

Climate Change Law (2019)

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In this chapter, the efforts of the international community to deal with climate change and climate-induced disasters is discussed and analysed through the lens of the 1992 United Nations Framework on Climate Change (UNFCCC),¹ the 2015 Paris Agreement² and the accompanying Decision 1/CP.21³ to implement the Agreement. An analysis of progress since Paris will be offered. However, at the time of writing, the world is facing a number of unprecedented challenges – a climate emergency, a global pandemic emergency, and an economic emergency which is worse than the Great Depression of 2008–9. This chapter covers International Disaster Law relating to climate change in 2019, and assesses how the international community is dealing with the climate emergency.

1 The Climate Emergency and the Best Available Scientific Evidence

The Oxford English Dictionary selected the term ‘climate emergency’ as its word for 2019. It defined it as ‘a situation in which immediate action is needed to reduce or stop climate change and prevent serious and permanent damage to the environment’.⁴

When alluding to the best available scientific evidence, a plethora of reports have been produced by the Intergovernmental Panel on Climate Change. In 2012, the (IPCC) Working Group II (WGII) released a Special Report Managing the Risks of Extreme Events and Disasters to Advance Climate Change

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1 United Nations Framework Convention on Climate Change, 9 May 1992 <http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf> last accessed (as any subsequent URL) on 2 July 2020.

2 Paris Agreement, 12 December 2015, <<https://unfccc.int/resource/docs/2015/cop21/eng/logro1.pdf>>.

3 UNFCCC, ‘Decision 1/CP.21 – Adoption of the Paris Agreement’ (29 January 2016) UN Doc FCCC/CP/2015/10/Add.1 <<http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>>.

4 See ‘Climate Emergency’, Oxford Learner’s Dictionaries (2020) <<https://www.oxfordlearnersdictionaries.com/definition/english/climate-emergency>>.

Adaptation (SREX).⁵ The risk of extreme events, influenced increasingly by climate change, was confirmed in the IPCC's Fifth Assessment Reports including Working Group I's Report Climate Change 2013: The Physical Science Basis,⁶ and WG II's Report Climate Change 2014: Impacts, Adaptation and Vulnerability.⁷ In 2018, the IPCC's Global Warming of 1.5°C Report (the 2018 1.5°C Report)⁸ estimated that global temperatures have already risen approximately 1.0°C above pre-industrial levels due to human activities. If this continues, global warming is likely to reach 1.5°C between 2030 and 2052 ('high confidence').⁹

The IPCC's 2019 Special Report on Climate and Land¹⁰ (the '2019 Land Report') states that 'climate change, including increases in frequency and intensity of extremes, has adversely impacted food security and terrestrial ecosystems as well as contributed to desertification and land degradation in many regions'.¹¹ Also, '[a]t the regional scale, changing land conditions can reduce or accentuate warming and affect the intensity, frequency and duration of extreme events'.¹² Meanwhile, its 2019 Special Report on the Ocean and Cryosphere in a Changing Climate¹³ (the '2019 Ocean and Cryosphere Report') states that 'over the last decades, global warming has led to widespread shrinking of the cryosphere, with mass loss from ice sheets and glaciers ('very high confidence'), reductions in snow cover ('high confidence') and Arctic sea ice

5 Christopher B Field and others (eds), *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation – Special Report of the Intergovernmental Panel on Climate Change* (CUP 2012).

6 Thomas F Stocker and others (eds), *Climate Change 2013: The Physical Science Basis – Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (CUP 2013).

7 Christopher B Field and others (eds), *Climate Change 2014: Impacts, Adaptation and Vulnerability* (CUP 2014).

8 Valérie Masson-Delmotte and others (eds), *Global Warming of 1.5°C – An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* (IPCC 2018).

9 'Headline Statements from the Summary for Policymakers' in Delmotte and others (n 8) <https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Headline-statements.pdf>.

10 Valérie Masson-Delmotte and others (eds), *Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems* (IPCC 2019).

11 See 'Summary for Policymakers' in Masson-Delmotte and others (n 10) para. A.2.

12 *Ibid.*, para. A.4.

13 Hans-Otto Poertner and others (eds), *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* (IPCC 2019).

extent and thickness, and increased permafrost temperature, which all exacerbate extreme events ('very high confidence').¹⁴

At the same time, the 2019 IPBES Global Assessment on Biodiversity and Ecosystem Services now warns that the decline in biodiversity is unprecedented and that unless action is taken to reduce the intensity of drivers of biodiversity loss, around 1 million species already face extinction, many within decades.¹⁵

More recently, 11,000 climate scientists announced that '[s]cientists have a moral obligation to clearly warn humanity of any catastrophic threat and to "tell it like it is" (...) [w]e declare clearly and unequivocally that planet Earth is facing a climate emergency.'¹⁶ Others warned that 'more than half of the climate tipping points identified a decade ago are now "active", with immediate threats including the loss of the Amazon rainforest and the great ice sheets of Antarctica and Greenland, all of which are currently undergoing measurable and unprecedented changes much earlier than expected. This amounts to an "existential threat to civilisation", which requires an "emergency response"'.¹⁷

One would like to think that these warnings about the climate emergency would shock the nations of the world into urgent actions to immediately reduce greenhouse gas emissions and ensure that a target of net zero by 2050 is reached. However, it seems that the ratification of the 2015 Paris Agreement has lulled the world into a false sense of security that the below 2°C targets are in place and will be met. At the time of writing, nothing could be further from the truth.

2 What Has the *Paris Agreement* Delivered?

The multilateral climate change negotiations under the UNFCCC have been underway now for twenty eight years.¹⁸ The ultimate objective of the UNFCCC is to achieve 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame

14 See 'Summary for Policymakers' in Poertner and others (n 13) para. A.1.

15 Eduardo S Brondizio and others (eds), *The Global Assessment Report on Biodiversity and Ecosystem Services* (IPBES 2019).

16 See William J Ripple and others, 'World Scientists' Warning of a Climate Emergency', (2020) 70 *BioScience*, 8.

17 Timothy M Lenton and others, 'Climate tipping points – too risky to bet against', (2019) 575 *Nature*, 592 (amended in 2020).

18 For an extensive summary of this history see: Rosemary Lyster, *Climate Justice and Disaster Law* (CUP 2015) Chapter 2. See also: Rosemary Lyster, 'Climate Change Law (2018)', (2019) 1 *Yearbook of International Disaster Law*, 388–397, where the Paris Agreement and the negotiations at the Twenty Fourth Conference of the Parties to the UNFCCC in 2018 are analysed.

sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.¹⁹ The Paris Agreement came into force on 4 November 2016²⁰ and a work program has been established to progressively deliver the key outcomes of the Agreement.²¹ The most recent negotiations under the UNFCCC took place in Madrid at the Twenty Fifth Conference of the Parties to the UNFCCC (COP 25) from 2–13 December 2019.

3.1 *A Summary of the Paris Agreement*

Under the Paris Agreement, the Parties agreed to ‘hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, to significantly reduce the risks and impacts of climate change’.²² Most of the details for implementing the Paris Agreement – known as ‘the Paris Rulebook’ – are encompassed in the COP 24 ‘Katowice climate package’²³ but are too extensive to be reproduced here. Under the Agreement, developed and developing country Parties must prepare, communicate and implement successive voluntary nationally determined contributions (NDCs), which will be pursued through domestic mitigation measures. Countries must regularly update and improve upon previous NDC and each successive commitment must reflect their highest possible ambition, in accordance with its common but differentiated responsibilities and respective capabilities, and in the light of different national circumstances. Countries must communicate their new NDCs every 5 years and be informed by a Global Stocktake, the first of which will be undertaken in 2023 and every five years thereafter.²⁴

The Paris Agreement establishes a global adaptation goal which aims to: enhance adaptive capacity; strengthen resilience; and reduce vulnerability to climate change.²⁵ All Parties must prepare a National Adaptation Plan and implement the agreed upon adaptation actions. Overall progress with achieving this global goal is part of the Global Stocktake.²⁶ The Agreement

19 Paris Agreement (n 2) para. 2.

20 See <<http://newsroom.unfccc.int/unfccc-newsroom/landmark-climate-change-agreement-to-enter-into-force/>>.

21 See UN Climate Change Secretariat, ‘Progress tracker – Work programme resulting from the relevant requests contained in decision 1/CP.21’ <https://unfccc.int/sites/default/files/resource/pa_progress_tracker_200617.pdf>.

22 Paris Agreement (n 2) para. 2(a).

23 Available at <<https://unfccc.int/process-and-meetings/the-paris-agreement/paris-agreement-work-programme/katowice-climate-package>>.

24 Paris Agreement (n 2) art. 14(2).

25 *Ibid.*, para. 7(1).

26 *Ibid.*, para. 7(14).

also endorses the permanence of the Warsaw international mechanism for loss and damage associated with climate change impacts (the WIM) including extreme events and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change.²⁷ In this regard, the Agreement requires Parties to take further action on aspects such as early warning systems, risk insurance facilities, climate risk pooling and other insurance solutions. However, and very significantly, the Parties have decided²⁸ that the Agreement does not involve or provide a basis for any liability or compensation for the impacts of climate change. Paragraph 50 of the Decision Adopting the Paris Agreement²⁹ requested the Executive Committee of the WIM to establish a Task Force on Displacement (TFD).

Art. 9 of the Paris Agreement makes it absolutely clear that '[d]eveloped country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.' Developed countries agreed to provide US\$100 billion per year to 2020. This confirms the funding promises made by the Parties under the 2010 *Cancun Agreements* to provide the same amount of funding between 2010–2020.

3 What has the Paris Agreement Delivered in 2019?

3.1 *The Parties to the UNFCCC and the Paris Agreement Express Concern*
At COP 25,³⁰ the Parties to the UNFCCC noted their concern at the state of the global climate system³¹ and re-emphasized 'with serious concern the urgent need to address the significant gap' between the Parties' mitigation efforts and the agreed temperature goal,³² mentioned above. They also recalled the need for significant adaptation which could be offset by enhanced mitigation³³ and the urgency to enhance ambition in both areas.³⁴ The Parties also recalled the commitment made by developed country Parties under the Paris Agreement to jointly mobilize US\$100 billion per year by 2020 to assist developing countries

27 UNFCCC, 'Decision 2/CP.19 – Warsaw international mechanism for loss and damage associated with climate change impacts' (31 January 2014) UN Doc FCCC/CP/2013/10/Add.1 <<http://unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf>>.

28 Paris Agreement (n 2) para. 51.

29 Decision Adopting the Paris Agreement (n 3).

30 UNFCCC, 'Draft Text on Decision 1/CP.25 Version 14/12/2019 07:59 Proposal by the President' <<https://unfccc.int/sites/default/files/resource/DT.COP25.i18.3.pdf>>.

31 *Ibid.*, para. 3.

32 *Ibid.*, para. 8.

33 *Ibid.*, para. 9.

34 *Ibid.*, para. 10.

climate change efforts. They noted the ongoing concern that developing countries face continued challenges in accessing financial, technology and capacity-building support.³⁵ The role of nature in addressing climate change and its impacts was also recognised as well as the need to address biodiversity loss and climate change in an integrated manner.³⁶ The imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities was also recalled.³⁷ The Parties welcomed the continuation of the Marrakech Partnership for Global Climate Action, which supports climate change collaborations between national and subnational governments, businesses and investors. They called on the high-level champions, who lead this initiative, to explore ways for enhancing the actions of the Parties and non-Party stakeholders.³⁸ It is clear that the Parties are concerned that actions required under the Paris Agreement are not being undertaken with sufficient urgency. Unfortunately, as the ensuing discussion shows, that concern is not being put into meaningful action.

3.2 *Emissions Reduction and the Global Temperature Goal*

After 28 years of negotiating under the UNFCCC and more recently the Paris Agreement, the task of meeting the temperature goal seems out of reach at present. The United Nations Environment Programme's 2019 Emissions Gap Report³⁹ issues a salutary warning that '[t]here is no sign of GHG emissions peaking in the next few years; every year of postponed peaking means that deeper and faster cuts will be required. By 2030, emissions would need to be 25 per cent and 55 per cent lower than in 2018 to (...) limit global warming to below 2°C and 1.5°C respectively'.⁴⁰ The World Meteorological Organization also announced that carbon dioxide in the atmosphere hit a record level of 407.8 parts per million in 2018 continuing to rise in 2019 and that the global average temperature in 2019 (January to October) was about 1.1 degrees Celsius above the pre-industrial period.⁴¹

It must be concluded that at present the targets remain out of reach. At COP 25, the Parties decided that in the second half of 2020 and concluding

35 *Ibid.*, para. 11.

36 *Ibid.*, para. 14.

37 *Ibid.*, para. 15.

38 *Ibid.*, para. 23.

39 UN Environment Programme, 'Emissions Gap Report 2019' (26 November 2019) <<https://wedocs.unep.org/bitstream/handle/20.500.11822/30797/EGR2019.pdf?sequence=1&isAllowed=y>>.

40 *Ibid.*, at xv.

41 See World Meteorological Organization, 'Greenhouse gas concentrations in atmosphere reach yet another high' (25 November 2019, press release) <<https://public.wmo.int/en/media/press-release/greenhouse-gas-concentrations-atmosphere-reach-yet-another-high>>.

at COP 28 in 2022 the second periodic review⁴² will take place, on the basis of the best available science. It will assess the aggregated effect of the steps taken by Parties to achieve the agreed long term climate goal;⁴³ and will not result in any alteration or redefinition of this goal.⁴⁴

3.3 *The Adaptation Goal*

The Adaptation Committee has developed six workstreams: coherence and collaboration; gender; regional centres and networks on adaptation; technical support and guidance; means of implementation; and communication and outreach.⁴⁵ It has also established a Task Force on National Adaptation Plans and it has developed work plans for 2016–2018 and 2019–2021.⁴⁶ At COP 25, the Parties recalled the need for significant adaptation which could be offset by enhanced mitigation⁴⁷ and the urgency to enhance ambition in both areas.⁴⁸ Be that as it may, as discussed below regarding climate finance, developing country efforts to adapt to extreme events and disasters will only be as effective as the finance flowing to them. It is woefully insufficient and showing no signs of improving.

3.4 *Report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts*⁴⁹

Following Paris, an Executive Committee of the WIM was established and has developed a five-year rolling work plan⁵⁰ to address the loss and damage

42 Above note UNFCCC, 'Decision 5/CP.25 – Scope of the second periodic review of the long-term global goal under the Convention and of overall progress towards achieving it' (16 March 2014) UN Doc FCCC/CP/2019/13/Add.1 <https://unfccc.int/sites/default/files/resource/cp2019_13a01E.pdf>.

43 *Ibid.*, para. 4.

44 *Ibid.*, para. 5.

45 See <<https://unfccc.int/process-and-meetings/bodies/constituted-bodies/adaptation-committee-ac/areas-of-work-adaptation-committee#eq-3>>.

46 See <<https://unfccc.int/process-and-meetings/bodies/constituted-bodies/adaptation-committee-ac/areas-of-work/ac-s-task-force-on-national-adaptation-plans-nap-taskforce>>.

47 *Ibid.*, para. 9.

48 *Ibid.*, para. 10.

49 UNFCCC, 'Report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts' (15 October 2019) UN Doc FCCC/SB/2019/5.

50 The Executive Committee of the Warsaw International Mechanism, 'Five-year rolling workplan' <<https://unfccc.int/sites/default/files/resource/Detailed%20workplan%20by%20strategic%20workstreams.pdf>>.

associated with extreme weather events and slow onset events.⁵¹ The efforts of the Executive Committee⁵² in 2018–19 have centred on: (a) slow onset events, (b) non-economic losses, (c) comprehensive risk management approaches (d) human mobility, including migration, displacement and planned relocation, and (e) action and support, including finance, technology and capacity building to address loss and damage associated with the adverse effects of climate change. In 2019, it established the Technical Expert Group on Comprehensive Risk Management to assist it with implementing this Workstream.⁵³

However, it is fairly clear that the Parties to the Paris Agreement are not entirely satisfied with the work of the Committee.⁵⁴ They agree that it needs further guidance to improve ‘its timeliness, relevance, visibility, coherence, complementarity, comprehensiveness, responsiveness and resourcing and the delivery and usefulness of its products and outputs.’⁵⁵ Parties are also encouraged to establish a loss and damage contact point through their respective national focal points.⁵⁶ A new body, the Santiago Network, was established to catalyse technical assistance in developing countries that are particularly vulnerable to the adverse effects of climate change.⁵⁷ The Executive Committee is also encouraged to draw upon the work of international processes, such as the 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015–2030.⁵⁸

3.5 *The Task Force on Displacement*

A key working group of the WIM Executive Committee is the Task Force on Displacement (TFD), established under the Paris Agreement. At COP 24, the Executive Committee made extensive recommendations⁵⁹ on averting, minimizing and addressing displacement based on the TFD’s report⁶⁰ comprising eighty-two pages. The TFD reported that between 2008–2016, eighty-six per

51 *Ibid.*, para. 25.

52 *Ibid.*, Part III.

53 See Report of the Executive Committee (n 49).

54 UNFCCC, ‘Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts – Proposal by the President – Draft decision – /CMA.2’ (15 December 2019) UN Doc FCCC/PA/CMA/2019/L.7.

55 *Ibid.*, para. 7.

56 *Ibid.*, para. 13.

57 *Ibid.*, para. 43.

58 *Ibid.*, para. 22.

59 For details on this see Lyster (n 18).

60 IOM, ‘Report of the Task Force on Displacement’ (16 September 2018) <https://environmentalmigration.iom.int/sites/default/files/2018_TFD_report_16_Sep_FINAL-unedited.pdf>.

cent of internal displacements were as a result of weather events accounting for a total 195 million displacements. Of these hydrometeorological events, floods accounted for fifty-two per cent of displacements followed by storms at thirty-two per cent.⁶¹ In addition to containing a list of recommendations, this report includes detailed summary reports on the activities of the Task Force on Displacement's work plan, making it essential reading for those working in this area. In 2019, the TFD provided an update⁶² on the implementation of all of its activities to COP 25.

As of September 2019, the membership of the TFD⁶³ is: the Least Developed Countries (LDC) Expert Group; the WIM Executive Committee (Loss and Damage); the United Nations Development Program and the International Labour Organization (Development); the United Nations Human Rights Commission and the International Federation of the Red Cross (Humanitarian); the IOM and the Platform on Disaster Displacement (Human Mobility); YOUNGO and the Advisory Group on Climate Change and Human Mobility (Civil Society); and the Adaptation Committee (Adaptation). This is an impressive collection of organisations which works together across issues and disciplines.

An important observation by the TFD is that the Green Climate Fund, discussed below, does not make explicit reference to climate-induced human mobility in terms of its objective which might hinder the possibility of finance on a large scale.⁶⁴ If there is no international funding for the relocation and resettlement of CDPs then the administrative and financial burden falls on domestic governments to manage internal displacements, or on those governments that are managing cross-border displacements.

3.6 *The Ongoing Funding Crisis*

It is very difficult to project the loss and damage that developing countries will experience in future as a result extreme events and disasters, and the costs of mitigation and adaptation in those countries. In October 2019, the Grantham Institute⁶⁵ estimated that in a scenario where global warming remains below 2°C and US\$200 billion-worth of adaptation measures are in place, the losses

61 *Ibid.*, para. 123.

62 See <<https://unfccc.int/process-and-meetings/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/task-force-on-displacement/implementation-updates-task-force-on-displacement#eq-2>>.

63 Report of the Executive Committee (n 49) 8, fig. 1.

64 Report of the Task Force on Displacement (n 60) para. 81(c)(b).

65 Rebecca Byrnes and Swenja Surminski, Addressing the impacts of climate change through an effective Warsaw International Mechanism on Loss and Damage – Submission to the second review of the Warsaw International Mechanism on Loss and Damage under the UNFCCC (Grantham Research Institute 2019).

start at US\$400 billion per year by 2030. The costs could grow to US\$4 trillion per year if the Earth experiences over 5.3°C of warming by 2100.⁶⁶ In July 2019, the Special Rapporteur for extreme poverty reported to the Office of the High Commissioner for Human Rights that climate change represents an emergency without precedent which will have devastating consequences for people in poverty. He stated that

[e]ven under the best-case scenario, hundreds of millions will face food insecurity, forced migration, disease and death. Climate change threatens the future of human rights and risks undoing the last 50 years of progress in development, global health and poverty reduction.⁶⁷

At COP 25, the Parties noted their ongoing concern that developing countries face continued challenges in accessing financial, technology and capacity-building support.⁶⁸ This is because pledges to the Green Climate Fund as at 30 April 2019 amount to only US\$10.3 billion equivalent, 99 per cent of which has been converted into contribution agreements/arrangements. Nevertheless, the Board has approved US\$5.0 billion to support the implementation of 102 climate change adaptation and mitigation projects and programmes in 97 developing countries. These projects and programmes are expected to attract US\$12.6 billion in direct public and private sector co-financing.⁶⁹

There are three other sources of funding for adaptation including the Adaptation Fund, established through a levy on the sale of international carbon credits under the Kyoto Protocol market mechanisms; the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF) which are managed through the Global Environment Facility (GEF). However, each of these sources of funding is under serious stress and the author has written extensively about this elsewhere.⁷⁰ The Adaptation Fund Board's 2019 report⁷¹ to COP 25 states that 'the cumulative receipts of only US\$887.1 million into the Adaptation Fund Trust Fund, as at 30 June 2019'.

66 *Ibid.*, 3–4.

67 HRC, 'Climate Change and Poverty – Report of the Special Rapporteur on extreme poverty and human rights' (17 July 2019) UN Doc A/HRC/41/39.

68 *Ibid.*, para. 11.

69 See Green Climate Fund, 'Eighth Report of the Green Climate Fund to the Conference of the Parties to the United Nations Framework Convention on Climate Change' (14 June 2019) GCF/B.23/10.

70 Lyster, *Climate Justice* (n 18) ch. 6.

71 See UNFCCC, 'Annual report of the Executive Board of the clean development mechanism to the Conference of the parties serving as the meeting of the Parties to the Kyoto Protocol' (7 October 2019) UN Doc FCCC/KP/CMP/2019/L.3.

There is no specific provision for CDPs and nor is funding demarcated for dealing with loss and damage under the WIM. In October 2013, the author⁷² suggested that a fossil fuel-funded Climate Disaster Response Fund be established under the UNFCCC to compensate the victims in developing countries, particularly vulnerable to the impacts of climate change. This Fund, consistently with other liability compensation funds, would place a levy on the world's top two hundred fossil fuel companies as identified by ClimateTracker.⁷³ In November 2013, Richard Heede⁷⁴ suggested that the 90 Carbon Majors should pay for adaptation cover potential climate liability claims. More recently, in 2019, the Grantham Institute⁷⁵ proposed the establishment of a Loss and Damage finance facility. In other words, there is no shortage of research done and suggestions made as to how to resolve this critical funding deficit.

It should be noted that the financial implications of Covid-19 are likely to be felt well into the future and this affects both the capacity of developing countries to cope as well as the willingness of developed countries to provide any additional funding for developing countries.

3.7 *Insurance in Developing Countries*

As mentioned above, the Paris Agreement denies compensation to the victims of climate change and rather requires Parties to enhance their understanding of 'risk insurance facilities, climate risk pooling and other insurance solutions' – in other words private sector responses. However, a real question is the reliability of the insurance system at a time when the world has witnessed, and is likely to continue witnessing, a series of catastrophic climate extremes.⁷⁶ Moreover, in the author's view, the Paris Agreement provisions are just 'words on a page'. They bear no relation whatsoever to the very significant barriers developing countries face in relying on insurance as a compensation mechanism. Insurance penetration even in developed countries is very low and it is even worse in developing countries.⁷⁷ Households and businesses in low- and middle-income

72 Rosemary Lyster, 'A Fossil Fuel-Funded Climate Disaster Response Fund under the UNFCCC Loss and Damage Mechanism', (2015) 4 *Transnational Environmental Law*, 125.

73 Climate Tracker Initiative, 'Unburnable Carbon – Are the world's financial markets carrying a carbon bubble?' (2011) <https://www.banktrack.org/download/unburnable_carbon/unburnablecarbonfullrev2.pdf>.

74 Richard Heede, 'Tracing anthropogenic carbon dioxide and methane emissions to fossil fuel and cement producers, 1854–2010', (2014) 122 *Climate Change*, 229.

75 Byrnes and Surminski (n 65).

76 See World Resources Institute in collaboration with UN Development Programme, UN Environment Programme and World Bank, *Decision Making in a Changing Climate: Adaptation Challenges and Choices* (World Resources Institute 2011).

77 For a full analysis of this see Howard Kunreuther and Rosemary Lyster, 'The Role of Public and Private Insurance in Reducing Losses from Extreme Weather Events and Disasters',

countries are beginning to access new index-based microinsurance. However, this is likely to reach only a small fraction of risk-prone households.⁷⁸

The Fiji Clearing House for Risk Transfer was established in 2017 at COP 23 to provide information on insurance and risk transfer. The Executive Committee of the WIM reported to COP 25 in December 2019 that the Clearing House contains information on 83 relevant institutions, 40 case studies and 29 tutorials. RISK TALK, developed in collaboration with the secretariat of the InsuResilience Global Partnership, is an interactive part of the Clearing House and uses artificial intelligence technology to connect those looking for tailored solutions with the world of risk transfer expertise. As at 26 September 2019, 137 specific questions had been posted and 179 responses provided. Those transactions have been viewed 5,962 times, cumulatively.⁷⁹ Clearly, the facility is enhancing the dissemination of information on insurance but the author doubts that this is in any way ameliorating the problems faced by developing countries in insuring themselves against extreme events and disasters. Is this really what developing countries need in a climate emergency?

3.8 *Implementation and Compliance*

The Paris Agreement requires an implementation mechanism to be established. It will consist of a committee that will be expert based and 'facilitative in nature and function in a manner that is transparent, non-adversarial, and non-punitive'. The committee will pay particular attention to the respective national capabilities of the countries in meeting their commitments under the Agreement, and any associated failures.⁸⁰ From a legal point of view, this is a weak implementation mechanism as no penalties for non-compliance are mentioned. Rather it is a political and diplomatic mechanisms for "naming and shaming" Parties that do not comply with their NDC, adaptation, and other commitments. The Paris Agreement Implementation and Compliance Committee (PAICC) held its first meeting from 2 to 5 June 2020. It is too early for the author to comment on the work of this Committee.

3.9 *Non-State Actors and the Climate Emergency*

There is no doubt that subnational governments, cities, corporations, including the finance sector, non-government organisations and individuals have responded to the temperature goal established under the Paris Agreement.

(2016) 19 *Asia Pacific Journal of Environmental Law*, 29 and Lyster, *Climate Justice* (n 18) ch. 5.

78 *Ibid.*, 125.

79 Report of the Executive Committee (n 49) para. 36.

80 Paris Agreement (n 2) para. 15.

Yet this should not distract the global community from the significant gaps in real action to deal with the Climate Emergency. A report, published in September 2019, titled *Global Climate Action from Cities, Regions and Businesses: Impact of Individual Actors and Cooperative Initiatives on Global and National Emissions*,⁸¹ aggregates climate mitigation commitments reported to some of the world's largest voluntary pledging and reporting platforms. It finds that the commitments 'made by more than 6,000 cities and regions and 1,500 companies in ten of the world's major emitting economies could reduce greenhouse gas (GHG) emissions by 1.2–2 gigatonnes of carbon dioxide equivalent (GtCO_{2e}) per year by 2030 – or roughly 4% of global emissions today.' These voluntary actions are to be commended but they barely make a dent in the scale of the task ahead.

4 Conclusions

This chapter provides a comprehensive overview of what the international negotiations on climate change have delivered. Unfortunately, the picture which emerges is rather bleak. Emissions are not going down and meeting the Paris temperature goal seems unlikely at present. On the adaptation and Warsaw International Mechanism front, funding emerges as a critical ongoing issue. Without funding, developing countries are unlikely to be able to take effective action on mitigation, adaptation and disaster risk reduction. The international negotiations are crucially important for keeping the goals and vision of the Paris Agreement alive. However, there needs to be far more concrete action, and far more support for the action, on the ground to try to ward off the worst effects of the climate emergency.

81 NewClimate Institute, Data-Driven Lab, PBL, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), Blavatnik School of Government and University of Oxford, *Global Climate Action from Cities, Regions and Businesses: Impact of Individual Actors and Cooperative Initiatives on Global and National Emissions (2019)* <https://newclimate.org/wp-content/uploads/2019/09/Report-Global-Climat-Action-from-Cities-Regions-and-Businesses_2019.pdf>.