings is adopted by climate funds. Finally, the paper evaluates whether patterns of disbursing adaptation finance achieve distributive justice by prioritising vulnerable Pacific States that lack the capacity to adapt.

1.4. Methodology

This research uses the two-step doctrinal methodology outlined by Hutchinson. As a form of qualitative and evaluative research, the doctrinal methodology involves identifying and weighing applicable legal sources by reference to their hierarchical or authoritative value.⁴⁸ Those legal sources are then interpreted by reference to the social context in which they apply.⁴⁹ The paper adopts this methodology to identify the existing laws that apply to adaptation finance and to then consider the problems currently affecting whether these laws and their underpinning policies result in distributive justice.

Primary legal sources and secondary sources are first identified through a desktop review using electronic databases. Once primary legal sources are identified, the specific provisions of those sources that are applicable to the raising and disbursement of adaptation finance are pinpointed. The second step is the interpretation of how these provisions apply in practice. The paper adopts legalisation theory to assess the hierarchical and authoritative value of provisions pertaining to adaptation finance and to identify the level of precision, bindingness, and ultimately normative force those provisions hold.⁵⁰ The output of this methodology is to formulate the relevant legal backdrop for assessing the core research question.

The paper then moves to identifying secondary sources through a literature review. Secondary sources are identified through an exhaustive review of leading peer-reviewed journals on climate law and policy. The first tier of the literature review identifies the normative framework of justice and evaluates how it applies to adaptation finance. The second tier of the literature review examines different definitions and framings of vulnerability, and further evaluates existing studies on how these framings effect the disbursement of adaptation finance. The paper then identifies points of intersection between key findings in the literature

⁴⁸ Terry Hutchinson, *Researching and Writing in Law* (Reuters, 4th ed, 2018).

⁴⁹ Ian Dobinson and Francis Johns, 'Qualitative Legal Research' in Michael McConville and Wing-Hong Chui (eds), *Research Methods for Law* (Edinburgh University Press, 2nd ed, 2017) 42; Hutchinson (n 45) 51.

⁵⁰ See Nina Hall and Åsa Persson, 'Global Climate Adaptation Governance: Why Is It Not Legally Binding?' (2018) 24(3) *European Journal of International Relations* 540.

to make evaluative judgments on whether the framing of vulnerability adopted by climate funds has resulted in distributive justice.

1.5. Limitations

The paper only considers multilateral public adaptation finance as it is the subject of international laws governing adaptation finance. Bilateral and private sources of adaptation finance are excluded from the research as they are largely outside the regulatory scope of the Climate Change Regime.

The spatial-scale of the paper is limited to state-to-state disbursements of adaptation finance. This common spatial focus has been critiqued because climate justice is inherently multi-scalar.⁵¹ However, disbursements within states on regional and local scales is not compatible with the research question given that the Climate Change Regime applies almost exclusively between states, rather than to citizens residing within states. Further, the legal provisions pertaining to adaptation finance only consider vulnerability at a state-wide level and not by reference to specific individuals or communities. As a result, the paper does not produce insights into whether distributive justice is being realised on the local scale.

Of the various sources of multilateral public adaptation finance, the paper only examines disbursements from the Adaptation Fund. The paper excludes the Special Climate Change Fund (SCCF) and the Least-Developed Countries Fund (LDCF) as the Adaptation Fund has been the primary mechanism for adaptation finance.⁵² The Green Climate Fund is not examined as it is relatively new and a sufficient range of research on its practice to allow a thorough literature review is not yet in existence. While the operation of the Green Climate Fund is ripe for empirical research, timeframe and resource constraints does not allow this paper to do so. Rather, the paper considers only the Adaptation Fund as it has been in operation for over a decade.

2. THE LEGAL FOUNDATIONS OF CBDR-RC AND ADAPTATION FINANCE

Over the past three decades a collection of treaties and decisions have emerged that are broadly aimed at limiting dangerous levels of planetary warming and supporting societies in coping with the effects of unavoidable climate change. This system of laws is underpinned by the *UNFCCC* that created a framework of broad principles guiding how the novel issue of climate change was to be tackled. These principles served as the springboard for the drafting of more specific obligations and commitments, which for adaptation and adaptation finance includes numerous decisions of the COP. This chapter will trace the broad development of laws applicable to climate change, from the broad principles contained in the *UNFCCC*, to the decisions of the COP that created various climate funds and the adoption of the *Paris Agreement* and the *Katowice Rulebook*. While doing so, it will focus on the provisions most relevant to the

⁵¹ Sam Barrett, 'The Necessity of a Multiscalar Analysis of Climate Justice' (2013) 37(2) *Progress in Human Geography* 215, 217.

⁵² Khan et al (n 46) 14.

normative idea of climate justice and the rules governing adaptation finance by considering the extent to which they are legalised. It will do so by examining the extent of legalisation of treaties and COP decisions by reference to their levels of obligation, precision and delegation.

2.1. Legalisation

Considering the level of legalisation that climate change treaties and COP decisions hold is important as it will reveal the extent to which the principles, obligations and commitments therein are binding on States. Legalisation is defined by reference to three elements, being: (i) obligation; (ii) precision, and (iii) delegation.⁵³ Obligation refers to the extent to which states are bound by treaties or COP decisions and is generally signified by the usage of mandating words such as ‘shall’.⁵⁴ Precision refers to the conciseness or ambiguity of the conduct proscribed or prescribed by treaties or COP decisions. Where provisions of treaties or COP decisions are “too vague to be applied to specific facts”, they will be ambiguous and have low levels of precision.⁵⁵ Finally, delegation refers to the extent to which interpretation, operationalisation, and monitoring is delegated to third parties such as the boards of climate funds.⁵⁶

Where obligation and precision are high, and delegation is nominal, treaties and COP decisions will be binding. Conversely, where obligation and precision are low, and delegation is high, obligations and commitments will be voluntary and the conduct they proscribe or prescribe will be unclear.⁵⁷ Having low legalisation limits the normativity of law, being its ability to “directly or indirectly steer the behaviour” of its subject States.⁵⁸ This chapter will trace the various treaties and COP decisions that collectively make up the body of rules that govern adaptation finance and examine to what extent they are legalised.⁵⁹

2.2. The role of principles

Being a product of a time when aspirations towards limiting climate change altogether were high, the *UNFCCC* is heavily weighted towards setting up the field for the mitigation of GHG emissions. During the early stage of the development of climate law, adaptation was a backburner issue. The dominant framework of market-based solutions saw emissions reduction schemes as the primary way to respond to

⁵³ Hall and Persson (n 50) 544; Judith Goldstein et al, ‘Introduction: Legalization and World Politics’ (2000) 54(3) *International Organization* 385.

⁵⁴ Hall and Persson (n 50) 545; Kenneth W Abbott and Duncan Snidal, ‘Hard and Soft Law in International Governance’ (2000) 54(3) *International Organization* 421, 409.

⁵⁵ G Kaufmann-Kohler, ‘Soft Law in International Arbitration: Codification and Normativity’ (2010) 1(2) *Journal of International Dispute Settlement* 283, 2; Hall and Persson (n 50) 545.

⁵⁶ Abbott and Snidal (n 54) 415; Hall and Persson (n 50) 544.

⁵⁷ Hall and Persson (n 50) 546.

⁵⁸ Ulrich Beyerlin (2007), ‘Different Types of Norms in International Environmental Law: Policies, Principles and Rules’ in *The Oxford Handbook of International Environmental Law*, ed. Daniel Bodansky, Jutta Brunnee and Ellen Hey, 428.

⁵⁹ For a review of climate finance law, see Alexander Zahar, ‘The Paris Agreement and the Gradual Development of a Law on Climate Finance’ (2016) 6(1–2) *Climate Law* 75.

the novel challenge of climate change.⁶⁰ Still, several important principles are enshrined in the *UNFCCC* that have relevance for adaptation and adaptation finance, such as the principle of CBDR-RC. Due to the hierarchical nature of international environmental law, these principles have served to guide the development and implementation of more specific legal provisions for adaptation and adaptation finance.⁶¹

At the top of this hierarchy sits peremptory norms, from which no derogation is permissible, and obligations *erga omnes* which apply to all regardless of State consent to be bound.⁶² Given that principles of environmental law are not considered peremptory norms,⁶³ we are concerned with the bottom of this hierarchy, being the category of amorphous ‘principles’ that sit in a legal grey area of hard and soft laws with unclear normativity.⁶⁴ Beyerlin identifies these principles as being “any norm that does not clearly set out the legal consequences that follow automatically from the presence of all stipulated facts.”⁶⁵ Norms that fall within this category, being many of the principles of international environmental law, serve to justify, guide and set the parameters for more specific obligations and commitments.⁶⁶

As explained by Lang, principles “are *norms* of a general nature which give guidance to state behaviour, but are not directly applicable”.⁶⁷ Bodansky, in discussing the role of principles in the *UNFCCC*, sees them as embodying legal standards that “are more general than commitments and do not specify particular actions.”⁶⁸ From this, one can see that the principles contained in the Climate Change Regime set the playing field on which specific and binding rules and commitments are developed and operationalised. Thus, principles provide a reference point for the development, interpretation and implementation of obligations and commitments that proscribe or prescribe conduct.⁶⁹ As principles do not provide for legal consequences and are framed with a level of generality with broad and guiding applicability, they attract only a low degree of legalisation.⁷⁰

⁶⁰ Khan et al (n 46) 5; David Cipler and J Timmons Roberts, ‘Climate Change and the Transition to Neoliberal Environmental Governance’ (2017) 46 *Global Environmental Change* 148.

⁶¹ Peter PJ Driessen and Helena FMW van Rijswijk, ‘Normative Aspects of Climate Adaptation Policies’ (2011) 2(4) *Climate Law* 559, 564; Beyerlin (n 58) 426.

⁶² Jochen Frowein, ‘Ius Cogens’ in Rüdiger Wolfrum (ed) *Max Planck Encyclopedia of Public International Law* (Oxford Public International Law, 2013); Jochen Frowein, ‘Obligations erga omnes’ in Rüdiger Wolfrum (ed) *Max Planck Encyclopedia of Public International Law* (Oxford Public International Law, 2008).

⁶³ See Pierre-Marie Dupuy and Jorge E. Viñuales, *International Environmental Law* (Cambridge University Press, 2015) 51-54.

⁶⁴ Beyerlin (n 58) 426.

⁶⁵ Ibid 427.

⁶⁶ Ibid 430, Rüdiger Wolfrum, ‘International Environmental Law: Purposes, Principles and Means of Ensuring Compliance,’ in Fred Morrison and Rüdiger Wolfrum, eds., *International, Regional and National Environmental Law* (The Hague: Kluwer Law International, 2000) 3, 6.

⁶⁷ Winfried Lang, ‘UN-Principles and International Environmental Law’ (1999) *Max Planck UNYB* 157, 159. Winfried Lang, ‘The United Nations and International Law’ (1995) *International Geneva Yearbook* IX 52.

⁶⁸ Daniel Bodansky, ‘The United Nations Framework Convention on Climate Change: A Commentary’ (1993) 18 *Yale Journal of International Law* 453, 501.

⁶⁹ Lluís Paradell-Trius, ‘Principles of International Environmental Law: An Overview’ (2000) 9(2) *Review of European Community & International Environmental Law* 93, 96; Alan Boyle, ‘Some Reflections on the Relationship of Treaties and Soft Law’ (1999) 48 *International and Comparative Law Quarterly* 901, 907.

⁷⁰ Beyerlin (n 58) 427; Kaufmann-Kohler (n 55) 2; Hall and Persson (n 50) 545; Chukwumerije Okereke and Philip Coventry, ‘Climate Justice and the International Regime: Before, during, and after Paris: Climate Justice and the International Regime’ (2016) 7(6) *Wiley Interdisciplinary Reviews: Climate Change* 834, 846.

2.3. The principle of CBDR-RC

Interactions within the hierarchy of norms is illustrated by examining the principle of CBDR-RC. This principle was introduced into the discourse of international environmental law by Principle 7 of the Rio Declaration, which holds:

... In view of the different contributions to global environmental degradation, states have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place in the global environment and of the technologies and resources they command.⁷¹

In essence, this principle ties together the “deep inequalities between and differing priorities of developed and developing countries”.⁷² The principle indicates that while all states have a responsibility to protect the environment, that common responsibility is differentiated between developed and developing states. The differentiation of responsibility is by reference to the contribution of states to environmental degradation and their capacity to stop or mitigate that degradation. As a principle, it calls for the specific obligations contained in environmental treaties to be differentiated so that a greater or more burdensome standard is applied to developed states than that applied to developing states.⁷³

Applied in the context of climate change, the principle of CBDR-RC recognises the common responsibility of developed and developing states in protecting the planetary climate, the primary responsibility of developed states for historic emissions, and the differences between developed and developing states in their social and economic capabilities.⁷⁴ This distinction is first set out in the third preambular paragraph of the *UNFCCC*, which states:

Noting that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs.⁷⁵

⁷¹ Rio Declaration on Environment and Development, 13 June 1992, UN Doc. A/CONF.151/26.Rev.1, Principle 7.

⁷² Daniel Bodansky, Jutta Brunnée and Lavanya Rajamani, *International Climate Change Law* (Oxford University Press, 2017) 52; for a comprehensive analysis, see Lavanya Rajamani, *Differential Treatment in International Environmental Law* (Oxford University Press, 2006) 61-6; Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law* (Hart Publishing 2011) 61-6.

⁷³ Lavanya Rajamani, ‘The Principle of Common but Differentiated Responsibility and the Balance of Commitments under the Climate Regime’ (2000) 9(2) *Review of European Community & International Environmental Law* 120; *ibid*; Ulrich Beyerlin, ‘Different Types Of Norms In International Environmental Law Policies, Principles, And Rules’ in Daniel Bodansky, Jutta Brunnée and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (Oxford University Press, 2008) 441.

⁷⁴ Rajamani (n 7b) 121.

⁷⁵ *United Nations Framework Convention on Climate Change* open for signature 4 June 1992, 1771 UNTS 107 (entered into force 21 March 1994), preamble [3].

While the preamble itself is not binding, it provides a reference point for interpreting the principles and rules that follow.⁷⁶ Relevantly, article 3 introduces a collection of legal principles with some normative force that are intended to shape the future development and implementation of climate change law. Article 3.1 is the foundational provision for CBDR-RC, holding that the signatories to the *UNFCCC* should protect our climate system:

...on the basis of **equity** and in accordance with their **common but differentiated** responsibilities and respective capacities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof (emphasis added).

Further, the disproportion in capacity between developed and developing states is recognised by article 3.2, which states:

The specific needs and special circumstances of developing country Parties, especially those that are **particularly vulnerable** to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration (emphasis added).

Notably, the chapeau to article 3 holds that parties “shall be guided” by these principles when implementing more specific provisions. Read together, article 3.1 and article 3.2 differentiate specific obligations so that developed states “take the lead” by being subject to more burdensome obligations compared to developing states, especially those deemed “particularly vulnerable”. Evidently, the role of CBDR-RC in this context is to shape specific rules and commitments in a manner that reconciles this disproportion between these two categories of states.

The guiding role of CBDR-RC as a principle is visible in the drafting of specific obligations and commitments for adaptation finance. Article 4.4 of the *UNFCCC* introduces a key commitment of developed states in the context of adaptation finance, stating that:

The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.

Reading this commitment in conjunction with article 3.1 and article 3.2 demonstrates that the principle of CBDR-RC has set the broad parameters for the development of adaptation finance. Article 3.2 contextualises the role of developing states by introducing the term “particularly vulnerable”, which, for adaptation finance, is both ubiquitous and nebulous. It holds that the special needs and circumstances of

⁷⁶ *Vienna Convention on the Laws of Treaties* open for signature 23 May 1969, 1155 UNTS 331 (entered into force 27 January 1980) Article 31(2); Makane Moïse Mbengue, “Preamble” in Rüdiger Wolfrum (ed) *Max Planck Encyclopedia of Public International Law* (Oxford Public International Law, 2006).

developing states should be given due consideration. However, what these special needs and circumstances are remains undefined at law.

These provisions frame the *UNFCCC*'s establishment of adaptation finance commitments in article 4.4, which mandates that developed countries shall assist developing countries that are “particularly vulnerable” to climate change in meeting the costs of adaptation. While the term “particularly vulnerable” has already appeared twice in the *UNFCCC*, the term is imprecise with no concrete definition. Moreover, the ambiguity surrounding the terms “special needs and circumstances” and “particularly vulnerable” creates uncertainty over who should benefit from these commitments and ultimately whether distributive justice is being achieved.⁷⁷

With the above in mind, the principle of CBDR-RC provides the strongest link between climate justice as an abstract theory and the obligations and commitments that govern the raising and disbursement of adaptation finance.⁷⁸ In the context of adaptation finance, the principle of CBDR-RC has inserted considerations of distributive justice into the specific obligations and commitments of adaptation finance by calling for developed states that are historically responsible for GHG emissions to raise finance, and for that finance to be disbursed to the developed states that are most vulnerable to climate change. Without such a link, the basis on which climate justice can be used as a normative principle to guide and critique laws, policies and decision-making for adaptation finance remains opaque.⁷⁹

2.4. The first-generation climate funds

With the legal framework in place, states moved to negotiate and implement further treaties and decisions for specific climate governance issues. This occurred at the annual meetings of the COP. It was at the seventh COP, in 2001, that decisions were made to establish the first adaptation finance mechanisms. The LDCF and the SCCF were created under the *UNFCCC* to respectively finance National Adaptation Plans of Action (**NAPAs**) and the additional costs of adaptation for development.⁸⁰ The establishment of each of these funds faced strong divisions between developing states and developed states over issues such as control and eligibility criteria.

While the LDCF and SCCF no longer play a pivotal role for adaptation finance,⁸¹ the divisions between developed and developing states when establishing these funds offers insights into the problems that plague today's funds. For both funds, negotiations over control were wedged between having direct oversight by the COP or by the Global Environment Facility (**GEF**), an entity established under the *UNFCCC* and

⁷⁷ Klein and Möhner (n 46) 16–17.

⁷⁸ Grasso (n 43) 121.

⁷⁹ In the context of adaptation policies more generally, see Driessen's and van Rijswijk's work that links five main principles in the *UNFCCC* to climate justice in Driessen and van Rijswijk (n 61).

⁸⁰ Morgan Scoville-Simonds, 'The Governance of Climate Change Adaptation Finance – An Overview and Critique' (2016) 7(2) *International Development Policy* 1.

⁸¹ See generally, Khan et al (n 46).

managed by the World Bank, the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). Developed states pushed for the GEF as this governance structure offered a direct veto power on decisions to donor states, whereas developing states sought more balanced decision-making through the COP.⁸² Further, much debate centred around the criteria for projects to provide global benefits, with developing states arguing this allowed developed states to frame adaptation as a local good to divert disbursements to mitigation focused projects.⁸³ As expected, the power of developed states won out and the LDCF and SCCF were established under the auspices of the GEF. Some compromise was struck by developed states, with the boards of these funds being comprised of 14 donor state representatives and 18 recipient state representatives. The GEF structure meant that projects were primarily implemented by the World Bank, UNDP and UNEP, with the structure of these entities being controlled by donor states.⁸⁴

As to eligibility, the LDCF and SCCF were both subject to the requirement that projects provide global benefits. The LDCF was further restricted to only states with least-developed country status, while the SCCF was left open to all developed state parties to the *UNFCCC* with a preference for vulnerable African, Asian and small-island developing states. Other than these geographic qualifiers, no definition or further guidance on “vulnerability” was provided in the SCCF’s constituent documents, and so the task of determining vulnerability was implicitly delegated to the SCCF’s board. These funds were criticised by developing states due to their donor-controlled disbursements and their isolation of developing states from decision making which enabled developed states to retain power over the direction and purpose of the funds.⁸⁵

2.5. The Adaptation Fund

The Adaptation Fund was also conceived at COP7, albeit under the auspices of the now defunct *Kyoto Protocol* rather than the *UNFCCC*.⁸⁶ The fund’s genesis was as a two percent levy on emission credits from projects under the *Kyoto Protocol*’s clean development mechanism. Article 12.8 of the *Kyoto Protocol* provided that a share of proceeds raised through this mechanism were to be used to “assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet

⁸² Ibid 6–7.

⁸³ Ibid 7.

⁸⁴ Ibid.

⁸⁵ Ibid 6.

⁸⁶ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its Seventh Session, held at Marrakesh from 29 October to 10 November 2001 – Addendum – Part Two: Action Taken by the Conference of the Parties*, UN Doc FCCC/CP/2001/13/Add.1 (21 January 2002) Decision 5/CP.7, Decision 6/CP.7, Decision 10/CP.7; Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, *Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018 – Addendum – Part two: Action taken by the Conference of the Parties to the Paris Agreement*, UN Doc FCCC/PA/CMA/2018/3/Add.2 (19 March 2019) Decision 13/CMA.1 and Decision 1/CMP.14.

the costs of adaptation.”⁸⁷ Despite the intentions of the Adaptation Fund being laid out in the *Kyoto Protocol*, it took a further four years for the fund to be created. In 2001, COP7 produced decision CP.7/10, the Adaptation Fund’s constituent decision which set contributions to the fund by developed states as voluntary. However, as the *Kyoto Protocol* did not enter into force until 2005, the Adaptation Fund lay dormant for several more years.⁸⁸

Throughout 2006 and 2007, a flurry of decisions (including 5/CMP.2 and 1/CMP/3)⁸⁹ saw the Adaptation Fund’s operational principles and governance structures developed. These decisions achieved a governance structure more favourable towards developing states than the LDCF and SCCF because of the fund’s provenance under the *Kyoto Protocol*.⁹⁰ Having a levy-based fund-raising structure detached from direct contributions by developed states, together with the fact that the United States was not a signatory of the *Kyoto Protocol*, weakened the negotiating position of developed states.⁹¹ This meant that initiatives pursued by developing states, such as direct access to funds and balanced representation, were achievable.⁹² As a result, access to the fund was to be in a “balanced and equitable manner for eligible countries” with a direct access modality and readiness funding allowing implementing agencies (like the World Bank) to be bypassed.⁹³ Funding was to be “country-driven”, on a “full adaptation cost basis”, and significantly, accountability was to the COP rather than the donor controlled GEF, making the fund a somewhat independent body.⁹⁴ The Adaptation Fund Board was created as the governance body, with “fair and balanced representation” and a one-country-one vote rule. However, eligibility requirements regarding levels of vulnerability suffered similar definitional ambiguities to the SCCF.

Eligibility to receive funds was established for developing countries that were signatories to the *Kyoto Protocol*. However, access is prioritised for those states that are “particularly vulnerable” to climate change

⁸⁷ *Kyoto Protocol to the United Nations Framework Convention on Climate Change* open for signature 16 March 1998, 2303 UNTS 148 (entered into force 16 February 2005) (‘Kyoto Protocol’) Article 12.8; Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on Its Twenty First session, held in Paris from 30 November to 13 December 2015— Addendum — Part 2: Action taken by the Conference of the Parties at its Twenty First Session*, UN Doc FCCC/CP/2015/10/Add.1 (29 January 2016), Decision 1/CP.21 ‘Adoption of the Paris Agreement’ (‘Paris Agreement’) Article 6(6).

⁸⁸ Grasso (n 43); *ibid* 82; Khan et al (n 46) 6; COP13 decision 1/CMP.3; Britta Horstmann, ‘Operationalizing the Adaptation Fund: Challenges in Allocating Funds to the Vulnerable’ (2011) 11(4) *Climate Policy* 1086, 1088.

⁸⁹ Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol, *Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its second session, held at Nairobi from 6 to 17 November 2006 – Addendum – Part Two: Action taken by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its second session*, UN Doc FCCC/KP/CMP/2006/10/Add.1 (2 March 2007) Decision 5/CMP.2; Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol, *Report of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol on its second session, held in Bali from 3 to 15 December 2007 – Addendum – Part Two: Action taken by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its third session*, UN Doc FCCC/KP/CMP/2007/Add.1 (14 March 2008) Decision 1/CMP.3.

⁹⁰ Grasso (n 43) 82.

⁹¹ *Ibid*.

⁹² *Ibid*; Khan et al (n 46) 6–7.

⁹³ Horstmann (n 88) 1088–1090.

⁹⁴ Scoville-Simonds, (n 80); *Ibid* 1090.

by giving “special attention” to their “particular needs”.⁹⁵ Again, no clear definition for this term was provided, with the responsibility for determining vulnerability being implicitly delegated with large discretion to the Adaptation Fund Board.⁹⁶ In 2008, the Adaptation Fund Board adopted a set of strategic priorities, policies and guidelines that refined the parameters for disbursing funds. Relevantly, disbursements to eligible states were to be made on, *inter alia*, their undefined “level of vulnerability”, “adaptive capacity to the adverse effects of climate change”, the “particular needs of most vulnerable communities” and “economic, social and environmental benefits of [projects]”.⁹⁷ Clearly, vulnerability and adaptation benefits are central to determining where funds should be disbursed.⁹⁸ However, consistent with the hierarchy of the fund, the Adaptation Board refrained from operationalising the term vulnerability in lieu of a definition being established by the COP, which to-date is yet to occur.⁹⁹ This effectively leaves the question of access open to political manoeuvring, with project proponents free to advocate how they are “particularly vulnerable” in project applications which are assessed on a “case by case basis” by the board.¹⁰⁰

With the LDCF, SCCF and Adaptation Fund now established and active, a key issue for the disbursement of funds arose. It became apparent that ambiguities in allocation criteria, in particular the absence of a definition for the term “particularly vulnerable” meant that disbursements may not be prioritising the most vulnerable with “some funding allocation formulae [reflecting] donor interests more than the needs of vulnerable countries.”¹⁰¹ Political interests meant that no clear category of particularly vulnerable states was agreed, particularly where doing so meant more powerful developing states such as Brazil, China and India would be foregoing their access to these funds.¹⁰² As a consequence, formalising how disbursements should be prioritised was left unaddressed. The need for a basis to prioritise disbursements was growing urgent as a gap was opening between the amount of funds being contributed by developed states and the amount of funds required to meet the costs of adaptation in developing states.¹⁰³

2.6. The Green Climate Fund

Developing states did not abandon their resolve for solving the disbursement dilemma. Using COP13 as a springboard, the *Bali Action Plan* was adopted to call for enhanced action on adaptation that accounted for

⁹⁵ Kyoto Protocol Article 12(8); Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, *Report of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol on its fourth session, held in Poznan from 1 to 12 December 2008 – Addendum*, UN Doc FCCC/KP/CMP/2008/11/Add.2 (19 March 2009) Decision 1/CMP.4; Ibid 1091, 1093.

⁹⁶ Ibid 1091.

⁹⁷ Remling and Persson (n 46) 18; Horstmann (n 88) 1092.

⁹⁸ Remling and Persson (n 46) 18.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Khan et al (n 46) 6; David Ciptet, J Timmons Roberts and Mizan Khan, ‘The Politics of International Climate Adaptation Funding: Justice and Divisions in the Greenhouse’ (2013) 13(1) *Global Environmental Politics* 49.

¹⁰² Remling and Persson (n 46) 18; Horstmann (n 88) 1094; Khan et al (n 46) 6.

¹⁰³ Khan et al (n 46) 9; Persson and Remling (n 46) 491.

the “urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change” as well as “[i]nnovative means of funding ... in meeting the costs of adaptation.”¹⁰⁴ COP14 saw momentum further build, with the Cancun Agreements calling for the development of “scaled-up, new and additional, predictable and adequate funding” to be provided to developing states, especially those that are particularly vulnerable to climate change. Moreover, an aspirational target for finance was set at US\$100billion per year by 2020.¹⁰⁵

To deliver this pledge, the Cancun Agreements established a new adaptation fund called the Green Climate Fund. Decision CP/2010/7 provided for the fund to be governed by a 24-member board, split equally between developed and developing state members.¹⁰⁶ At COP17 in Durban, the structure and operations of the Green Climate Fund were refined with a governing instrument being adopted.¹⁰⁷ Consistent with the gains made by developing states for the Adaptation Fund, the Green Climate Fund is directly accountable to the COP.¹⁰⁸ It also included direct access to finance and readiness funding to support developing states to engage with the fund.¹⁰⁹ Eligibility is open to all developing country parties to the *UNFCCC* with a preference again for particularly vulnerable states.¹¹⁰ As has been the case for all previous references to the term “particularly vulnerable”, no concrete definition is provided in the constituent documents of the Green Climate Fund.¹¹¹

2.7. The Paris Agreement and the Katowice Rulebook

The progressions from Bali to Durban and the establishment of the Green Climate Fund marked a shift away from mitigation-centric negotiations. Cipler et al explain this shift being due to two factors. The first was that the failures at Copenhagen to produce binding emissions reduction obligations created urgency on

¹⁰⁴ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its Thirteenth session, held in Bali from 3 to 15 December 2007 – Addendum – Part 2: Action taken by the Conference of the Parties at its Thirteenth Session*, UN Doc FCCC/CP/2007/6/Add.1 (14 March 2008) Decision 1/CP.13.

¹⁰⁵ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its Fifteenth session, held in Copenhagen from 7 to 19 December 2009 – Addendum – Part 2: Action taken by the Conference of the Parties at its Fifteenth Session*, UN Doc FCCC/CP/2009/11/Add.1 (30 March 2010) Decision 2/CP.15; Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its Sixteenth session, held in Cancun from 29 November to 10 December 2010 – Addendum – Part 2: Action taken by the Conference of the Parties at its Sixteenth Session*, UN Doc FCCC/CP/2010/7/Add.1 (15 March 2011) 1/CP.16; Khan et al (n 46) 9.

¹⁰⁶ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010 – Addendum - Part Two: Action taken by the Conference of the Parties at its sixteenth session*, UN Doc FCCC/CP/2010/7/Add.1.

¹⁰⁷ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011 – Addendum - Part Two: Action taken by the Conference of the Parties at its seventeenth session*, UN Doc FCCC/CP/2011/9/Add.1 (15 March 2012) Decision 3/CP.17; Cipler, Roberts and Khan (n 101) 52.

¹⁰⁸ Ibid 63.

¹⁰⁹ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011 – Addendum - Part Two: Action taken by the Conference of the Parties at its seventeenth session*, UN Doc FCCC/CP/2011/9/Add.1 (15 March 2012) Decision 3/CP.17

¹¹⁰ See Green Climate Fund, *Initial Proposal Approval Process, Including the Criteria for Programme and Project Funding (Progress Report)* GCF/B.06/08 (11 February 2014); Green Climate Fund, *Investment Criteria Indicators*, GCF B.22/15 (28 February 2019).

¹¹¹ Samuwai and Hills (n 10) 159; Khan et al (n 46) 9; Klein and Möhner (n 46).

adaptation and saw it as “a more ‘winnable’ fight.”¹¹² The second was an “apparent increase in climate-related disasters” which lead to the emergence of “the ‘climate justice’ cognitive frame” that “tied emissions in the North to suffering in the South.”¹¹³ However, with these perceived wins by developing states, prominent conflicts have arisen over prioritising the disbursements of limited and in-demand funds, and reaching clarity on the term “particularly vulnerable.”

The adoption of the *Paris Agreement* in 2015 offered little to resolve these issues. While the newfound expression of climate justice found its way into the agreement, it only did so in a preambular paragraph with little binding effect.¹¹⁴ The Agreement only reiterated that developed states should take the lead in mobilising finance, and the term “particularly vulnerable” remained without a concrete definition.¹¹⁵ Following the *Paris Agreement*, the *Katowice Rulebook* was adopted at COP24 which focused on other issues, such as loss and damage and the global stocktake. Despite projections showing that developed states were falling short of raising US\$100 billion per year by 2020, the *Katowice Rulebook* only reiterated aspirational elements of this pledge.¹¹⁶ The only concrete measure for adaptation finance was the continuation of the Adaptation Fund, shifting from the defunct *Kyoto Protocol* to the *Paris Agreement*. As a result, the problems of how to prioritise disbursements and the ambiguity of “particularly vulnerable” remained, both of which are pressing given that the withdrawal of the United States from the *Paris Agreement* has exacerbated the deficit of available funds.¹¹⁷

2.8. Adaptation finance and distributive justice

What can be garnered from the development of the various climate funds is that their fundamental purpose is to bridge the gap between responsibility for climate change and the lack of capacity to adapt to its adverse effects. Their parameters for raising and disbursing funds are largely set by the principle of CBDR-RC. Developed states are obliged to assist developing states in meeting the costs of adaptation, and those developing states that are particularly vulnerable and lack the capacity to adapt are to have their special needs and circumstances prioritised. As a result, the principle of CBDR-RC supports distributive justice being the normative benchmark for measuring the efficacy of disbursements of adaptation finance.

The principle’s guidance, that developed states are responsible for emissions and therefore must provide finance, is a striking example of responsibility as envisaged by distributive justice.¹¹⁸ As to disbursing

¹¹² Ciptet, Roberts and Khan (n 101) 52.

¹¹³ Ibid.

¹¹⁴ Khan et al (n 46) 12; Okereke and Coventry (n 70) 846.

¹¹⁵ Khan et al (n 46) 11, 14.

¹¹⁶ OECD, *2020 projections of Climate finance towards the USD 100 billion goal: technical Note*, (OECD Publishing, 2016) 12; Ibid 13.

¹¹⁷ United Nations Treaty Collection, ‘Status of the Paris Agreement’ (14 November 2020)

<https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtmsg_no=XXVII-7-d&chapter=27&clang=_en>; noting the United States of America’s withdrawal in 2017.

¹¹⁸ Christina Voigt and Felipe Ferreira, “‘Dynamic Differentiation’: The Principles of CBDR-RC, Progression and Highest Possible Ambition in the Paris Agreement’ (2016) 5(2) *Transnational Environmental Law* 285, 288.

finance, directing finance to benefit developing states that are nominally responsible for GHG emissions and also particularly vulnerable to the adverse effects of climate change aligns with the goals of distributive justice in allocating wealth to alleviate inequalities.¹¹⁹ Through the principle of CBDR-RC, distributive justice is arguably embedded into the Climate Change Regime and is the applicable framework for assessing the fairness of existing laws that govern adaptation finance.

3. DEFINING DISTRIBUTIVE JUSTICE

From a legal perspective distributive justice finds its strongest roots in the principle of CBDR-RC. The principle supports the view that GHG emitting states hold the primary responsibility to finance adaptation measures in developing states that have nominal responsibility for the drivers of climate change but also have limited capabilities to deal with its impacts. Baatz' lens of corrective justice can be contrasted with the theories of distributive justice that argue wealthy states that have an "ability to pay" ought to "accept an obligation of justice towards those who are less affluent."¹²⁰ Nonetheless, under both high-level conceptions climate justice is concerned with fairness by balancing the disproportionality between developed and developing states' responsibility GHG emissions and capacities to deal with the adverse effects of climate change.

At a high-level, and in order to balance the disproportion between responsibility and capability, distributive justice, through the vehicle of CBDR-RC, seeks to fairly delineate the extent of state obligations and rights for adaptation and mitigation that are set out in the *UNFCCC*. If climate justice is to be the framework used to assess the balance of obligations and entitlements in the context of adaptation finance, then a solid and ethically justifiable theory for it needs to be set out.¹²¹ The principles underpinning distributive justice must be thoroughly established, and its objects and actors clearly identified. However, the term justice is nebulous and so conceptual clarity is required if it is to be used as a normative framework to assess the efficacy of the laws governing the raising and disbursement of adaptation finance.¹²²

The theory of justice itself is contested and there is a wealth of divergent approaches that have been developed by scholars in law, economics, and political philosophy. While it is outside the scope of this paper to exhaustively examine the competing theories of justice, this chapter will, at a high-level, frame the primary modern schools in order to demonstrate which are the appropriate basis for developing and ethically justifying the structure of climate justice. That ethical structure will adopt the well traversed school of liberal theories of justice as fairness and will extend those theories to the novel problem of climate change.

¹¹⁹ Ibid.

¹²⁰ Idil Boran, 'On Inquiry into climate justice' in Tahseen Jafry (ed) *Routledge Handbook of Climate Justice* (Routledge, 2018) 30; see further, Henry Shue, *Climate Justice: Vulnerability and Protection* (Oxford University Press. 2014) ch 9.

¹²¹ Boran (n 120) 27.

¹²² See Grasso (n 43) 29.

What follows is an overview of the differences between the primary schools of justice and why the liberal theories are adopted in this paper.

3.1. The broader theories of justice

The two primary schools of justice deviate in that the first is concerned with justice as the conditions that maintain protections of individual rights and freedoms,¹²³ and the second with justice being the capacity of a system to provide people with “just desserts”.¹²⁴ The former comprises contractual and libertarian arguments that justice is a rational agreement reached by self-interested actors for the protection of individual rights and entitlements to property (or goods).¹²⁵ In pursuing those rights and entitlements, theorists argue that each individual will act morally in accordance with norms aimed at respecting each other’s rights and entitlements so as to maximise the common interests of society.¹²⁶ In contrast, the latter school, coined in the modern context by John Rawls’ theory of justice as fairness, is concerned with the fair and equal distribution of goods within society. Justice as fairness promotes a pattern of distributing goods where equal basic rights are applicable to all, and inequalities exist only where they benefit the least advantaged individuals and where there is equality of opportunity.¹²⁷ The category of liberal justice theories in which Rawls’ theory of just as fairness sits will be adopted by this paper as the theoretical basis for climate justice given its focus on the distribution of goods in a manner that alleviates inequalities as opposed to an individual rights and entitlements basis. In this vein, adaptation finance is not framed by this paper as an ipso facto entitlement of developing states. Rather, it is framed as a means to correct inequalities prevalent in the international system that have arisen due to disproportionate responsibilities and capabilities in the context of climate change.

The broad category of liberal theories of justice again diverges into two key schools that argue for different bases of distributing goods within a society: either by following an egalitarian model or contribution-based model. The former holds that goods should be equally and fairly distributed, but its proponents are divided over what the basis of equality is.¹²⁸ Theorists like Dworkin argue for true equality,¹²⁹ whereas others, like Sen, argue true equality cannot be achieved in circumstances where individuals with lesser abilities cannot properly utilise goods.¹³⁰ On the other hand, contribution-based theorists argue that goods should be allocated differentially either on the basis of an individual’s overall contribution to social good or on the

¹²³ Ibid 32.

¹²⁴ Ibid 37.

¹²⁵ See for example, Robert Nozick, *Anarchy, State and Utopia* (Basic Books, 1974); John Locke *Two treatises of Government* (P. Laslett (ed), Cambridge University Press, 1988).

¹²⁶ Ibid.

¹²⁷ John Rawls, ‘Justice as Fairness’ (1958) 67(2) *The Philosophical Review* 164.

¹²⁸ Grasso (n 43) 33.

¹²⁹ See Ronald Dworkin, ‘What is equality? Part 1: Equality of welfare’ (1981) 10 *Philosophy & Public Affairs* 185 and Ronald Dworkin, ‘What is equality? Part 2: Equality of resources’ (1981) 10 *Philosophy & Public Affairs* 283.

¹³⁰ Amartya Sen, ‘Equality of What?’ (the Tanner Lecture on Human Values, Stanford University, 22 May 1979).

basis of an individual's needs.¹³¹ However, what these modes of distributing share in common is a desire to distribute goods in a manner that overcomes inequalities.¹³²

3.2. The liberal theories of justice

Recognising that the sheer complexity of the theories of justice renders any summary futile, Grasso argues that for the purposes of climate justice a broad category of justice should be adopted. Grasso terms this category the “liberal theories of justice” that seek to “protect the least well-off subjects by enabling them to improve their condition.”¹³³ Grasso posits that adopting this broad category enables an ethical basis of climate justice to avoid being embroiled in the competing debates of justice theories.¹³⁴ The broad category of liberal theories of justice, used to ground distributive justice in the context of adaptation finance, adopts two primary theories: Rawls' theory of justice as fairness and Sen's capability approach. Grasso argues that these theories are broadly egalitarian in nature and aim to partially offset economic and social inequalities in a manner that is applicable to justice in the context of adaptation finance.¹³⁵ What follows is an outline of justice as fairness and the capability approach that will be used to ground the paper's ethical justification and development of the substantive nature of distributive justice as it applies to adaptation finance.

Rawls' well-known theory of justice as fairness comprises two key principles for a just society. The first principle is that there must be a basic law, or constitution, that enshrines essential rights equally for all in society.¹³⁶ The second principle concerns inequalities within a society and is broken down into two sub-principles, being that (i) inequalities “are to be attached to offices and positions open to all under conditions of fair equality of opportunity” and (ii) that inequalities “are to be to the greatest benefit of the least-advantaged members of society.”¹³⁷ The latter sub-principle, termed the “Difference Principle”, is of most relevance to adaptation finance as its purpose is to dispense wealth to alleviate inequalities within a society.

Rawls' second principle is largely egalitarian in nature because it holds that the distribution of goods in society should be equal, and any deviation must go towards improving the quantum of goods enjoyed by the least advantaged in society.¹³⁸ The second principle is objective in that it is not concerned with the utility or capability of recipients to use goods. Rather, it is only interested in the proportion of goods being disbursed between advantaged and disadvantaged members of society.¹³⁹ This objectivity grounds Amartya

¹³¹ Catherine Wilson, ‘The Role of a Merit Principle in Distributive Justice’ (2003) 7(3) *The Journal of Ethics* 277.

¹³² Grasso (n 43) 34.

¹³³ *Ibid.*

¹³⁴ *Ibid.*

¹³⁵ *Ibid.*

¹³⁶ Rawls (n 127).

¹³⁷ *Ibid.*

¹³⁸ *Ibid.*

¹³⁹ Sen (n 130).

Sen's central critique of Rawls theory of justice, being that it does not reveal or reduce inequalities within society and is not attenuated to an individual's capability to use goods to improve or enjoy their life.¹⁴⁰

Sen leads this critique by developing what is known as the capability approach. Broadly speaking, under the capability approach the focus of distributing goods moves away from strictly equalising goods and towards accounting for the effect that the distribution of goods may have on an individual's functioning in light of their capability.¹⁴¹ In this framework, functioning refers to things that individuals can be and do.¹⁴² For example, a person can *be* educated and *do* gainful work, or a person can *be* illiterate and *do* subsistence work. Capability refers to an individual's ability or opportunity to achieve these functionings. For example, while a 'functioning' is being educated or doing gainful work, the corresponding 'capability' is the opportunity to be educated or to do gainful work.¹⁴³ The capability approach shifts the idea of wellbeing away from objective equal distribution of goods and towards a distribution pattern that empowers the capability of individuals to achieve their desired functioning and thereby overcome inequalities.¹⁴⁴ In the context of adaptation finance, this approach moves the basis of distribution away from equal lump sums and towards one which allocates finance to states with the lowest capability to adapt.

One possible limitation of these liberal theories of justice (and in particular those relating to distributive justice) is that their scope appears restricted to justice within societies or states. For justice as fairness, the basic structure is that of a society existing within a state that has a constitution, legal system, and economy.¹⁴⁵ Although Rawls sought to extend his theories of justice to an international scale in *The Law of Peoples*,¹⁴⁶ of the eight principles comprising Rawls' international basic structure, only one has a distributive component. This is the duty of states "to assist other people living under unfavorable conditions that prevent their having a just or decent political and social regime."¹⁴⁷ However, and problematically for the purposes of developing an ethically justifiable framework of justice applied to the distribution of adaptation finance across states, this only entails a sufficientarian component of distributing goods which is only intended to bring all peoples to a basic minimum threshold.¹⁴⁸ It does not call for a global scale redistribution of resources to the least advantaged.

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

¹⁴² Ibid.

¹⁴³ Ibid.

¹⁴⁴ Ibid.

¹⁴⁵ Grasso (n 73) 39; Rawls (n 122); Philippe Van Parijs, 'International Distributive Justice' in Robert Goodin, Philip Pettit and Thomase Pogge (eds) *A Companion to Contemporary Political Philosophy* (Blackwell, 2017) 638.

¹⁴⁶ John Rawls, *The Law of Peoples : with The idea of public reason revisited* (Harvard University Press, 4th ed, 2002) 106-13; Samuel Richard Freeman, *Rawls* (Routledge, 2010) 439.

¹⁴⁷ Ibid.

¹⁴⁸ Freeman (n 146) 439.

To overcome this limitation, cosmopolitan theorists argue that duties of justice go beyond state borders.¹⁴⁹ Whilst it is beyond the scope of this paper to detail cosmopolitan theories, the key arguments for justifying cosmopolitanism are outlined. The first, argued by humanists, is that justice is owed to individuals not on the basis of membership to state, but rather on the virtue of common humanity.¹⁵⁰ Related to this is the second argument founded upon a human rights framework universal to all.¹⁵¹ The third, argued by associativists, accepts that justice may not be owed to all, but that duties of justice extend to “those who are members of a common economic association, which exists globally.”¹⁵² However, these approaches are rooted in benefice: the fact that we are humans or the fact that we are member of common economic association are not particularly mandating of obligations for international distributive justice.¹⁵³ Instead, both Grasso and Moellendorf argue that the notion of responsibility creates the basis for an obligation to redistribute resources on an international scale to the most vulnerable.¹⁵⁴ This equates to there being a moral obligation for those responsible for climate change towards those that suffer its adverse effects, regardless of where the action of emitting takes place or the adverse effects occur. On this basis, both sets of parties ought to “interact internationally” to achieve a fair distribution of adaptation finance.¹⁵⁵

3.3. From liberal theories of justice to distributive justice in the Climate Change Regime

The broader spectrum of liberal theories of justice that encompass justice as fairness and the capability approach have the strongest foundation for introducing distributive justice to the Climate Change Regime’s governance of adaptation finance. The first step to translating these liberal theories of justice into the context of climate change and adaptation finance is justifying why states, as opposed to individuals, are the key actors. This is due to the fact that these theories have so far only justified the redistribution of resources among individuals, and cosmopolitanism has only been used so far to justify the extension of these principles as they relate to individuals to an international scale not restricted by state borders.

When it comes to adaptation finance, both the raising and disbursement of funds operates via state actors, not individuals. The principle of CBDR-RC does not operate to shape the rights and entitlements of individuals vis-à-vis individuals. Rather, it is a principle that shapes the rights and entitlements between states depending on their responsibility for climate change and capability to take on the burden of

¹⁴⁹ Ibid 442–449; Darrell Moellendorf, ‘Climate Change and Global Justice: Climate Change and Global Justice’ (2012) 3(2) *Wiley Interdisciplinary Reviews: Climate Change* 131, 132 ; see further Van Parijs (n 140); Andrew Dobson, ‘Thick Cosmopolitanism’ (2006) 54(1) *Political Studies* 165.

¹⁵⁰ Gillian Brock, ‘Cosmopolitanism and Its Critics’ in Darrel Moellendorf and Heather Widdows (eds) *The Routledge Handbook of Global Ethics* (Routledge, 2014) 63; see further, Simon Caney, ‘Global poverty and human rights: the case for positive duties’ in Thomas Pogge (ed) *Freedom from Poverty as a Human Right* (Oxford University Press, 2007).

¹⁵¹ See generally, Thomas Pogge, *Freedom from Poverty as a Human Right* (Oxford University Press, 2007); Simon Caney, ‘Climate change, human rights and moral thresholds in Stephen Humphreys (ed) *Human Rights and Climate Change* (Cambridge University Press, 2010) 69.

¹⁵² Brock (n 150).

¹⁵³ Grasso (n 43) 40.

¹⁵⁴ Ibid; Moellendorf (n 149) 134–136; Darrel Moellendorf, ‘Climate Change Justice: Climate Change Justice’ (2015) 10(3) *Philosophy Compass* 173.

¹⁵⁵ Grasso (n 43) 40.

obligations for mitigation and adaptation.¹⁵⁶ On this basis, Grasso relies on French's theory of conglomerate collectives to justify states as actors in climate justice.¹⁵⁷ Here, states are decision-making entities that are larger than the sum of their members (citizens) but have their acts legitimated (via democracy) by their members and possess the ability to act independently from other states.¹⁵⁸ States are attributed with responsibility where they, via the legitimation of their citizens, act in a manner that has materially contributed to GHG emissions. Where those states act together in emitting, they are attributed with collective responsibility and are categorized by the *UNFCCC* as Annex 1 parties.¹⁵⁹

Applying these liberal theories of justice on an international scale with state actors in the context of adaptation finance has been distilled by Grasso into two key principles. Here, a system of adaptation finance based on distributive justice is one where there is:

- (i) the contribution to raising adaptation finance based on responsibility for GHG emissions; and
- (ii) the allocation of adaptation finance based on vulnerability to the impacts of climate change and the lack of capacity to adapt.¹⁶⁰

As to (i) the contribution to raising adaptation finance and (ii) the basis of allocation, the language of obligations in the Climate Change Regime, in particular those of equity and CBDR-RC, reflect the broader desire of liberal theories of justice to alleviate inequalities. Article 3.1 of the *UNFCCC*, states that states should protect the climate system on the basis of equity and in accordance with the principle of CBDR-RC. Article 3.2 of the *UNFCCC* holds that states should be guided by “the specific needs and special circumstances” of particularly vulnerable developing states that would otherwise bear a disproportionate burden of obligation. Article 4.4 of the *UNFCCC* calls for developing states to assist particularly vulnerable developing states in meeting the costs of adaptation. Moreover, article 9.1 of the *Paris Agreement* mandates that developed states “shall provide financial resources to assist developing” states, and article 2.2 calls for financial resource to be scaled up and to take into account the priorities and needs of particularly vulnerable developing states with “significant capacity restraints”. The combination of these above articles ground distributive justice into the Climate Change Regime by fairly allocating benefits and burdens, or rights and responsibilities, in respect of adaptation. Both Moellendorf and Boran view this sphere of justice in the context of climate change as an inquiry into moral responsibilities for GHG emissions and the disproportionate impacts these emissions have on developing states.¹⁶¹ In legal analysis climate justice has

¹⁵⁶ Moellendorf (n 149) 133.

¹⁵⁷ Grasso (n 43) 142; see further Peter French, *Collective and corporate responsibility* (Columbia University Press, 1984).

¹⁵⁸ Ibid 42–43.

¹⁵⁹ Ibid 43; Moellendorf (n 149) 133.

¹⁶⁰ Grasso (n 43) 6.

¹⁶¹ Moellendorf (n 149); Boran (n 120).

“come to be equated with an inquiry into how to assign responsibilities” for climate change’s impact through international law.¹⁶²

Grasso states that the starting point is in Rawls’ difference principle that holds that “the worse off among responsible subjects should be given priority by being allowed to reduce the contributions owed in function of the level of social primary goods that they enjoy.”¹⁶³ This principle can be seen in articles 3.1 and 3.2 of the *UNFCCC* that recognize the burden of obligations concerning adaptation should be weighted according to historic responsibility for climate change and current capabilities to respond to its adverse effects. Here, subjects are state signatories to the *UNFCCC*, contributions can be said to be obligations under that legal regime, and primary goods are the economic fruits of industrialisation that have in turn contributed to climate change inducing GHGs.¹⁶⁴

Both historic responsibility and greater enjoyment of primary goods lie with developed countries by reason of their industrialisation and historic levels of GHG emissions. It means that they should hold the burden of obligations. Conversely, the worse off among subjects, being developed states and in particular those most vulnerable to climate change, should be prioritised because they share nominal historic responsibility and nominal primary goods. That prioritisation is by allowing them to have less burdensome obligations.¹⁶⁵ This fits in line with Rawls’ difference principle that allows for inequalities only where they favour the least advantaged. Article 4.4 crystallises this permissible inequality that favours the least advantaged states by calling on developed countries to assist developing countries in meeting the costs of adaptation. This criterion is termed by Grasso as differentiated historical responsibility,¹⁶⁶ which this paper argues is the differentiated responsibility limb of CBDR-RC. However, this only sets the frame for one side of adaptation finance, being the raising of funds.

The flipside, being the disbursement or distribution of funds, is just as pivotal if adaptation finance is to reach the most vulnerable. However, a fundamental problem is that there is a limited pool of resources and a high degree of need.¹⁶⁷ In distributing these limited resources, article 3.2 of the *UNFCCC* and articles 9.1 and 9.2 of the *Paris Agreement*, state that adaptation finance should be provided by developed countries to developing countries in a manner that accounts for particular priorities and needs. Further, the Adaptation Fund’s Strategic Priorities, Policies and Guidelines requires that there be balanced and equitable access to finance.¹⁶⁸ Taken together, these legal texts require a system of adaptation finance to make disbursements

¹⁶² Boran (n 120).

¹⁶³ Grasso (n 43) 65; Rawls (n 127).

¹⁶⁴ See Moellendorf (n 149) 134–136.

¹⁶⁵ Grasso (n 43) 65.

¹⁶⁶ *Ibid.*

¹⁶⁷ Persson and Remling (n 46) 491; Martin Stadelmann et al, ‘Equity and Cost-Effectiveness of Multilateral Adaptation Finance: Are They Friends or Foes?’ (2014) 14(2) *International Environmental Agreements: Politics, Law and Economics* 101.

¹⁶⁸ Adaptation Fund, *Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund* (October 2017).

in a seemingly conflicted way that is both cognizant of the capabilities and vulnerabilities of recipient states and balanced and equitable.¹⁶⁹

To resolve the problem of limited resources in line with the legal architecture of adaptation finance, the literature has provided two distinct rationales for disbursements. The first is cost effectiveness, which refers to the allocation of adaptation finance in a manner that maximises net social benefits.¹⁷⁰ The second, termed equity, is premised on the theories of distributive justice outlined above and is contextualised as being “the proportion of funding provided relative to the level of vulnerability.”¹⁷¹ At a high level, Driessen and Rijswick explain equity to be “distributional fairness in the allocation of resources to fairly balance climate risks and inequalities.”¹⁷² Mickle et al argue that because climate justice recognises the disproportionate impacts historic emissions have on vulnerable people; it is a tool for addressing inequality through advocating “transformative approaches”.¹⁷³ Allocating adaptation finance on an equitable basis that prioritises those that need it most can be the kind of transformative approach Mickle et al call for. If adaptation finance is to properly balance inequality in climate change, then it is argued that equity, rather than cost-effectiveness, is the more useful rationale for disbursement.

3.4. Equity in disbursing adaptation finance

There are a variety of approaches to an equitable disbursement of adaptation finance. The first method is the egalitarian approach to distribution under which all eligible recipient states receive equal lump sums of funding.¹⁷⁴ The second follows prioritarianism so that disbursements that benefit the most vulnerable matter more than states that are less vulnerable.¹⁷⁵ The third is based on sufficientarianism so that disbursements are made only to the extent that they bring all states to a minimum threshold for adaptation capabilities.¹⁷⁶ The final is based on the leximin principle, which is “a stepwise process of first levelling out the worst-off with the second worst-off, then with the third worst-off and so on.”¹⁷⁷ However, only two of these appear permissible under the legal architecture of Adaptation finance. An egalitarian equal lump sum approach seems compatible with the requirement for finance to be balanced and equitable.¹⁷⁸ The other permissible approach is prioritarianism as it follows the requirement of disbursements to be based

¹⁶⁹ Persson and Remling (n 46) 495.

¹⁷⁰ Stadelmann et al (n 167) 103; Persson and Remling (n 46) 489.

¹⁷¹ Persson and Remling (n 46) 489; ‘Stadelmann et al (n 167) 104–105; Göran Duus-Otterström, ‘Allocating Climate Adaptation Finance: Examining Three Ethical Arguments for Recipient Control’ (2016) 16(5) *International Environmental Agreements: Politics, Law and Economics* 655.

¹⁷² Driessen and van Rijswick (n 61) 565.

¹⁷³ Mandy Meikle, Jake Wilson and Tahseen Jafry, ‘Climate Justice: Between Mammon and Mother Earth’ (2016) 8(4) *International Journal of Climate Change Strategies and Management* 488, 497.

¹⁷⁴ Persson and Remling (n 46) 492; Stadelmann et al (n 167) 105.

¹⁷⁵ Persson and Remling (n 46) 492; Grasso (n 43) 36, 37.

¹⁷⁶ Persson and Remling (n 46) 492; Grasso (n 43) 36–39.

¹⁷⁷ Persson and Remling (n 46) 492; Stadelmann et al (n 167) 105.

¹⁷⁸ Persson and Remling (n 46) 492.

on levels of vulnerability and account for the special needs and circumstances of particularly vulnerable states.¹⁷⁹ Both approaches strive to achieve the purpose of adaptation finance in reducing vulnerability.

Given the amount of finance required by vulnerable states to adapt outweighs the currently available pool of funding, prioritarianism is argued to be the preferred method of disbursements. In this context prioritarianism links with Sen's capability approach to fairly disburse the limited amounts of adaptation finance. Moreover, both prioritarianism and the capability approach is supported most by the *raison d'être* of adaptation finance.¹⁸⁰ As is made clear by article 3.2 of the *UNFCCC* articles 9.1 and 9.2 of the *Paris Agreement*, adaptation finance should be provided by developed countries to developing countries in a manner that accounts for particular vulnerabilities, priorities, and needs. In other words, the disbursement of finance should be done so in a manner that is cognizant of the capabilities of recipient states. Grasso argues that applying the capability approach means avoiding the pitfalls of strict egalitarianism that would only allow an equal distribution of goods to all developed states.¹⁸¹ Instead, it allows both a sufficientarian and prioritarian component to disbursing goods so that adaptation finance becomes a means to achieve "equal basic capabilities" among states to adapt to the adverse effects of climate change.¹⁸² The goal here is to bring developing states to, or above, a threshold level of adaptation capability.¹⁸³

Grasso argues that the capability approach ultimately promotes a prioritarian component of disbursement that seeks to increase capabilities and reduce deprivation in a manner that favours the reduction of the greatest deprivation.¹⁸⁴ Arguably, this goal is reflected in article 9.2 of the *Paris Agreement* through the requirement for the provision of financial resource to take into account the "priorities and needs" of countries "particularly vulnerable to the adverse effects of climate change" and those with "significant capacity constraints". Moreover, it is illustrative of the intent of article 3.1 of the *UNFCCC* to fashion obligations on the basis of equity and article 3.2 that recognises the "special needs and circumstances" of "particularly vulnerable" countries. These obligations support a view that the distribution of finance should account for levels of vulnerability, through the language of "particularly vulnerable", and specifically for social and economic vulnerabilities through the language of "special needs and circumstances" and "significant capacity restraints."

It is the latter type of vulnerabilities that truly align with the capability approach because they consist of the factors that create the opportunity to adapt. For example, a lack of economic capacity inhibits the ability to fund and implement adaptation measures and using adaptation finance to alleviate this fosters the

¹⁷⁹ Grasso (n 73) 37, in which it is posited that Sen's capability approach entails "a sufficientarian ideal" that "accepts other distributive patterns adverse to inequality, like prioritarianism."

¹⁸⁰ Remling and Persson (n 46) 16; Horstmann (n 88).

¹⁸¹ Grasso (n 43) 37.

¹⁸² *Ibid.*

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid.*

opportunity for adaptation. This criterion is termed by Grasso as the equity criterion and is argued by this paper to be the respective capabilities limb of the principle of CBDR-RC.¹⁸⁵ This paper posits that vulnerability is the currency of equity given that the language of the Climate Change Regime frames adaptation finance as a means to reduce vulnerability. Reconciling both sides of distributive justice means that adaptation finance should be raised according to both developed states' responsibility for historic emissions and their ability to pay and should be allocated in a manner that prioritises the most vulnerable.¹⁸⁶

Distributive justice means having a fair process that raises funds according to responsibility and distributes those funds on this basis of vulnerability to those that need it most. However, the basis on which finance should be allocated remains ambiguous at law with operative terms left undefined. In particular, while distributive justice's conception of equitable allocation is translated into law by provisions that direct finance to states that are "particularly vulnerable", both the literature and the law have not determined what this actually means, nor the basis on which limited resources should be allocated amongst states that fall within any assumed definition. The current absence of a definition is concerning because there are competing framings of vulnerability that produce very different answers on who is considered particularly vulnerable. Without a definition of the term "particularly vulnerable", it is unclear which states the law intends to fall within this category. Further, the failure at law in identifying how disbursements of adaptation finance should be prioritised leaves the door wide open for climate funds to make disbursements as they see fit. An environment of uncertainty and flexibility undermines the ability of the Climate Change Regime to ensure fairness in the disbursement of a limited pool of adaptation finance.

4. VULNERABILITY: DEFINITIONS AND FRAMINGS

The concept of vulnerability is the central mechanism for the disbursement and prioritisation of adaptation finance.¹⁸⁷ Vulnerability assessments guide the allocation of adaptation finance and dictate the types of adaptation projects that should be funded.¹⁸⁸ As we have seen, vulnerability remains ambiguous at law, with no clear definition provided in the *UNFCCC* or decisions of the COP.¹⁸⁹ Similarly, while the concept of vulnerability is well established in the literature,¹⁹⁰ there are competing approaches on how to frame vulnerability assessments and prioritise the different factors contributing to vulnerability.¹⁹¹ This chapter

¹⁸⁵ Ibid 37, 68.

¹⁸⁶ Ibid 6.

¹⁸⁷ Horstmann (n 88).

¹⁸⁸ See Fiona Miller and Kathryn Bowen, 'Questioning the assumptions: the role of vulnerability assessments in climate change adaptation' (2013) 31(3) *Impact Assessment and Project Appraisal*, 190.

¹⁸⁹ Klein and Möhner (n 46) 16–17; Remling and Persson (n 46) 552; Khan et al (n 46); Persson and Remling (n 46).

¹⁹⁰ James D Ford et al, 'Vulnerability and Its Discontents: The Past, Present, and Future of Climate Change Vulnerability Research' (2018) 151(2) *Climatic Change* 189, 189.

¹⁹¹ Hallie Eakin and Amy Lynd Luers, 'Assessing the Vulnerability of Social-Environmental Systems' (2006) 31(1) *Annual Review of Environment and Resources* 365; Hans-E-Martin Füssel, 'Vulnerability in Climate Change Research: A Comprehensive Conceptual Framework' (6) 36; W Neil Adger, 'Vulnerability' (2006) 16(3) *Global Environmental Change* 268; PM Kelly and WN Adger, 'Theory and Practice in Assessing Vulnerability to Climate Change And Facilitating Adaptation' 29.

will discuss the definitions of vulnerability that are provided in the literature and used by the IPCC. It will then examine the two dominant framings of vulnerability, the risk-hazard framing and the human security framing and assess the different conclusions they produce when determining who is particularly vulnerable to climate change.

4.1. Definitions of vulnerability

It is evident from the chapter outlining the treaties and COP decisions applying to adaptation finance that the definition of the term “particularly vulnerable” is opaque at law. The term’s definition is important given that it constitutes the operative mechanism for dictating who is eligible to receive adaptation finance and how the distribution of that finance should be prioritised among eligible states. If no clear definition can be discerned, then questions of eligibility and priority may remain unresolved.

In the *UNFCCC*, the usage of “particularly vulnerable” in article 3.2 and article 4.4 is subject to two qualifiers. First, a state must be a “developing state”, with this being signified by being a non-Annex II state. Second, the term is to be read in conjunction with the nineteenth preambular paragraph, which provides the following geographic descriptors:

“low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification and ... fragile mountainous ecosystems...”

The Adaptation Fund’s founding COP decision, Decision 5/CP.7,¹⁹² simply repeats these geographic qualifiers. Further, the usage of the term in the *Paris Agreement* goes unqualified, save for its capacity building provisions in article 11, introducing the further geographic qualifier of “small island developing states”. Even with these geographic qualifiers, there is no concise definition of which States are “particularly vulnerable,” let alone how vulnerability is to be measured.¹⁹³

The absence a clear definition at law can arguably be attributed to epistemic ambiguity. Hall explains epistemic ambiguity to arise when States are “[uncertain] about a particular task ... and flexibility is necessary and valued.”¹⁹⁴ As set out below, vulnerability is a complex scientific concept with numerous competing framings. States have been unable to reconcile this complexity into a concise legal definition and as a result have implicitly delegated the task of operationalising the term to IPCC and to climate funds.

¹⁹² Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its Seventh Session, held at Marrakesh from 29 October to 10 November 2001 – Addendum – Part Two: Action Taken by the Conference of the Parties*, UN Doc FCCC/CP/2001/13/Add.1 (21 January 2002) Decision 5/CP.7.

¹⁹³ Persson and Remling (n 46) 490; Klein and Möhner (n 46).

¹⁹⁴ Nina Hall, ‘What Is Adaptation to Climate Change? Epistemic Ambiguity in the Climate Finance System’ (2017) 17(1) *International Environmental Agreements: Politics, Law and Economics* 37, 40.

Throughout the 1990s and 2000s, the IPCC has built upon what is commonly referred to as the scientific definition of vulnerability. In tandem, climate change literature has built upon definitions of vulnerability in the context of natural-hazard literature. The development of definitions by both the IPCC and the literature is traced below to demonstrate the emergence of what, at first instance, appears to be an agreed definition.

In 1996, the IPCC initially defined vulnerability as the extent to which climate change may cause damage given a system's sensitivity and ability to adapt.¹⁹⁵ The latter part of this definition, being the ability to adapt, was expressed by the IPCC to be a reference to economic factors such as wealth, poverty and levels of development.¹⁹⁶ In 2000, the IPCC explained that this definition meant that a system that has greater sensitivity to modest changes in climate and has a severely constrained ability to adapt will be considered highly vulnerable.¹⁹⁷

The definition was further clarified by the IPCC's Third Assessment Report in 2001. Three core elements are articulated in the report's definition of vulnerability as "a function of the character, magnitude and rate of climate variation to which a system is *exposed*, its *sensitivity*, and its *adaptive capacity* [emphasis added]."¹⁹⁸ These core elements were carried through to the IPCC's Fourth Assessment Report published in 2007. That report defines vulnerability as:

the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.¹⁹⁹

The definition in the Fourth Assessment Report set the tone for vulnerability studies.²⁰⁰ Vulnerability was viewed as the residual consequence of the interaction of climate change has a hazard and the sensitivity of the system experiencing it after the process of adaptation had occurred.²⁰¹ This definition largely mirrors

¹⁹⁵ Robert Watson, Maarufu Zinyowera and Richard Moss, *Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analysis. Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change* (Intergovernmental Panel on Climate Change 1996) 23.

¹⁹⁶ Ibid.

¹⁹⁷ Robert Watson, 'Presentation of Robert Watson, Chair, Intergovernmental Panel on Climate Change, at the Sixth Conference of the Parties to the United Nations Framework Convention on Climate Change' (The Hague, 13 November 2000).

¹⁹⁸ Robert Watson, *Climate Change 2001: Synthesis Report: A Contribution of Working Groups I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Intergovernmental Panel on Climate Change, 2001) 388.

¹⁹⁹ Martin Parry, Osvaldo Canziani, Jean Palutikof, Paul van der Linden and Clair Hanson, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Intergovernmental Panel on Climate Change, 2007) 6.

²⁰⁰ In 2014, the IPCC undertook a paradigm shift in how vulnerability was understood. In its Fifth Assessment Report, the IPCC separated the concept of vulnerability from the elements of hazard and exposure and introduced the concept of risk: see Jagmohan Sharma and Nijavalli H Ravindranath, 'Applying IPCC 2014 Framework for Hazard-Specific Vulnerability Assessment under Climate Change' (2019) 1(5) *Environmental Research Communications* 051004. However, this paper focuses on the definition in the Fourth Assessment Report as this was the definition in place during the period in which the Adaptation Fund was operationalised.

²⁰¹ Kelly and Adger (n 26) 327; Sharma and Ravindranath (n 200).

how the literature has defined the concept of vulnerability. The literature's definition emerged from natural-hazard scholarship, which defined vulnerability as:

the degree of loss to a given element, or set of elements, at risk [...] occurrence of a natural phenomenon of a given magnitude.²⁰²

The concept was intended to inform policymakers about the consequences of a disaster rather than simply the likelihood of a disaster occurring.²⁰³ However, unlike climate change, vulnerability in the context of natural hazards is largely concerned with short-term and fixed hazards.²⁰⁴ As a result, the natural hazard definition of vulnerability did not account for climate change's uncertain long-term scale, its variety of hazards, nor the diversity of its effects on communities and ecosystems.²⁰⁵ Despite this limitation, Smit and Wandel's review of climate change literature found that vulnerability was overwhelmingly defined on similar terms, as the function of a system's:

exposure and sensitivity [...] to hazardous conditions and the ability or capacity or resilience of the system to cope, adapt or recover from the effects of those conditions.²⁰⁶

Both the definitions in the literature and by the IPCC have the same three clear elements, termed "input variables", that determine vulnerability: (i) exposure; (ii) sensitivity; and; (iii) adaptive capacity.²⁰⁷ Gallopin defines exposure as the degree or magnitude of a shock or hazard, and refers to the severity and intensity of climate change's adverse effects, such as the strength of a cyclone, while sensitivity is the degree to which a system is affected by that shock or hazard, in other words its fragility.²⁰⁸ Exposure and sensitivity are the "impact side of vulnerability."²⁰⁹ Gallopin defines adaptive capacity as the system's ability to respond to the shock or hazard.²¹⁰ These are considered as the "response" side to vulnerability.²¹¹ Clearly, exposure is focused on biological or physical hazards that climate change heralds.

The different focus of these elements of vulnerability can be seen through the examples in the IPCC Working Group II's 2014 Impacts, Adaptation, and Vulnerability report.²¹² The ranking of countries in the Asia-Pacific region to physical exposure to storms shows that when measuring exposure by reference to

²⁰² E Romieu et al, 'Vulnerability Assessment within Climate Change and Natural Hazard Contexts: Revealing Gaps and Synergies through Coastal Applications' (2010) 5(2) *Sustainability Science* 159, 159.

²⁰³ Ibid 160.

²⁰⁴ Füssel (n 191) 22.

²⁰⁵ Ibid.

²⁰⁶ Barry Smit and Johanna Wandel, 'Adaptation, Adaptive Capacity and Vulnerability' (2006) 16(3) *Global Environmental Change* 282, 286.

²⁰⁷ Gilberto C Gallopin, 'Linkages between Vulnerability, Resilience, and Adaptive Capacity' (2006) 16(3) *Global Environmental Change* 293, 300; for a conceptual overview of adaptive capacity, see Smit and Wandel (n 206).

²⁰⁸ Ibid 295–7.

²⁰⁹ Romieu et al (n 202) 160.

²¹⁰ Gallopin (n 199) 296.

²¹¹ Romieu et al (n 202) 160.

²¹² See Nurse et al (n 7).

relative population, Japan is ranked more vulnerable than Pacific States such as Fiji, Samoa, Vanuatu and Tonga.²¹³ Even when exposure is measured as a percentage of GDP loss to storms, Japan is still ranked as more vulnerable than Samoa and Tonga, with only Vanuatu, Niue and Fiji outranking it.²¹⁴

When considering the vulnerability of Japan and Pacific States such as Vanuatu and the Solomon Islands to physical exposure to storms, incorporating the latter elements of sensitivity and adaptive capacity changes the emphasis of who is more vulnerable. When compared to the Pacific region states, Japan enjoys high economic resources and more equal distribution of wealth and high levels of disaster risk management.²¹⁵ In contrast, Vanuatu and the Solomon Islands hold least developed country status with many peri-urban and remote communities residing in low-lying flood prone areas.²¹⁶ When storms cause tidal surges and flooding, the adverse effect on Japan is limited when compared to the Pacific region states. The effect of this hazard in disrupting livelihoods is minimised in Japan as its disaster risk management capacity has minimised its sensitivity and its economic status enables it to respond effectively.²¹⁷ Conversely, many communities in the Pacific states will be displaced and have their livelihoods disrupted. Flooding in agricultural areas disrupts food supplies and incomes, and a limited social security net exacerbates the situation.²¹⁸ With a limited economy and less developed institutions, the ability for affected communities and governments in the Pacific is significantly constrained when compared to that of Japan.

The distinct lenses of exposure on the one hand, and sensitivity and adaptive capacity on the other, have led to different framings of vulnerability emerging in the literature and in practice. Adopting certain framings will affect how each element of vulnerability is understood and prioritised and will produce very different conclusions about who is considered particularly vulnerable to climate change and the actions that should be taken for adaptation. Kelly and Adger argue that while no clear framework has emerged, a focus on “direct, physical, chemical or biological effects” has been preferred over a more desirable evaluation of “human well-being.”²¹⁹ They argue that vulnerability assessment must account for the underlying causes of vulnerability which they view as “the social, economic and institutional factors that influence levels of

²¹³ Ibid 1638.

²¹⁴ Ibid.

²¹⁵ See for example Gary Coutaz, ‘Living with Natural Disasters in Japan’ in Gary Coutaz (ed) *Coping with Disaster Risk Management in Northeast Asia: Economic and Financial Preparedness in China, Taiwan, Japan and South Korea*, (Emerald Publishing Limited, 2018) 85-110.

²¹⁶ United Nations Department of Economic and Social Affairs, ‘LDCs at a Glance’ (March 2018) <<https://www.un.org/development/desa/dpad/least-developed-country-category/lpcs-at-a-glance.html>>; Gregory E Rawlings, ‘Foundations of Urbanisation: Port Vila Town and Pango Village, Vanuatu’ (1999) 70(1) *Oceania* 72 ; Julien Barbara and Meg Keen, ‘Urban Politics in Melanesia: Shallow Roots’ (2016) 9 *State, Society & Governance in Melanesia*; Julien Barbara and Meg Keen, ‘Urbanisation in Melanesia: The Politics of Change’ (2017) 78 *Development Bulletin* 16; Tony Falkland and Ian White, ‘Freshwater Availability under Climate Change’ in Lalit Kumar (ed) *Climate Change and Impacts in the Pacific* (Springer, 2000).

²¹⁷ See for example Coutaz (n 215).

²¹⁸ Chand (n 31) 181-183; Gero, Méheux and Dominey-Howes (n 9) 102; Nunn (n 17).

²¹⁹ Kelly and Adger (n 26) 325–6.

vulnerability [...] and promote or constrain options for adaptation.”²²⁰ These two priorities – direct biophysical effects versus underlying socioeconomic and institutional causes – have shaped the different framings of vulnerability in the literature and in the practice of vulnerability assessments.

4.2. The divergent framings of vulnerability

While there is consensus that vulnerability comprises exposure, sensitivity, and adaptive capacity, there is no agreed framing or methodology for assessing each of these elements.²²¹ Framings are defined by Orum and Dale as “schemes and templates for organizing experience according to certain rules and strategies.”²²² Framings are how the elements of vulnerability are organised and prioritised and are used by scientists and policymakers to justify the accuracy of their understanding of vulnerability.²²³ The legitimisation of a vulnerability framing is a political decision and will dictate adaptation policy and the decisions made in disbursing finance.²²⁴

Two distinct framings of vulnerability have emerged in the literature and in practice which produce very different answers on vulnerability. The first, termed the risk-hazard approach, prioritises exposure by focussing on the effect that biophysical risks have on a system when they materialise,²²⁵ and measures loss largely in economic terms.²²⁶ The second, labelled the human security approach, prioritises sensitivity and adaptive capacity by examining the social, economic, and cultural attributes that dictate the ability of a system to respond to physical risks.²²⁷ These two approaches lead to very different assessments of a system’s vulnerability, which in turn can lead to very different outcomes for the disbursement of Adaptation Finance, particularly in circumstances where allocation is to prioritise “particularly vulnerable” states.²²⁸

4.2.1. The risk-hazard approach

The risk-hazard approach to vulnerability examines the type and degree of harm caused to a system by the adverse physical effect of climate change.²²⁹ Put simply, the approach assesses the degree to which assets (such as property or economies) are at risk to the biophysical effects of climate change to determine vulnerability.²³⁰ Vulnerability assessments focus on identifying the types of climatic impacts that a system may experience and use physical indicators to measure the spatial and temporal scales that a given impact

²²⁰ Ibid.

²²¹ Klein and Möhner (n 46) 16.

²²² Anthony Orum and John Dale, *Political sociology: Power and participation in the modern world* (Oxford University Press, 2009) 276; Colette (n 47) 46.

²²³ Ibid.

²²⁴ Ibid.

²²⁵ Eakin and Luers (n 191) 369–70; Füssel (n 191) 12–13.

²²⁶ Adger (n 26) 7.

²²⁷ Kelly and Adger (n 26); Grasso (n 43) 21.

²²⁸ Adger (n 191) 276; Colette (n 47).

²²⁹ See Roger Jones and Boer Rizaldi, “Assessing current climate risks” in *Adaptation Policy Framework: A Guide for Policies to Facilitate Adaptation to Climate Change* (UNDP, 2003); Eakin and Luers (n 184) 369; Adger (n 218) 7.

²³⁰ Adger (n 26) 3.

may occur.²³¹ Vulnerability is used to link the risk of a hazard to the risk of loss or damage, and is assessed by considering the hazards a system is exposed to due to its geography, the risks that those hazards may create, and when that risk may materialise.²³² Kelly and Adger view the role of vulnerability assessments under this approach as the “end point” of an analysis where vulnerability is the remaining loss that arises from hazards after adaptation has occurred.²³³

Vulnerability is framed by the risk-hazard approach as the function of a system’s “biophysical risk factors” and “potential for loss”.²³⁴ The role of social indicators is generally limited to population surveys to determine the number of people or assets affected, or economic indicators for the value of assets subject to the hazard.²³⁵ Here, the causative factor of vulnerability is primarily the attributes of the physical risk.²³⁶ In the context of climate change, vulnerability is measured by the negative outcome, generally measured in economic terms, that a hazard like sea level rise causes on an identified population, such as a coastal town. When the negative outcome of these hazards materialise, vulnerability is measured as the extent of loss experienced.²³⁷ Romieu et al argue that because the risk-hazard approach relies on past observation, it is only effective when a hazard is constant and does not vary.²³⁸ Given the highly uncertain nature of climate change, basing vulnerability assessments on historic data about a hazard may produce unreliable results.²³⁹

The focus of this approach is illustrated by Fussell’s hypothetical question of “[w]hich of two regions is more vulnerable to climate change and variability: Florida or Tibet?”²⁴⁰ When purely considering physical hazards, vulnerability assessments might identify Florida’s low elevation as a sensitivity that heightens the threat posed by sea-level rise.²⁴¹ The focus on economic assets will place Florida as more vulnerable than Tibet on the basis that a significant concentration of assets (cities and infrastructure such as trading ports and roads) are located in low-lying coastal areas that are expected to be subject to sea-level rise.²⁴² In contrast, a climate hazard that Tibet is exposed to, such as drought, may be considered to pose a lesser threat given the limited assets exposed, even though drought may pose immediate threats to the livelihoods of nomads and subsistence farmers.²⁴³

²³¹ Eakin and Luers (n 191) 369; Ibid.

²³² Ibid.

²³³ Kelly and Adger (n 26) 327.

²³⁴ Ibid.

²³⁵ Adger (n 218) 7.

²³⁶ Kenneth Hewitt, ‘The idea of calamity in a technocratic age’ in Kenneth Hewitt (ed) *Interpretations of Calamity from the Viewpoint of Human Ecology* (Allen and Unwin, 1983) 3-32: the role of social indicators is generally limited to population surveys to determine the number of those affected, or economic indicators for the value of assets subject to the hazard, see Adger (n 26) 8.

²³⁷ Eakin and Luers (n 191) 369.

²³⁸ Romieu et al (n 202) 162.

²³⁹ Ibid.

²⁴⁰ Fussell (n 191) 2.

²⁴¹ Ibid.

²⁴² Ibid 6, 9.

²⁴³ Ibid 6.

4.2.2. *The human security approach*

It is well recognised in the literature that vulnerability extends to more than just biophysical risks. It encompasses a range of underlying social, economic, and institutional factors that create vulnerability. Adger terms this social vulnerability, which is the exposure of a system to stresses from climate change as an external risk, and from the internal social, economic, and institutional experiences of a system.²⁴⁴ While the risk-hazard approach centres on loss or damage to assets, stress in the context of social vulnerability “encompasses disruption to [...] livelihoods and forced adaptation to the changing physical environment.”²⁴⁵ The literature explains the different focus of social vulnerability as stemming from structuralist and neo-Marxist analysis in famine research,²⁴⁶ which focus on how external factors, such as globalisation and capital ownership, and internal economic factors, such as property rights, exacerbate vulnerability.²⁴⁷

The concept of social vulnerability is used by two similar framings of vulnerability. The first, termed the political economy approach, uses social, cultural, economic, and political factors to explain how exposure to hazards can differ between and within population groups.²⁴⁸ The second, called the political ecology approach, has a greater emphasis on the role of social-ecological systems which sees social systems as being inherently connected to natural ones.²⁴⁹ Since both of these approaches differ from the risk-hazard approach due to their focus on the political and social dimensions of vulnerability, this paper will refer to them collectively as the human security approach.

The human security approach understands vulnerability as the social, economic, and institutional experiences of individuals and communities which determine the ability to cope with and respond to the adverse effects of climate change.²⁵⁰ The focus on social, economic, and institutional factors is largely derived from Sen’s theory of entitlements and the capability approach.²⁵¹ In the theory of entitlements, Sen envisages entitlements as determinative of the ability for a community to respond to stresses.²⁵² Entitlements are defined as the resources or calls on neighbours or the state for resources that are available to individuals or households given their levels of production, ownership of assets and social arrangements.²⁵³ In other words, entitlements are means of obtaining resources through exchanging endowments such as labour, money or assets.²⁵⁴ In the framework of Sen’s capability-approach,

²⁴⁴ Adger (n 26) 3.

²⁴⁵ Ibid 4.

²⁴⁶ Eakin and Luers (n 191) 370.

²⁴⁷ Adger (n 26) 44.

²⁴⁸ Eakin and Luers (n 191) 370.

²⁴⁹ Ibid 371; Adger (n 191) 268.

²⁵⁰ Ibid.

²⁵¹ Adger (n 26) 24–27.

²⁵² Ibid.

²⁵³ Ibid.

²⁵⁴ Ibid.

entitlements play a role in determining a person's capability to cope with or respond to climate change's hazards.

Under this approach, vulnerability occurs where there is an absence of resources, due to either a lack of endowments or a lack of opportunity to exchange those endowments, which deprives a system's capacity to respond to a hazard. For example, a person dependant on a subsistence economy may be vulnerable to storms because their limited of entitlements means they do not have the capability to effectively perform a function such as cyclone-proofing their house. Here, vulnerability is more than the extent of loss or damage experienced when a cyclone does occur. Instead, it is premised on the social, economic, and institutional factors that limit the capacity to cope with or respond to the cyclone.²⁵⁵

Accordingly, the human security approach views a society with poor social, economic and institutional opportunities that experiences a low to moderate hazard as more vulnerable than a developed and egalitarian society that experiences a more severe hazard. This is on the basis that the capacity of the former to cope with and respond to the hazard is inadequate whereas the latter's is not. Again returning to Fussel's example, a vulnerability assessment following the human security approach would likely position Tibet as more vulnerable than Florida as its socioeconomic factors, such as household income and national economic policies, constrain its ability to respond to the adverse effects of climate change.²⁵⁶ The result is a shift from a policy-lens premised on physical indicators towards interventions aimed at poverty reduction and addressing inequalities.²⁵⁷

The focus on factors that constrain the ability to cope with and respond to hazards frames vulnerability as a prior or pre-existing condition. It is the lack of entitlements that heightens vulnerability by reducing the capacity of communities to respond to hazard, rather than just the vulnerability occurring due to the hazard *per se*.²⁵⁸ Although the external stress itself can influence vulnerability (as the magnitude and severity of stressors can vary), it is neither a condition or sole cause of vulnerability.²⁵⁹ Further, the risk-hazard approach is criticised for its focus on historic data. Adger argues that approaches rooted in social vulnerability can provide forward-looking assessments of climate change's adverse effects by developing social indicators for present vulnerability that link to physical indicators and can be measured over time.²⁶⁰ Unlike the risk-hazard approach, the human security approach uses indicators to identify present

²⁵⁵ Kelly and Adger (n 26) 326.

²⁵⁶ Fussel (n 191) 6, 9.

²⁵⁷ Adger (n 26) 31; Hall (n 194) 44.

²⁵⁸ See Adger (n 26) 24–27.

²⁵⁹ Ibid 31.

²⁶⁰ Ibid 32.

sensitivities in terms of social, economic and institutional constraints on responses to climate change as the “starting-point” for analysis.²⁶¹

4.3. Consequences of vulnerability framings

The absence of a definition of vulnerability at law leaves open both the risk-hazard approach and the human security approach as framings that policymakers can adopt. The framing that is chosen is ultimately a political decision that will have profound implications on how disbursements of adaptation finance are prioritised. Disbursements that prioritise vulnerability on a risk-hazard framing will preference states that are at risk of greater economic loss due to climate change’s adverse effects. Adopting human security approach will prioritise disbursements to states that experience greater deficiencies in the ability to perform adaptation in the first place. As the law is silent on the choice of framings, authority is implicitly delegated to the IPCC and the boards of climate funds. In order to identify which framing has been adopted, the work of the IPCC and the practice of the Adaptation fund must be examined.

5. FRAMINGS OF VULNERABILITY IN PRACTICE

As demonstrated in the previous chapters, no clear definition of vulnerability is set out in the *UNFCCC*. A consequence of this is that the task of operationalising the definition of vulnerability has been implicitly delegated to the IPCC and to the boards of funds themselves. A great degree of flexibility is afforded by this delegation of responsibility as the ambiguity of vulnerability at law allows these institutions to make choices about the definitions and frameworks of vulnerability they adopt. This chapter will examine the role of the IPCC in providing scientific guidance to the *UNFCCC* and the COP and will analyse the framework of vulnerability adopted by the IPCC. It will then consider what, if any, effect the IPCC’s framing of vulnerability has on disbursements from the Adaptation Fund. To do so it will analyse the disbursement of adaptation finance against several vulnerability indices.

5.1. The role of the IPCC and its framing of vulnerability

The IPCC is the body that assesses scientific information on climate change, producing in-depth assessment and synthesis reports for policymakers. It is recognised by States as “the ultimate authority on scientific matters on climate change.”²⁶² The IPCC was established as a body of the World Meteorological Organisation and pursuant to article 21.2 of the *UNFCCC* it cooperatively engages with the *UNFCCC*’s Subsidiary Body for Scientific and Technological Advice (**SBSTA**). The IPCC has worked in tandem with the SBSTA to provide scientific guidance to climate policy and law-making processes.

²⁶¹ Kelly and Adger (n 26) 327.

²⁶² Richard SJ Tol, ‘Regulating Knowledge Monopolies: The Case of the IPCC’ (2011) 108(4) *Climatic Change* 827, 827.

Consideration of the IPCC's work by the SBSTA is frequently factored into the COP's agendas. For example, at COP20, the primary findings of the IPCC's Fifth Synthesis Report were presented. Moreover, the COP decided that parties to the convention are to continue consideration of the report, that the IPCC is to inform consideration of relevant agenda items at the COP and is to inform parties of information gaps identified in its report.²⁶³ Through this process of cooperation and information sharing with the SBSTA, the IPCC's work has been fed into the implementation of various COP decisions and has influenced the operationalisation of key aspects of the *UNFCCC*.

Due to its unique role, the IPCC has been implicitly delegated the task of producing scientific definitions and frameworks for various concepts associated with climate change.²⁶⁴ It has fulfilled this role by producing assessment and synthesis reports that contain various scientific definitions for key concepts such as adaptation, resilience, climate variability, and most importantly for our purposes, vulnerability.²⁶⁵ In this context, to understand the dominant approach of vulnerability regard must be had to the IPCC's work,²⁶⁶ particularly in circumstances where the concept of vulnerability has not been concisely defined at law.

The IPCC's view of vulnerability has developed over time to reach the definition currently adopted in the Third Assessment Report and clarified by the Fourth Assessment Report. Broadly speaking, that definition conceives vulnerability as the function of exposure, sensitivity, and adaptive capacity.²⁶⁷ The framing adopted when implementing this definition is important because it will dictate the focus of information about vulnerability that is used by policymakers and funds when disbursing finance. Critically, the choice of framing will dictate who is considered particularly vulnerable to climate change and thus determines how the disbursement of a relatively small pool of finance is prioritised among a relatively large pool of vulnerable States.²⁶⁸

In various analyses of the IPCC's definitions of vulnerability, scholars consistently categorise it as largely adhering to the risk-hazard approach.²⁶⁹ A key feature of the risk-hazard approach is that it focuses on vulnerability to natural hazards, rather than vulnerability due to a lack of entitlements, by looking towards the future risks of climate change on a given system.²⁷⁰ The risk-hazard approach assesses the key elements of hazards, exposure, and sensitivity largely by determining what hazards a system will be exposed to and what its sensitivity to those hazards will be in the future (albeit based on historical trends in data).²⁷¹

²⁶³ Conference of the Parties, United Nations Framework Convention on Climate Change, *Report of the Conference of the Parties on its twentieth session, held in Lima from 1 to 14 December 2014 – Addendum – Part two: Action taken by the Conference of the Parties at its twentieth session*, UN Doc FCCC/CP/2014/10/Add.2 (2 February 2015).

²⁶⁴ See Tol (n 262).

²⁶⁵ Parry et al (n 199).

²⁶⁶ Adger (n 191) 273.

²⁶⁷ Parry et al (n 199).

²⁶⁸ See Persson and Remling (n 46).

²⁶⁹ Adger (n 191) 269; Fussler (n 191).

²⁷⁰ Adger (n 191) 270.

²⁷¹ Fussler (n 191) 26.

While the assessment of sensitivity is based in part on current conditions, it factors in the effect of prospective adaptation measures.²⁷²

In his analysis of the IPCC's Third Assessment Report, Füssell argues that the risk-hazard approach has largely been adopted by the IPCC. When analysing the definition of vulnerability in the IPCC's Third Assessment Report, Füssell argues that it "can be linked to the risk-hazard framework" as it "consistently describes 'the future (or long-term) vulnerability' of systems to climate change."²⁷³ Again, when considering the definition contained in the Fourth Assessment Report, Füssell concludes that the assessment of vulnerability centres on the end-point analysis of risk after the process of adaptation which is a clear adoption of the risk-hazard approach.²⁷⁴ However, while the IPCC may have adopted the risk-hazard approach to vulnerability, it does not necessarily flow that this approach is used by the funds themselves.

5.2. The Adaptation Fund's framing of vulnerability

The Adaptation Fund's Strategic Priorities, Policies and Guidelines states that the decision of allocating finance will take into account the "level of vulnerability."²⁷⁵ This means that the framing of vulnerability adopted by funds will dictate where finance is disbursed to. Further, the qualifiers for the term "particularly vulnerable" used by the *UNFCCC* is mirrored by the fund in the context of eligibility requirements:

Eligible Parties to receive funding from the Adaptation Fund are understood as developing country Parties to the *Kyoto Protocol* that are particularly vulnerable to the adverse effects of climate change including low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems.²⁷⁶

Critically, the Adaptation Fund's constituent documents only state that funds should be disbursed by reference to levels of vulnerability and do not provide further clarity on the ambiguous usage of vulnerability in the *UNFCCC*.²⁷⁷ The Adaptation Fund's board has taken the view that "it will not adopt a more operational definition" unless the *UNFCCC* does so as well.²⁷⁸ In this circumstance, project proponents are tasked with justifying why they are particularly vulnerable and are free to adopt and use definitions, indices and indicators for vulnerability as they see fit when doing so.²⁷⁹ As a result, the framing of vulnerability adopted by the Adaptation Fund cannot be ascertained from its constituent and working

²⁷² Ibid 25–27.

²⁷³ Ibid 26.

²⁷⁴ Hans-Martin Füssell, 'How Inequitable Is the Global Distribution of Responsibility, Capability, and Vulnerability to Climate Change: A Comprehensive Indicator-Based Assessment' (2010) 20(4) *Global Environmental Change* 597, 602.

²⁷⁵ Adaptation Fund Board, *Strategic Priorities, Policies, and Guidelines of the Adaptation Fund Adopted by the CMP (Annex I to OPG)*, AFB/B.33.b/3/Add.2 (25 June 2019).

²⁷⁶ Ibid.

²⁷⁷ Persson and Remling (n 46) 494, 496.

²⁷⁸ Remling and Persson (n 46) 18.

²⁷⁹ Persson and Remling (n 46) 496; AFB 2012c, Annex 1 [8].

documents. Instead, its practice of disbursing finance can be examined to determine which states it considers “particularly vulnerable” and prioritises disbursements to, and how this assessment is conducted. To do so studies have reviewed the usage and framing of vulnerability in project proposals and have compared the pattern of disbursements against different vulnerability indices.

5.3. Framings in Adaptation Fund project applications

Examples of the risk-hazard approach can be seen in numerous Adaptation Fund project applications. In their review of the usage of vulnerability in proposals submitted to the Adaptation Fund, Remling and Persson found that “an impact-focused view of vulnerability dominates in the approved proposals when describing the country-level conditions.”²⁸⁰ For example, a vulnerability assessment for the Federated States of Micronesia identifies “recent and current” hazards to include earthquakes, typhoons and storm surges, which are “especially destructive to the marine ecosystem on which the country relies.”²⁸¹ Similarly, the Cook Islands identifies country-level vulnerability by reference to natural hazards such as “tropical cyclones, tsunamis, floods and droughts.”²⁸² These project applications all make reference to historic or current trends and focus on vulnerability purely by reference to biophysical hazards.

A further Cook Islands’ project identified remote communities as being vulnerable to cyclones, flooding and drought, and proposed technical interventions such as constructive water tanks and pipelines.²⁸³ Similarly, a Samoan project application identified flooding from sea-level rise and extreme weather as key hazards, with technical interventions such as relocating villages and climate proofing infrastructure proposed.²⁸⁴ As a final example, a project application by the Solomon Islands assessed urban areas in the capital Honiara as vulnerable to earthquakes and tsunamis with the proposed adaptation measures being technical responses such as constructing disaster shelters and sewerage and water infrastructure.²⁸⁵ These examples are symptomatic of vulnerability being constructed as “an environmental problem” rather than social, economic, or institutional problems.²⁸⁶ Largely absent from these project applications is reference to the underlying drivers of vulnerability.

²⁸⁰ Remling and Persson (n 46) 25.

²⁸¹ Adaptation Fund, Request for Project/Programme Funding from the Adaptation Fund by the Federated States of Micronesia (November 2013) (accessible at <<https://www.adaptation-fund.org/wp-content/uploads/2018/01/5198MCTFSMProposaltoAFAugust7th2017FINAL-2.pdf>>) 27.

²⁸² Adaptation Fund, Request for Project/Programme Funding from the Adaptation Fund by the Cook Islands (January 2018) (accessible at <<https://www.adaptation-fund.org/wp-content/uploads/2018/01/6531ProposalforCookIslands-2.pdf>>) 8.

²⁸³ Adaptation Fund, ‘Strengthening the Resilience of Our Islands and Our Communities to Climate Change’ (Project Proposal, 2011) 1, 31-33.

²⁸⁴ Adaptation Fund, ‘Enhancing the Resilience of Coastal Communities in Samoa to Climate Change’ (Project Proposal, 2011) 26-30.

²⁸⁵ Adaptation Fund, ‘Enhancing Urban Resilience to Climate Change Impacts and Natural Disasters: Honiara’ (Project Proposal, 2017) 1, 66, 111-12.

²⁸⁶ Remling and Persson (n 46) 26.

5.4. Framings based on Adaptation Fund disbursement patterns and vulnerability indices

Several studies have examined the use of vulnerability indices to examine the Adaptation Fund's pattern of disbursements.²⁸⁷ However, the selection of appropriate indices to measure vulnerability has mirrored the contest between the competing framings of vulnerability. In their review of literature, Stadelmann et al conclude that "[t]he construction of vulnerability indicators or indices [...] has been strongly contested in the academic community."²⁸⁸ This is due to the fact that the different framings adopted by vulnerability indices will result in different vulnerability rankings for states.²⁸⁹ Further, academics argue that vulnerability is not homogenous on regional or local scales, and so generic indices provide little utility for making comparisons of vulnerability.²⁹⁰ Paradoxically, a comparison of vulnerability on a state scale is necessary given that the UNFCCC's mechanism of disbursing and prioritising finance between states is based on the term "particularly vulnerable". As a result, many scholars conclude that the lack of scientific consensus on vulnerability means that identifying particularly vulnerable states is a political, rather than scientific, exercise.²⁹¹

With this methodological limitation in mind, two key studies have proceeded to utilise vulnerability indices. Fussel develops vulnerability indicators based on the IPCC Fourth Assessment Report to consider inequities in the distribution of responsibility, capability, and vulnerability to climate change.²⁹² Persson and Remling use four different vulnerability indices to examine whether the Adaptation Fund is prioritising particularly vulnerable states.²⁹³ The range of indices used by these studies demonstrates that the choice of index influences which states are considered particularly vulnerable. As the different indices reflect the different framings of vulnerability, they are useful in revealing which framing the Adaptation Fund's practice of disbursements follows.

Persson and Remling compared the level of vulnerability of states that had submitted applications for funding and those that had been approved using four different indices.²⁹⁴ The indicators used by each index are different and largely follow the different framings of vulnerability. The first index, called the Impact Vulnerability Index, uses indicators for the exposure of agricultural yield and GDP and for the percentage

²⁸⁷ See Persson and Remling (n 46); Fussel (n 191); Stadelmann et al (n 167).

²⁸⁸ Stadelmann et al (n 167) 105.

²⁸⁹ Hans-Martin Fussel, 'How Inequitable Is the Global Distribution of Responsibility, Capability, and Vulnerability to Climate Change: A Comprehensive Indicator-Based Assessment' (2010) 20(4) *Global Environmental Change* 597, 598–599.

²⁹⁰ See RJ Klein, 'Identifying Countries That Are Particularly Vulnerable to the Adverse Effects of Climate Change: An Academic or a Political Challenge?' (2009) 3(3) *Carbon & Climate Law Review* 8; Jochen Hinkel, "'Indicators of Vulnerability and Adaptive Capacity': Towards a Clarification of the Science–Policy Interface' (2011) 21(1) *Global Environmental Change* 198.

²⁹¹ Fussel (n 289) 599; Karen O'Brien et al, 'Why Different Interpretations of Vulnerability Matter in Climate Change Discourses' (2007) 7(1) *Climate Policy* 73; Klein (n 290).

²⁹² See Fussel (n 289).

²⁹³ Persson and Remling (n 46) 498.

²⁹⁴ Ibid.

of population affected by disasters.²⁹⁵ The second index, named the Climate Change Impact Index, uses indicators for the exposure of population to and percentage of additional deaths from disasters.²⁹⁶ The third index, called the Adaptive Capacity Index, uses indicators for social economic and institutional factors that include age dependency ratio, domestic credit to private sector, income inequality, literacy and female primary completion rates.²⁹⁷ The fourth index used by Persson and Remling, called the Vulnerability Index, has since been superseded by the Notre Dame Global Adaptation Initiative's index (**ND-Gain Vulnerability Index**), which uses sector based indices for both future exposure and current social vulnerability.²⁹⁸

5.4.1. *Impact Vulnerability and Climate Change Impact indices*

The Impact Vulnerability Index and the Climate Change Impact Index closely follow the risk-hazard approach to vulnerability. The former measures the economic damage that sea-level rise causes on agricultural yield.²⁹⁹ Buys et al describe it as “the direct impacts of global warming on countries” such as sea-level rise by reference to economic indicators such as GDP.³⁰⁰ The latter uses sector-based physical risk modelling measuring the impact of climate change on agriculture, disasters, health and coastal zones.³⁰¹ Consistent with the reliance on past data used in disaster-risk assessments, both indices measure future impacts using current and historic data.³⁰² As set out in the following table, both indices reach similar conclusions on which regions and states are considered highly vulnerable to the adverse effects of climate change:

Table 1. Sample of highly vulnerable states on hazard-based vulnerability indices	
Impact Vulnerability Index³⁰³	Climate Change Impact Index³⁰⁴
Mauritania, Senegal, Benin, Gambia, Sudan, Eritrea, Vietnam, Cambodia, Thailand, Myanmar, Philippines, Belize, Cuba, Guyana, Venezuela, Iraq, India, Bangladesh, Australia.	Benin, Burkina Faso, Burundi, Cape Verde, Central African Rep., Congo Rep., Gabon, Gambia, Guinea, Guinea Bissau, Kenya, Lesotho, Malawi, Mauritania, Mauritius, Mozambique, Nigeria, Rwanda, Senegal,

²⁹⁵ The Impact Vulnerability Index is developed and discussed in Buys et al (n 47).

²⁹⁶ The Climate Change Impact Index is developed and discussed in Barr, Fankhauser and Hamilton (n 47).

²⁹⁷ The Adaptive Capacity Index (termed the “composite index”) is developed and discussed in Barr et al (n 47).

²⁹⁸ See Chen et al (n 47).

²⁹⁹ Buys et al (n 47) 295.

³⁰⁰ Ibid 294–295.

³⁰¹ Barr, Fankhauser and Hamilton (n 47) 847–848.

³⁰² Buys et al (n 47) 295.

³⁰³ Ibid 295–296. Note that only states measuring above a score of 65 for impact vulnerability are included.

³⁰⁴ Barr, Fankhauser and Hamilton (n 47) 849. Note that only states in quartile one (highest impact) are included.

	Seychelles, Somalia, Swaziland, Tanzania, Togo, Uganda, Zambia, Bangladesh, Vietnam, Honduras, Egypt, Guyana, Suriname, Venezuela
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One key point of difference is that the Climate Change Impact Index excludes developed states. This means that for the Impact Vulnerability Index, states including Australia are included as highly vulnerable. However, as is illustrative of the risk-hazard approach's prioritisation of physical risk, relatively wealthy developing states such as India, Vietnam, Thailand, and the Philippines rank more vulnerable than less developed states, and in some instances even states with least developed country status such as Vanuatu. For instance, the Impact Vulnerability Index scores Vietnam at 76 and India at 74.5, whereas Bangladesh is ranked at 68.4 and Pacific States are included.³⁰⁵ Similarly, the Climate Change Impacts index ranks Vietnam as higher in vulnerability than Vanuatu, Samoa and the Solomon Islands.³⁰⁶ Buys et al explain this on the basis that "damages in developed countries tend to be small when measured in human loss but significant when economic losses are considered."³⁰⁷ This is demonstrative of how the risk-hazard approach emphasises vulnerability in terms of future economic loss when the future hazards of climate change occur.

5.4.2. *Adaptive Capacity Index*

The Adaptive Capacity index integrates physical risk modelling with an assessment of social, economic, and institutional factors to measure vulnerability. Social and economic vulnerability is measured using World Bank data on the number of dependant children and elderly in a working population, availability of credit, income (in)equality, governance, literacy rates and female primary education rates. Institutional factors are captured by implementation capacity which refers to the ability of a state to effectively use finance.³⁰⁸ The index measures capacity using World Bank data for economic management, structural policies, social inclusion and equity policy and public sector governance.³⁰⁹ The use of social and economic indicators together with institutional capacity indicators means that the index accounts for what Kelly and Adger term the architecture of entitlements, or in other words the underlying factors that create vulnerability.³¹⁰ The inclusion of these factors means this index aligns more with the human security approach to vulnerability. The Adaptive Capacity Index disaggregates its vulnerability rankings into results based on physical vulnerability indicators and sensitivity and adaptive capacity indicators. As is shown in

³⁰⁵ Buys et al (n 47) 296.

³⁰⁶ Vietnam is in quartile one (highest impact), whereas the relevant Pacific States are in quartile two.

³⁰⁷ Buys et al (n 47) 295.

³⁰⁸ Barr, Fankhauser and Hamilton (n 47) 851.

³⁰⁹ Ibid 851–852.

³¹⁰ Kelly and Adger (n 26) 326.

the following table, the disaggregation demonstrates how rankings change depending on what indicators are prioritised.

Table 2. Sample of vulnerable states based on the adaptive capacity index³¹¹			
	Physical Vulnerability Indicators Rankings	Sensitivity & Adaptive Capacity Indicators Rankings	Integrated Rankings
Quartile I - Most Vulnerable	Vietnam, Honduras, Suriname, Burkina Faso, Somalia	Afghanistan, Sudan	Burkina Faso, Congo, Ethiopia, Mali, Somalia, Honduras, Suriname
Quartile II - Vulnerable	Fiji, Kiribati, Marshall Islands, Samoa, Solomon Islands, Tonga, Vanuatu	Papua New Guinea, Solomon Islands	Solomon Islands, Vanuatu, Papua New Guinea, Vietnam
Quartile III – Less Vulnerable	Papua New Guinea, Micronesia, Brazil	Micronesia, Samoa, Tonga, Vanuatu, Argentina, Brazil, Nepal, Fiji,	Micronesia, India, Fiji, Kiribati, Marshall Islands, Samoa, Tonga
Quartile IV – Least Vulnerable	Sudan, Nepal, Malaysia, Afghanistan	Vietnam, Marshall Islands, Malaysia	Malaysia

The disaggregated results again show how the prioritisation of certain elements of vulnerability can skew who is considered most vulnerable. On a purely biophysical basis, Vietnam outranks numerous Pacific States, including those with least developed country status such as Vanuatu. The results are generally flipped when considering current sensitivity and the ability to adapt.

³¹¹ Sample adapted from Barr, Fankhauser and Hamilton (n 47).

5.4.3. ND-Gain Vulnerability Index

The fourth index used by Persson and Remling, the Vulnerability Index, has since been superseded. In its place, the ND-Gain Index is examined.³¹² Relevantly, it does not use GDP as an indicator on the basis that this would skew vulnerability towards less developed states due to their low adaptive capacity and high sensitivity.³¹³ Instead, it utilises sector based indicators for food, water, health, ecosystem services, human habitat, infrastructure, economic readiness, governance readiness and social readiness.³¹⁴ Each indicator has metrics that measure exposure, sensitivity, and adaptive capacity.³¹⁵ Its ranking of vulnerability is split into an overall index, a vulnerability index, and a readiness index. The overall index includes indicators for readiness, which is defined as the ability to “make effective use of investments for adaptation actions thanks to a safe and efficient business environment.” It is measured using World Bank metrics for the cost of business, World Governance Indicators for political instability and corruption and the rule of law, as well as social indicators including inequality and education levels.

As the focus of the readiness index is the ability to use future finance, rather than the present ability to respond to the adverse effects of climate change, it is not adopted here. Instead, the Country Vulnerability score is used which focuses solely on exposure, sensitivity and adaptive capacity. The Country Vulnerability score seeks to be neutral as to framings of vulnerability and splits its measurement of vulnerability into biophysical and social vulnerability.³¹⁶ Its exposure indicators largely follows the risk-hazard approach by considering “the degree to which the future climate change is projected to affect states.”³¹⁷ Its social vulnerability indicators reflect scores for sensitivity and adaptive capacity which largely follows the human security approach by considering pre-existing social, economic and institutional factors that limit the ability of a State to respond to climate change.³¹⁸ The ND-Gain index helpfully disaggregates its results for exposure and social vulnerability scores which demonstrates how vulnerability rankings change depending on the focus of inquiry. A sample of results is set out in the following table:

³¹² Chen et al (n 47) ; the ND-Gain Index can be accessed at <<https://gain.nd.edu/our-work/country-index/rankings/>>.

³¹³ Chen Chen, Ian Noble, Jessica Hellman, Joyce Coffee, M. Murillo and N Chawla, *University of Notre Dame Global Adaptation Index: Country Index Technical Report* (University of Notre Dame, 2015) 5; Chen et al (n 44).

³¹⁴ Ibid.

³¹⁵ Ibid.

³¹⁶ Chen et al (n 47) 104.

³¹⁷ Ibid.

³¹⁸ Chen et al (n 47) 105.

Table 3. Sample of vulnerability rankings based on the NG-Gain index³¹⁹			
Overall Ranking	Exposure Ranking	Sensitivity Ranking	Adaptive Capacity Ranking
Solomon Islands (169)	India (184)	Vanuatu (156)	Papua New Guinea (163)
Vanuatu (157)	Solomon Islands (182)	Solomon Islands (135)	Solomon Islands (139)
Papua New Guinea (139)	Brazil (156)	Vietnam (128)	Vanuatu (120)
India (134)	Philippines (145)	Thailand (102)	India (109)
Vietnam (124)	Papua New Guinea (143)	Papua New Guinea (99)	Philippines (102)
Philippines (116)	Vietnam (143)	India (99)	Vietnam (94)
Thailand (88)	Vanuatu (139)	Philippines (90)	Brazil (57)
Brazil (68)	Thailand (118)	Brazil (25)	Thailand (56)
Malaysia (40)	Malaysia (97)	Malaysia (22)	Malaysia (44)

Again, the disaggregated data shows that when viewed on purely a risk-hazard framing, relatively wealthy states such as India and Brazil outrank numerous Pacific States, including those such as Vanuatu with least developed country status. The rankings change significantly when considering vulnerability in terms of the current economic, social, and institutional factors that limit the ability of states to respond to climate change. On this basis, numerous Pacific States are ranked as highly vulnerable to climate change.

5.4.4. Findings

For the Impact Vulnerability Index, Persson and Remling's study demonstrated that most approved projects were submitted by states that are considered most vulnerable.³²⁰ This could mean that States that score

³¹⁹ Ibid.

³²⁰ Persson and Remling (n 46) 500.

high for vulnerability on indices that reflect the risk-hazard approach are applying for and receiving adaptation finance. An assessment using the Climate Change Impact index demonstrates that while the most vulnerable two quartiles of states were active in submitting applications for finance, disbursements from the Adaptation Fund prioritised states that were ranked least vulnerable.³²¹ While an assessment using the Adaptive Capacity Index demonstrated that states with low adaptive capacity were “more active in submitting proposals”, there was no clear method of prioritising vulnerable states across all indices. Ultimately, the results demonstrate that against the Adaptive Capacity Index, disbursements do not prioritise the most vulnerable states.

Against the different vulnerability indices, Persson and Remling doubt whether disbursements from the Adaptation Fund prioritise particularly vulnerable states.³²² Instead, they see disbursements being made based on “the technical quality of projects.”³²³ In a subsequent study of project proposals put to the Adaptation Fund, Remling and Persson conclude that most proposals adopt a risk hazard approach to vulnerability and focus on reducing sensitivities to future climate impacts rather than the underlying factors that cause current vulnerability.³²⁴ Most significantly, none of the projects approved by the Adaptation Fund addressed the underlying social, economic and institutional factors of vulnerability.³²⁵ In their view, this is reflective of how the Adaptation Fund operationalises vulnerability.³²⁶ However, in any event there is “little evidence to suggest a prioritisation of the [Adaptation Fund] of most vulnerable countries or communities on any framing of vulnerability.”³²⁷

6. ANALYSIS AND DISCUSSION

This chapter responds to the overarching research question and the sub questions that have framed this study. It does so by collating the evidence presented in previous chapters and then analysing and discussing this in the context of the sub-questions. First, this chapter analyses if the principle of CBDR-RC has shaped the legal framework for raising and distributing adaptation finance. Second, the chapter examines whether the principle of CBDR-RC promotes distributive justice. Third, this chapter examines whether the risk-hazard framing, or the human security framing has been adopted by the Adaptation Fund. The analysis and discussion then informs the final response to the main research question which is addressed in the conclusion and is focused on examining whether adaptation finance achieves distributive justice for Pacific States.

³²¹ Ibid.

³²² Ibid 501.

³²³ Ibid; Remling and Persson (n 46) 30.

³²⁴ Remling and Persson (n 46) 29.

³²⁵ Ibid 26.

³²⁶ Ibid 25.

³²⁷ Ibid 30.

6.1. Has the principle of CBDR-RC shaped the legal framework for adaptation finance?

Within the legal framework for adaptation finance sits the principle of CBDR-RC which has set the broad parameters for specific obligations and commitments. CBDR-RC holds that these specific obligations and commitments should be tailored to the differences in historic responsibility and capability to respond to climate change between signatory states.³²⁸ However, its status as a principle means it sits in a legal grey area of unclear normativity.³²⁹ The principle sits at a level of abstraction and is removed from application to specific factual scenarios. The principle does not prohibit or proscribe conduct but merely states that specific obligations are to be “guided” by it,³³⁰ and as a result it only holds weak normative force over signatory states to the Climate Change Regime.³³¹

The weak normativity of the principle of CBDR-RC, as a general and guiding principle, filters down to the specific obligations for adaptation finance. Idealistically, following the principle of CBDR-RC should result in a system of adaptation finance that mandates developed states to contribute significant amounts of finance, and the disbursement of that finance is mandated to prioritise particularly vulnerable states.³³² However, it appears that the principle of CBDR-RC has not produced a clear and mandatory system of adaptation finance. On the raising of funds, the non-binding nature of provisions calling for an upscaling of finance is epitomised by the projected shortfall of developed states in meeting the aspirational goal of US\$100 per year by 2020.³³³ On the flipside of distribution, the mechanism for disbursements is too ambiguous to result in any clear method of prioritisation. Although article 4.4 of the *UNFCCC* states developed states shall assist developing states that are “particularly vulnerable”, and article 9.4 of the *Paris Agreement* stresses the priorities and needs of “particularly vulnerable” developing states, the concept of vulnerability is left undefined.³³⁴ No guidance is provided on how to determine who is “particularly vulnerable” other than the raft of geographic qualifiers in the *UNFCCC*’s preamble and various COP decisions that apply to almost all developing states.³³⁵ The ambiguity over defining what vulnerability means prevents it from being applied clearly to the factual dilemma of how to resolve competition between eligible states over a limited pool of adaptation finance.³³⁶ While the intention is that disbursements are prioritised on levels of vulnerability, the law does not articulate or mandate any method for measuring or ranking vulnerability.

³²⁸ Moellendorf (n 149) 133; Rajamani (n 73).

³²⁹ Beyerlin (n 58) 426.

³³⁰ see Kaufmann-Kohler (n 55) 2; Hall and Persson (n 50) 545.

³³¹ Beyerlin (n 58) 426.

³³² Grasso (n 43) 72–73.

³³³ On the basis of public pledges, the OECD states that levels of public climate finance are projected to only reach US\$67 billion per year by 2020: OECD (2016), *2020 projections of Climate finance towards the USD 100 billion goal: technical Note*, OECD Publishing at 12.

³³⁴ Horstmann (n 88) 1094; Persson and Remling (n 46) 490.

³³⁵ Horstmann (n 88) 1091.

³³⁶ Abbott and Snidal (n 54) 415; Hall and Persson (n 50) 544.

Ultimately, the research supports a finding that the legal provisions pertaining to the principle of CBDR-RC and to adaptation finance are drafted with a level of ambiguity and non-bindingness that detracts from their mandating force. In particular, the absence of a legal definition of vulnerability has left open the choice of framing and has resulted in an implicit delegation of this decision to the IPCC and the funds themselves.³³⁷ The result is a low degree of legalisation that has created an ad-hoc system of disbursing adaptation finance largely based on the technical quality of project proposals rather than a system of disbursements based on clearly defined principles.³³⁸

6.2. Does the principle of CBDR-RC call for distributive justice?

A key evaluative judgment of the research is that the principle of CBDR-RC embeds distributive justice into the Climate Change Regime. The principle calls for developed states that are responsible for historic GHG emissions to take the lead in mitigation and adaptation and for developing states with weaker economies to be supported.³³⁹ In doing so it seeks to differentiate the burden of obligations under the Climate Change Regime, and in particular, channel financial assistance to the most vulnerable states.³⁴⁰

At the heart of distributive justice is the protection of the least well-off by empowering them to improve their circumstances.³⁴¹ Rawls' difference principle justifies inequalities in the disbursement of adaptation finance that go towards improving the conditions of the most vulnerable so that these states receive a greater share of adaptation finance.³⁴² Sen's capability approach calls for disbursements to favour the reduction of the greatest deprivation by prioritising the states with the lowest capabilities to perform the function of adaptation.³⁴³ Since the capability to adapt is dictated by social, economic, and institutional factors, the currency of vulnerability should be measured in these terms. If adaptation finance is to achieve distributive justice by reducing the greatest levels of deprivation, disbursements must be prioritising states with the lowest capacities for adaptation rather than simply the developing states with greater economic exposure.³⁴⁴

The principle of CBDR-RC has guided adaptation finance so that developed states that are historically responsible for GHG emissions are to raise finance that is to be disbursed to vulnerable developing states.³⁴⁵ In line with the principle of CBDR-RC, the disbursement of adaptation finance is to be tailored to the special

³³⁷ Colette (n 47); Hall and Persson (n 50).

³³⁸ Hall and Persson (n 50) 552; Remling and Persson (n 46) 30; Hall and Persson (n 50).

³³⁹ Grasso (n 43) 63, 72.

³⁴⁰ Ibid 121, 122.

³⁴¹ Ibid 34.

³⁴² Ibid 65; Rawls (n 127).

³⁴³ Grasso (n 43) 37.

³⁴⁴ Ibid 68; see the different outcomes for the states that are considered most vulnerable produced by the different vulnerability indices used by Chen et al (n 47); Buys et al (n 47); Barr, Fankhauser and Hamilton (n 47).

³⁴⁵ Grasso (n 43) 63, 72.

needs and circumstances of particularly vulnerable states on the basis of equity.³⁴⁶ While key ambiguities exist over the term “special needs and circumstances”, it should be read in line with the underlying economic inequalities that create vulnerability.³⁴⁷ In this vein, the principle of CBDR-RC promotes distributive justice by differentiating the disbursement of finance on the basis of vulnerability.³⁴⁸ This paper argues that in doing so, the human security framing of vulnerability should be adopted.³⁴⁹

6.3. How does the Adaptation Fund frame vulnerability?

The absence of a definition of vulnerability leaves open the normative choice of how to frame and measure vulnerability.³⁵⁰ On the one hand, there is the risk-hazard approach that emphasises vulnerability as the risk of economic loss to the physical hazards of climate change.³⁵¹ On the other hand, there is the human security approach that focuses vulnerability on the social, economic, and institutional factors that constrain the capability of states to adapt.³⁵² At law, neither of these approaches are mandated and so the value choice of which framing to adopt has been implicitly delegated to the IPCC and the boards of climate funds.³⁵³

The choice of framing has fundamental consequences on who is considered vulnerable and who disbursements should be prioritising. Policymakers use framings as the templates to interpret and apply the elements of vulnerability to justify decisions over disbursements.³⁵⁴ As demonstrated through the four vulnerability indices, if the risk-hazard approach is adopted, disbursements will, in theory, prioritise states such as Vietnam, India and the Philippines that, while greatly exposed to the physical hazards of climate change in terms of potential economic loss, have a greater capacity to adapt than many Pacific States.³⁵⁵ Conversely, if the human security approach is adopted, disbursements will, in theory, prioritise many Pacific States that, while having lower levels of projected economic loss, have significant capacity constraints that inhibit adaptation.³⁵⁶ Evidently, the value choice of framings plays a determinative role in who is considered vulnerable and will dictate whether distributive justice is achieved.

With no clear definition at law, the task of interpreting vulnerability and choosing a framing has been implicitly delegated by the COP to the IPCC and funds themselves. The findings from the textual analysis of IPCC reports and the rules of climate funds suggest that the risk-hazard approach has been favoured.

³⁴⁶ *United Nations Framework Convention on Climate Change* open for signature 4 June 1992, 1771 UNTS 107 (entered into force 21 March 1994) Article 3.2.

³⁴⁷ Kelly and Adger (n 26) 326; Grasso (n 43) 66–69.

³⁴⁸ Horstmann (n 88) 1040.

³⁴⁹ Grasso (n 43) 37.

³⁵⁰ Colette (n 47).

³⁵¹ Kelly and Adger (n 26) 327; Adger (n 26) 4.

³⁵² Kelly and Adger (n 26) 326; Adger (n 191); Adger (n 26).

³⁵³ See Horstmann (n 88) 1094.

³⁵⁴ Colette (n 47) 46.

³⁵⁵ See Table 1; Buys et al (n 47) 295.

³⁵⁶ See Table 3; Chen et al (n 47).

Füssel concludes that the IPCC's consideration of vulnerability in its assessment reports is concerned with exposure to long-term physical hazards.³⁵⁷ And while the Adaptation Fund has refrained from explicitly operationalising a definition of vulnerability, Remling and Persson' argue that in practice the risk-hazard approach is utilised given the majority of project proposals favour reducing sensitivity to the physical hazards of climate change.³⁵⁸ Further, the findings from Persson and Remling's comparison of disbursements from the Adaptation Fund to vulnerability indices do not suggest disbursements are prioritising vulnerable states on a human security framing.³⁵⁹

6.4. Does adaptation finance achieve distributive justice for vulnerable Pacific States?

The above findings are consistent with the argument that the lack of precision and mandating force of both the principle of CBDR-RC and the substantive legal provisions on adaptation finance has prevented disbursements of finance achieving distributive justice for Pacific States. Ambiguity over what vulnerability means, together with no mandating provisions for channelling finance in a manner that prioritises lifting capacities to adapt, has left the method for prioritising the disbursement of finance unaddressed at law. If a specific framing of vulnerability were to be adopted by the COP, this would remove the flexibility given to the IPCC in defining vulnerability and to climate funds in choosing how to disburse finance.³⁶⁰ Ironically, the COP has been unable to reach a decision due to political impasse³⁶¹ and a lack of scientific expertise,³⁶² which has led to the implicit delegation of the value choice of which framing to adopt.

The resulting endorsement of the risk-hazard framing by the IPCC and the Adaptation Fund, together with the finding that disbursements are not prioritising vulnerable states on any framing, has concerning implications for Pacific States. First, as is evident from the review of vulnerability indices, on a risk-hazard framing many Pacific States have their vulnerability outranked by developing states with stronger economies, such as India, Malaysia, Vietnam, and the Philippines.³⁶³ However, when adaptive capacities are factored into vulnerability indices, the true picture of vulnerability in the Pacific region can be seen.³⁶⁴ Pacific States, including Papua New Guinea, the Solomon Islands and Vanuatu all rank higher than these South Asian developing states.³⁶⁵ On the face of these indices, if adaptation finance is to adopt a risk-hazard approach, many Pacific States will not be prioritised.

³⁵⁷ Füssel (n 191).

³⁵⁸ Remling and Persson (n 46).

³⁵⁹ Persson and Remling (n 46).

³⁶⁰ Colette (n 47).

³⁶¹ Khan et al (n 46) 6; Remling and Persson (n 46) 18; Horstmann (n 88).

³⁶² Hall (n 194).

³⁶³ See Table 1; Buys et al (n 47) 295.

³⁶⁴ See Table 3; Chen et al (n 47).

³⁶⁵ Ibid.

The second concerning implication is that in practice, disbursements of adaptation finance are ad-hoc and do not appear to prioritise vulnerability. As Persson and Remling conclude, the only clear influence on disbursements is the technical quality of project applications.³⁶⁶ Where vulnerability is not determinative of disbursements, Pacific States are at risk from missing out on a much-needed share of adaptation finance. If disbursements are dependent on the technical quality of project applications, Pacific States may be placed in a position of disadvantage where they experience inadequate institutional capacity. Arguably, the technical quality of a project application is reliant on the institutional capacity of the government agency responsible for drafting those applications. However, the lack of institutional capacity is one of the underlying causes of vulnerability, being a factor that the disbursement of finance is designed to alleviate.³⁶⁷ In other words, despite limited institutional capacity being a sign of vulnerability, its very deficiency is a hurdle to accessing adaptation finance. One workaround appears to be readiness funding grants that are designed to strengthen the capacity of government agencies in engaging with climate funds.³⁶⁸ However, these grants are split between mitigation and adaptation programming and only nominal amounts have been disbursed to Pacific States.³⁶⁹ Ultimately, without a system of adaptation finance premised on distributive justice, disbursements risk being skewed away from Pacific States.

7. CONCLUSION

The principle of CBDR-RC calls for developed states that are historically responsible for climate change to assist developing states that are particularly vulnerable to its adverse effects to meet the costs of adaptation. However, there is a deficit between the amount of finance being raised and the rising costs of adapting to a warming planet. Developed states are failing to meet the aspirational target of US\$100 billion per year by 2020, and the costs of adaptation are continually rising. The finance gap comes at a time when a large number of developing states are vying for access to adaptation finance which poses the challenge of how to distribute limited amounts of finance in a reasonable and fair manner.³⁷⁰ For Pacific States, climate change is already posing existential threats and their small economies are dwarfed by the rising costs of adaptation. In this context, the primary research question addressed is ‘does the principle of CBDR-RC facilitate distributive justice in adaptation finance for Pacific States’.

Distributive justice seeks to allocate wealth and resources to alleviate inequalities. The research supports a finding that for distributive justice to be achieved in adaptation finance, a human security framing of

³⁶⁶ Remling and Persson (n 46) 30.

³⁶⁷ Kelly and Adger (n 26) 327; Adger (n 26) 4.

³⁶⁸ A feature of the Green Climate Fund is the Readiness and Preparatory Support Programme, while the Adaptation Fund provides grants through the Readiness Programme for Climate Finance.

³⁶⁹ Only the Federated States of Micronesia accessed grants through the Adaptation Fund’s Readiness Programme for Climate Finance (see <https://www.adaptation-fund.org/readiness/readiness-grants/> - Readiness Grants Approved to Date). As at 2018, the Green Climate Fund’s Readiness and Preparatory Support Programme had “least effect” to particularly vulnerable states; Samuwai and Hills (n 10) 160.

³⁷⁰ Remling and Persson (n 46) 16; Horstmann (n 88); Klein (n 290); Stadelmann et al (n 167).

vulnerability must be used as the mechanism for prioritising disbursements. A feature of the unique vulnerability of Pacific States is that they experience social, economic, and institutional inequalities that limits their ability to adapt. As the capacity to adapt is dictated by social, economic, and institutional capabilities, the presence of such inequalities will heighten vulnerability to climate change. The risk-hazard framing of vulnerability prioritises economic loss due to the occurrence of physical hazards and is blind as to the underlying drivers of vulnerability. Rather, it is the human security framing of vulnerability that is cognizant of these factors.

However, the research has found that the weak normativity of the principle of CBDR-RC has prevented distributive justice from being mandated when disbursing adaptation finance. Legal ambiguity over the term vulnerability means that no specific framing of vulnerability is mandated at law creating uncertainty on how disbursements are to be prioritised. The result is that there is no discernible pattern of disbursements by the Adaptation Fund, but rather an ad-hoc system of disbursements. Moreover, there is no prioritisation of states that are highly vulnerable to climate change on a human security framing. In response to the primary research question, this study finds that disbursements of adaptation finance risk being skewed away from vulnerable Pacific States that lack the capacity to adapt and it cannot be said that the principle of CBDR-RC has resulted in distributive justice for Pacific States.

7.1. Future Research

Adaptation finance has now shifted to a new era. In the post-Paris context, the Green Climate Fund has been established to boost global flows of adaptation finance. The research findings as to the fairness of disbursements in the Adaptation Fund are lessons that the Green Climate Fund must learn from to avoid the pitfalls that prevent distributive justice from being realised. In an ideal world, the COP and the board of the Green Climate Fund will adopt a concrete definition of vulnerability that prioritises social, economic, and institutional inequalities, and the annual pool of available finance far-exceeds the US\$100 billion goal. When these rose-tinted glasses are removed, it seems likely these lessons are being ignored. Both the *Paris Agreement* and the *Katowice Rulebook* overlooked a concrete definition of vulnerability and left voluntary the pledge made by developing states to scale-up financial contributions. There is a risk that disbursements from the Green Climate Fund are laissez-faire and ignore the prioritisation of particularly vulnerable states.

The Green Climate Fund is now entering its post-2020 phase of funding allocation and the issue of how to prioritise the disbursement of limited finance still exists.³⁷¹ While there has been little progress in operationalising vulnerability at law, a key opportunity exists to conduct empirical analysis into project proposals, approvals, and disbursements from the Green Climate Fund. How the Green Climate Fund is

³⁷¹ See Samuwai and Hills (n 10); Alessandro Antimiani et al, 'The Green Climate Fund as an Effective Compensatory Mechanism in Global Climate Negotiations' (2017) 77 *Environmental Science & Policy* 49.

operationalising vulnerability, and how its disbursement patterns prioritise vulnerable states, are questions that are ripe for future research.

7.2. Concluding Remarks

The need for financial assistance in Pacific States has only been heightened by the additional stress placed on them by the COVID-19 pandemic. As proclaimed to the United Nations General Assembly by Pohiva Tu'i'onetoa, the Prime Minister of Tonga:

while small island developing states including Tonga contribute to no more than 1 percent of global greenhouse gas emissions, it is unfortunate that we continue to bear the brunt of this climate injustice. As a result, Pacific Island countries continue to be imperilled by many tropical cyclones of unprecedented magnitude and descriptive nature ... and this is while we grapple with the distressing effects of the COVID-19 outbreak.³⁷²

There is hope for Pacific States that the pool of adaptation finance will grow and that the aspirational target of \$100 billion per year will be met. While the Trump Administration's withdrawal of the United States from the *Paris Agreement* took formal effect on 4 November 2020,³⁷³ President-Elect Joe Biden has committed to re-joining the United States to the *Paris Agreement* and to contribute to the Green Climate Fund in January 2021.³⁷⁴ As the planet continues to warm and the costs of adaptation rise, it is imperative that this pledge be realised and that vulnerable Pacific States receive their fair share.

³⁷² UN News, 'Pacific small islands and 'Big Ocean' nations at UN Assembly make the case for climate action, shift to clean energy' (25 September 2020) <<https://news.un.org/en/story/2020/09/1073852>> .

³⁷³ UN News, 'UN and partners express regret over US departure from Paris climate accord' (4 November 2020) <<https://news.un.org/en/story/2020/11/1076882>>.

³⁷⁴ Biden Harris, 'The Biden Plan for a Clean Energy Revolution and Environmental Justice' (2020) <<https://joebiden.com/climate-plan/>>.

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