

LOSS AND DAMAGE AND THE 21ST CONFERENCE OF THE PARTIES TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

*Dr. Wil Burns**

I.	OVERVIEW	415
II.	LOSS AND DAMAGE UNDER THE UNFCCC	419
III.	THE FUTURE OF LOSS AND DAMAGE IN INTERNATIONAL CLIMATE POLICYMAKING.....	426
A.	Develop A Substantive Framework to Address Climate Displacement	426
B.	Provide the Necessary Funding to Make Micro-insurance a Viable Loss and Damage Instrument.....	429
C.	Develop A Framework for Stocktaking on Loss and Damage.....	430
D.	Revisit the Issue of Liability and Compensation in the Future	431
IV.	CONCLUSION.....	433

I. OVERVIEW

The early focus of the Parties to the United Nations Framework Convention on Climate Change (“UNFCCC”)¹ was on programs and policies to reduce greenhouse gas emissions and emissions from land-use and forestry,² commonly referred to as mitigation. By the middle of the decade of 2000-2010, it also became increasingly obvious that the feckless efforts by the world community to reduce emissions necessitated a substantive commitment to adaptation, defined by the UNFCCC as efforts to moderate potential damages from climate change, or to leverage potential benefits.³

However, during the last decade there was also increasing recognition that even full-throated support of mitigation and adaptation programs are likely to prove insufficient to avert serious adverse impacts in many of the

* Ph.D. International Environmental Law from University of Wales-Cardiff School of Law. Dr. Burns is currently a Co-Director of the Washington Climate Geoengineering Consortium, a scholarly initiative of American University.

1. United Nations Framework Convention on Climate Change May 9, 1992, 31 I.L.M. 849 [hereinafter UNFCCC].

2. LAURA SCHÄFER & SÖNKE KREFT, LOSS AND DAMAGE: ROADMAP TO RELEVANCE FOR THE WARSAW INTERNATIONAL MECHANISM 4 (Germanwatch & Brot Für Die Welt, Mar. 2014), <https://germanwatch.org/en/download/9002.pdf>.

3. *Focus: Adaptation*, UNFCCC, <http://unfccc.int/focus/adaptation/items/6999.php> (last visited Dec. 26, 2015).

world's most climatically vulnerable States.⁴ The emissions reduction pledges made by the Parties to the UNFCCC to date, denominated Intended Nationally Determined Contributions ("INDCs"),⁵ currently put the world on track for temperature increases of between 2.7°–3.7°C by 2100.⁶ Moreover, given the fact that a substantial portion of the carbon dioxide emitted into the atmosphere will remain resident for tens to hundreds of thousands of years, manifestations of climate change, including temperatures and sea level rise may continue to rise for many centuries, or millennia, beyond the point of emissions stabilization.⁷ This is far above the dangerous climatic thresholds of 1.5°–2.0°C identified by scientists and policymakers.⁸ Moreover, even dramatic deepening of emissions reductions commitments would not likely help the world to avoid passing critical thresholds at this point.⁹ There are also clear limitations to adaptation responses to climate change in terms of minimizing potential impacts. These include cost constraints that preclude

4. See *Climate Change 2014, Synthesis Report, Summary for Policymakers*, UNFCCC (2014), at 18–19, http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf.

Without additional mitigation efforts beyond those in place today, and even with adaptation, warming by the end of the 21st Century will lead to high to very high risk of severe, widespread and irreversible impacts globally . . . Some risks of climate change, such as risks to unique and threatened systems and risks associated with extreme weather events, are moderate to high at temperatures 1°C to 2°C above pre-industrial levels.

5. *Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013, Further Advancing the Durban Platform*, UNFCCC (Jan. 31, 2014), at CP/2013/10, ¶ 2(b); *INDCs as Communicated by Parties*, UNFCCC, <http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx> (last visited Dec. 29, 2015) [hereinafter Decision 1/CP. 19].

6. *Paris Agreement: Stage Set to Ramp Up Climate Action*, CLIMATE ACTION TRACKER (Dec. 12, 2015), <http://www.climateactiontracker.org/news/257/Paris-Agreement-stage-set-to-ramp-up-climate-action.html>; Kelly Levin & Taryn Fransen, *World Resources Institute, Why are INDC Studies Reaching Different Temperature Estimates?*, WORLD RES. INST. (Nov 9, 2015), <http://www.wri.org/blog/2015/11/insider-why-are-indc-studies-reaching-different-temperature-estimates>.

7. Peter U. Clark, et al., *Consequences of twenty-first century policy for multi-millennial climate and sea-level change*, *Nature Climate Change*, Feb. 8, 2016, DOI: 101038/NCLIMATE2923, at 1-10.

8. Decision 1/CP.19, *supra* note 5, at Preamble; V. Ramanathan & Y. Feng, *On avoiding dangerous anthropogenic interference with the climate system: Formidable challenges ahead*, 105(3) *PNAS* 14245, 14245 (2008).

9. *Pathways to Deep Decarbonization*, IDDRI SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK, (2014), at Executive Summary VI, http://unsdsn.org/wp-content/uploads/2014/09/DDPP_Digit.pdf; Jeff Tollefson, *Is the 2C° World a Fantasy?*, 527 *NATURE* 436, 436–38 (Nov. 24, 2015), <http://www.nature.com/news/is-the-2-c-world-a-fantasy-1.18868> (last visited Dec. 30, 2015); Brad Plumer, *The Math on Staying Below 2C° of Global Warming Looks Increasingly Brutal*, *VOX* (Oct. 19, 2015), <http://www.vox.com/2015/10/19/9567863/climate-change-ambitious-cuts>.

optimal adaptive responses, adaptation responses that are not cost-effective, and “erosive” adaptation, that is, strategies that help families or populations cope in the short-term, but which can ultimately increase vulnerability.¹⁰

This sobering reality has led to growing support in the past decade for a focus on a concept known as “loss and damage.” While the term loss and damage is not defined under the UNFCCC or other legal instruments,¹¹ a generally recognized definition is “those impacts of climate change that will neither be mitigated, nor adapted to.”¹² In this context, “loss” is construed as “irrecoverable negative impacts,” such as loss of freshwater resources or culture or heritage, while “damage” are climatic manifestations from which ecosystems and human institutions can recover, such as impacts on infrastructure related to violent weather events or damage to mangroves from coastal surges.¹³

10. See generally, Koko Warner & Kees van der Geest, *Loss and Damage from Climate Change: Local-Level Evidence from Nine Vulnerable Countries*, 5(4) INT’L J. GLOB. WARMING 367–86 (2013); Mike Hulme et al., *Limits and Barriers to Adaptation: Four Propositions*, TYNDALL CTR. BRIEFING NOTE NO. 20 (July 2007), <http://www.tyndall.ac.uk/sites/default/files/bn20.pdf>; Linta M. Mathew & Sonia Akter, *Loss and Damage Associated with Climate Change Impacts*, HANDBOOK OF CLIMATE CHANGE MITIGATION AND ADAPTATION 1, 13–23 (2015), http://lkyspp.nus.edu.sg/wp-content/uploads/2015/05/Loss_and_Damage_March_2015-book-chapter.pdf.

11. *Current knowledge on relevant methodologies and data requirements as well as lessons learned and gaps identified at different levels, in assessing the risk of loss and damage associated with the adverse effects of climate change*, UNFCCC, Technical Paper, FCCC/TP/2012/1 (May 12, 2012), at 9, <http://www.unfccc.int/resource/docs/2012/tp/01.pdf> (last visited Dec. 29, 2015); Roda Verheyen, *Tackling Loss & Damage, A New Role for the Climate Regime*, LOSS AND DAMAGE, 1, 5 (2012), <http://www.lossanddamage.net/download/6877.pdf>.

12. Mizan R. Khan et al., *Assessing Microinsurance as a Tool to Address Loss and Damage in the National Context of Bangladesh* 1, 9, in LOSS AND DAMAGE (June 2013), <http://www.r4d.dfid.gov.uk/pdf/outputs/CDKN/bangladesh-microinsurance.pdf>; see also, Urmi A. Goswami, *UN Climate Change Negotiations: Developing and Developed Countries Divided on ‘Loss and Damage’*, THE ECON. TIMES (Dec. 8, 2012), http://www.articles.economicstimesin.diatimes.com/2012-12-08/news/35689136_1_edna-molewa-todd-stern-climate-change; R.J.T. Klein et al., *Adaptation Opportunities, Constraints, and Limits in CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY. PART A: GLOBAL AND SECTORAL ASPECTS. CONTRIBUTION OF WORKING GROUP II TO THE FIFTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE* 899, 906, https://www.ipcc-wg2.gov/AR5/images/uploads/WGIAR5-Chap16_FINAL.pdf (last visited Dec. 28, 2015) (residual loss and damage will occur from climate change despite mitigation and adaptation action).

13. Ainun Nishat, *A Range of Approaches to Address Loss and Damage from Climate Change Impacts in Bangladesh*, LOSS AND DAMAGE, 1, 7 (2013), <http://www.loss-and-damage.net/download/7069.pdf>; *Framing the Loss and Damage Debate*, LOSS AND DAMAGE, 1, 2 (2012), <https://www.germanwatch.org/fr/download/6673.pdf>.

Loss and damage encompasses an array of potential economic impacts, such as damage to infrastructure from coastal erosion and flooding,¹⁴ declines in crop production,¹⁵ or loss of fisheries.¹⁶ Moreover, it includes non-economic damages, such as loss of biodiversity and ecosystem services,¹⁷ loss of culture and sovereignty,¹⁸ and decline of indigenous knowledge.¹⁹

There are also both spatial and temporal scales to loss and damage. Currently, the majority of loss and damage associated with climate change is occurring at the local level. However, in the future, it is possible that critical global tipping points will be exceeded, manifesting itself in impacts of a potentially "inconceivable magnitude."²⁰ Loss and damage also has a temporal component, encompassing both impacts from extreme events (such as heat waves, drought and flooding), as well as slow-onset events with the potentially greatest impacts, including salinization, rising sea levels, desertification, and retreat of glaciers.²¹

There has been very little detailed research to date to quantify potential loss and damage costs over this century and beyond.²² However, the estimates that have been made are truly daunting. One recent study by the NGO Action Aid pegged the mean cost of loss and damage at \$275 trillion between 2000 and 2200.²³ The African Climate Policy Center of the United National Economic Commission for Africa's assessment of potential loss and damage on the continent concluded that these impact could reduce GDP in many sectors between 1% (under a "2°C World") up to 5% (in a "4+°C

14. Ivo Wallimann-Helmer, *Justice for Climate Loss and Damage*, 133 CLIMATE CHANGE 469, 477 (2015).

15. World Food Program Regional Bureau for Asia, *Loss and Damage: Repairing Shattered Lives*, 1 BLACK AND WHITE PAPER SERIES, No. 1, 1, (Mar. 2-3 2014), <http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp269945.pdf>.

16. *Loss and Damage*, THE ROAD THROUGH PARIS (Oct. 11, 2015), <http://www.theroadthroughparis.org/negotiation-issues/loss-and-damage>.

17. Erin Roberts et al., *Loss and Damage: When Adaptation is not Enough*, UNEP GLOB. ENVTL. ALERT SERV. (Apr. 2014), http://na.unep.net/geas/getUNEPPageWithArticleIDScript.php?article_id=111.

18. Nishat, *supra* note 13, at 24.

19. James Morrissey & Anthony Oliver-Smith, *Perspectives on Non-Economic Loss and Damage*, LOSS AND DAMAGE, 1, 11 (2013), <http://www.lossanddamage.net/download/7213.pdf>.

20. *Framing the Loss and Damage debate*, *supra* note 13, at 3; Rachel James et al., *Characterizing Loss and Damage from Climate Change*, 4 NATURE CLIMATE CHANGE 938, 938 (2014).

21. Linda Siegele, *The Theme of Slow Onset Impact*, LOSS AND DAMAGE, 1, 6 (2012), <https://www.germanwatch.org/en/download/6674.pdf>.

22. *Loss and Damage from Climate Change: the Cost for Poor People in Developing Countries*, ACTION AID (Nov. 2010), at 3, http://www.actionaid.org/sites/files/actionaid/loss_and_damage_-_discussion_paper_by_actionaid_-_nov_2010.pdf.

23. *Id.* at 11.

World.”)²⁴ Overall, Parry concluded that loss and damage may ultimately account for two-thirds of all potential impacts in all sectors.²⁵

II. LOSS AND DAMAGE UNDER THE UNFCCC

The concept of loss and damage has a long pedigree in international climate negotiations. In 1991, during the negotiations for the UNFCCC, Vanuatu, on behalf of the Alliance of Small Island States (“AOSIS”), called for the establishment of an insurance pool to assist small island States to cope with the impacts of rising sea levels;²⁶ however, this proposal was not picked up in the treaty’s text. At the 13th Conference of the Parties in 2007, the Parties adopted the “Bali Action Plan” calling for, *inter alia*, “[e]nhanced action on adaptation, including, *inter alia*, consideration of:

1. Risk management and risk reduction strategies, including risk sharing and transfer mechanisms such as insurance;
2. Disaster reduction strategies and means to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change.²⁷

At the 14th Conference of the Parties (“COP”) to the UNFCCC, AOSIS advanced a proposal for a “Multi-Window Mechanism to Address Loss and Damage.”²⁸ This included an Insurance Component to help developing countries with potentially severe loss and damage associated with extreme weather events, such as hurricanes or drought,²⁹ a Rehabilitation/Compensatory component to provide partial or total payouts for loss and damage associated with progressive negative impacts of climate change such as sea level rise and damage to ocean ecosystems,³⁰ and a Risk

24. *Loss and Damage in Africa*, UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA, 1, 17 (2014), <http://www.uncclearn.org/sites/default/files/inventory/uneca32.pdf>.

25. Matt Parry et al., *Assessing the Costs of Adaptation to Climate Change*, INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT 13 (Aug. 2009), <http://www.pubs.iied.org/pdfs/11501IIED.pdf>.

26. Vanuatu, *Negotiation of a Framework Convention on Climate Change*, UNFCCC (1991), <http://www.unfccc.int/resource/docs/a/wg2crp08.pdf>.

27. *Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 Dec. 2007, Bali Action Plan*, UNFCCC (2013), at Decision 1/CP.13, ¶ 1(c), <http://www.unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf> (last visited Nov. 17, 2015).

28. See generally, *Alliance of Small Island States, Multi-Window Mechanism to Address Loss and Damage from Climate Change Impacts*, UNFCCC (2008), http://www.unfccc.int/files/kyoto_protocol/application/pdf/aosisinsurance061208.pdf.

29. *Id.* at 1 & 5.

30. *Id.* at 1 & 7.

Management Component to support and promote risk assessment and provide critical operation to ensure operation of the other components.³¹ However, this proposal was not taken up by the Parties to the UNFCCC either in 2008, or after it was re-tabled as a submission in 2012.³²

Impetus to address loss and damage grew with the decision by the Parties at the 16th COP in 2010 to launch a work program “to consider . . . approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change.”³³ The program was placed under the rubric of the Cancun Adaptation Framework, which was also established at the 16th COP.³⁴ It was contemplated that the UNFCCC’s Subsidiary Body on Implementation³⁵ would formulate the work program, which would consist of a series of workshops and expert meetings.³⁶ At the 17th COP, the Parties agreed to explore a range of potential options to address loss and damage, including an international mechanism, and to consider recommendations at its next session.³⁷ At the 18th COP the Parties agreed to establish an institutional mechanism to address loss and damage at its next session in Warsaw.³⁸

While there was a consensus to establish a loss and damage mechanism at the 19th COP in Warsaw, its characterization and scope were hotly contested. Developing State Parties pressed to establish the Mechanism as

31. *Id.* at 2.

32. Verheyen, *supra* note 11, at 4.

33. *Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 Nov. to 10 Dec. 2010, The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention*, UNFCCC, at Decision 1/CP.16, at ¶ 26–27, <http://www.unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf> (last visited Nov. 16, 2015).

34. *Id.* ¶ 13. The overarching purpose of the Cancun Adaptation Framework is to reduce climatic vulnerability and strengthen resilience of developing countries. It includes five clusters, including implementation, support, institutions, principles and stakeholder engagement. *Cancun Adaptation Framework*, UNFCCC, <http://www.unfccc.int/adaptation/items/5852.php> (last visited Jan. 1, 2016).

35. UNFCCC, *supra* note 1, at art. 10.

36. *Id.*

37. *Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 Nov. to 11 Dec. 2011, Work Programme on Loss and Damage*, UNFCCC (2011), at Decision 7/CP.17, http://www.unfccc.int/meetings/durban_nov_2011/session/6294/php/view/decisions.php (last visited Nov. 17, 2015) [hereinafter UNFCCC Durban].

38. *Report of the Conference of the Parties on its eighteenth session, held in Doha from 28 Nov. to 8 Dec. 2012, Approaches to Address Loss and Damage Associated with Climate Change Impacts in Developing Countries that are Particularly Vulnerable to the Adverse Effects of Climate Change to Enhance Adaptive Capacity*, Decision 3/CP.18, UNFCCC, http://www.unfccc.int/documentation/documents/advanced_search/items/6911.php?prif=600007270#beg (last visited Nov. 20, 2015).

an independent institution, rather than seat it under the Cancun Adaptation Framework. This position was resisted by developed State Parties. Some of them contended that the concepts of loss and damage and adaptation cannot be separated, and thus should be considered together.³⁹ Other developed States contended that establishment of a third pillar under the UNFCCC would further increase the complexity of the regime.⁴⁰ Many developed countries also feared that creation of an independent mechanism might open the door to the imposition of liability for climate-related impacts by decoupling the concept from adaptation responses.⁴¹

Ultimately, a compromise was reached in the drafting of the Warsaw International Mechanism for Loss and Damage (“WIM”),⁴² which was adopted in a decision by the Parties at the 19th Conference of the Parties. While the Parties agreed to establish the WIM under the Cancun Adaptation Framework,⁴³ it also provided for its review, “including its structure, mandate and effectiveness,” at the 22nd Conference of the Parties in 2016.⁴⁴

By its terms, the WIM was established to address climate change-associated loss and damage, both in terms of extreme weather and slow-onset events in vulnerable developing countries.⁴⁵ The WIM is tasked with three primary functions, reflecting both functional modes of action (action approaches) and systemic modes of actions (signaling areas of concern).⁴⁶

39. *Submission by Norway, 11 November 2013, Institutional arrangements under the UNFCCC for approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change to enhance adaptive capacity*, UNFCCC, at 1, http://www.unfccc.int/files/adaptation/application/pdf/norway_1_d.pdf (last visited Dec. 29, 2015).

40. Elisa Calliari, *Loss and Damage: A Critical Discourse Analysis*, FONDAZIONE ENI ENRICO MATTEI (Aug. 4, 2014), <http://www.feem.it/userfiles/attach/201410221625554NDL2014-084.pdf>. See also, Jaspreet Kindra, *The Climate Loss and Damage Mechanism: Whys and Why Nots*, IRIN, <http://www.irinnews.org/report/99224/the-climate-loss-and-damage-mechanism-whys-and-why-nots>, (last visited Dec. 28, 2015).

41. Axel Bojanowski, *UN Conference: European Trick Delivers Climate Compromise*, SPIEGEL ONLINE INTERNATIONAL (Nov. 25, 2013, 12:49 PM), <http://www.spiegel.de/international/world/delegates-reach-deal-at-warsaw-climate-conference-a-935474.html>.

42. *Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2014, Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, UNFCCC, at Decision 2/CP.19, <http://www.unfccc.int/resource/docs/2013/cop19/eng/10a01.pdf> (last visited Dec. 18, 2015) [hereinafter UNFCCC, *COP19*].

43. *Id.* ¶ 1.

44. *Id.* ¶ 15.

45. *Id.* ¶ 1.

46. Schäfer & Krefl, *supra* note 2, at 9–10.

1. "Enhancing knowledge and understanding of comprehensive risk management approaches to address loss and damage." Methods to facilitate this will include seeking to address gaps in knowledge and expertise to address loss and damage, collection, sharing, management and use of relevant data and information and a collation of best practices, challenges and lessons learned;⁴⁷
2. "Strengthening dialogue, coordination, coherence and synergies among relevant stakeholders." This function is to be effectuated by spearheading and coordinating assessment and implementation of approaches to address loss and damage, and to foster dialogue, coordination and synergies among pertinent stakeholders, institutions and key processes and initiatives;⁴⁸
3. "Enhancing action and support, including finance, technology and capacity building." This should include providing technical support and guidance to those seeking to address loss and damage, information and recommendations to the Conference of the Parties on how to reduce risks and manifestations of loss and damage, and efforts to mobilize expertise, financial support, technology and capacity-building.⁴⁹

The WIM also established an Executive Committee, accountable to the Conference of the Parties to the UNFCCC,⁵⁰ with annual reporting responsibilities to its Subsidiary Body for Scientific and Technological Advice,⁵¹ and Subsidiary Body for Implementation.⁵² The Executive Committee was tasked by the Parties with development of an initial two-year work plan to effectuate the Mechanism's functions.⁵³

At its 20th Conference of the Parties, the Parties approved the WIM Executive Committee's initial two-year work plan.⁵⁴ Moreover, the Parties

47. UNFCCC, *COP19*, *supra* note 42, at Decision 2/CP.19, ¶ 5(a).

48. *Id.* at Decision 2/CP.19, ¶ 5(b).

49. *Id.* at Decision 2/CP.19, ¶ 5(c).

50. *Id.* at Decision 2/CP.19, ¶ 2.

51. UNFCCC, *supra* note 1, at art. 9.

52. UNFCCC, *COP19*, *supra* note 42, at Decision 2/CP.19, ¶ 3.

53. *Id.*

54. *Report of the Conference of the Parties on its Twentieth Session, Lima, 1-12 Dec. 2014, Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, UNFCCC (Dec. 10, 2014), at Decision 2/CP.20, ¶ 1, http://www.unfccc.int/documentation/documents/advanced_search/items/3594.php?rec=j&prifef=600008359#beg (last visited Nov. 22, 2015).

fleshed out terms of the Committee, including qualifications of members, composition and terms of office.⁵⁵

The Executive Committee released its initial two-year work plan in 2014.⁵⁶ The work plan was comprised of nine action areas, including how loss and damage impact vulnerable populations; enhancement of knowledge of risk management approaches, such as insurance and social protection; enhanced data on slow onset events; enhancement of knowledge of climate's impact on migration, displacement and human mobility, and development of a proposed five-year work plan to be considered by the Parties at the 22nd Conference of the Parties.⁵⁷ The Executive Committee released its report of the work at its first meeting and its aftermath at the 21st Conference of the Parties in Paris.⁵⁸ The Committee outlined its course of work to date on the two-year work plan, including, efforts to enhance understanding of the impacts of loss and damage, efforts to collaborate with key stakeholders, including disaster risk management and humanitarian organizations, and efforts to raise awareness of non-economic loss and damage and channels for collaboration.⁵⁹

However, the future application of loss and damage principles within the UNFCCC was complicated by the effort of many parties to incorporate some form of it into an agreement to address climate change beyond 2020. At the 17th Conference of the Parties in 2011, the Parties acknowledged the need to strengthen the UNFCCC to avert the specter of passing critical temperature thresholds.⁶⁰ To effectuate this, they agreed to establish a negotiating process, denominated the Durban Platform for Enhanced Action, "to develop a protocol, another legal/instrument or an agreed outcome with legal force under the Convention applicable to all Parties."⁶¹ The proposed agreement was slated to be adopted at the 21st COP in Paris, and to come

55. *Id.* ¶ 4–7.

56. *Subsidiary Body Scientific and Technological Advice, Forty-first session, Lima, 1–6 December 2014; Subsidiary Body for Implementation, Lima, 1–8 December 2014, Report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, UNFCCC, at FCCC/SB/2014/4, <http://www.unfccc.int/resource/docs/2014/sb/eng/04.pdf> (last visited Nov. 30, 2015).

57. *Id.* at Annex II.

58. *Id.*

59. *Id.* ¶ 21–23.

60. UNFCCC Durban, *supra* note 37, at Decision 1/CP.17, Preamble, <http://www.unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=2> (last visited Nov. 27, 2015).

61. *Id.* ¶ 2.

into effect in 2020.⁶² This process culminated in the adoption of the Paris Agreement at COP21.⁶³

Many developing countries fought to include a loss and damage provision in the Paris Agreement, believing that this would increase the issue's saliency in the years to come, while many developed countries sought to exclude it.⁶⁴ As a consequence, loss and damage arguably became "one of the most fraught issues in the international climate negotiations."⁶⁵ Ultimately, developing countries deleted references to liability or compensation from their proposal, eliminating the strongest point of contention with developed countries.⁶⁶ The decision by the United States to drop its opposition to including loss and damage in the draft of the Paris Agreement's text may have been decisive in paving the way for inclusion in the final version prior to the 21st Conference of the Parties.⁶⁷ However, several different options remained in the latter stages of the negotiations for the text of the Paris Agreement, including simply acknowledging the importance of loss and damage, or seeking to flesh out specific potential responses.⁶⁸ Moreover, some Parties advocated the establishment of a new standalone international mechanism to address loss and damage under the

62. *Id.* ¶ 4.

63. *Adoption of the Paris Agreement*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (2015), <http://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>, (hereinafter *Paris Agreement*). The Paris Agreement, *inter alia*, calls for "[h]olding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels . . ." *Id.* at art. 2(1)(a). Further, to aim to peak greenhouse gas emissions "as soon as possible . . . and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century . . ." *Id.* at art. 4(1).

64. See generally, *Loss and Damage*, CLIMATE NEXUS (Oct. 11, 2015), <http://www.theroadthroughparis.org/negotiation-issues/loss-and-damage>.

65. *Id.*; see also, John Upton, *Paris Pact May Hinge on 'Loss and Damage' Dispute*, CLIMATE CENT. (Nov. 11, 2015), <http://www.climatecentral.org/news/dispute-threatens-paris-climate-agreement-19666>.

66. Makereta Komai, *Pacific Islands Fight to Keep Loss and Damage in COP21*, PARIS MATANGI TONGA ONLINE, (Nov. 29, 2015, 12:10), <http://www.matangitonga.to/2015/11/29/pacific-islands-fight-keep-loss-and-damage-cop21-paris>.

67. *AD HOC WORKING GROUP ON THE DURBAN PLATFORM FOR ENHANCED ACTION*, Second session, part eleven, 19-23 October 2015, Bonn, Germany, Draft Agreement and Draft Decision on Workstreams 1 and 2 of the Ad Hoc Working Group on the Durban Platform for Advanced Action, Work of the ADP Contact Group, UNFCCC, at Art. 5, <https://www.unfccc.int/files/bodies/application/pdf/ws1and2@2330.pdf> (last visited Nov. 30, 2015).

68. *Negotiation Updates COP 21/CMP 11*, UNITED NATIONS (Dec. 12, 2015), http://unfccc.int/meetings/paris_nov_2015/in-session/items/9320.php.

rubric of the Paris Agreement, while others supported serving the new agreement through the Warsaw International Mechanism.⁶⁹

The Parties to the UNFCCC ultimately decided to include a provision on loss and damage in the Paris Agreement. However, they opted not to establish a discrete loss and damage mechanism, but rather to make the existing WIM “subject to the authority and guidance” of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (“CMP”).⁷⁰ The decision of the Parties adopting the Paris Agreement also expressly provided that the loss and damage provision of the Agreement would “not involve or provide a basis for any liability or compensation.”⁷¹ This provision was critical for engendering support by developed countries, who for the most part opposed creation of potential legal remedies for climatic impacts.⁷²

The Paris Agreement sets forth a number of potential areas for facilitation and cooperation in the context of loss and damage, including establishment of early warning systems, emergency preparedness, responses to slow onset and irreversible events, comprehensive risk assessment and management, establishment of risk insurance facilities, addressing of non-economic losses, and strategies to enhance resilience of human institutions and ecosystems.⁷³ The Parties also requested that the WIM Executive Committee establish an information clearinghouse for insurance and risk transfer mechanisms,⁷⁴ as well as a task force to address climate-related population displacement.⁷⁵ Finally, the Agreement authorized the CMP to enhance and strengthen the WIM in the future.⁷⁶

69. *Id.*

70. *Paris Agreement*, *supra* note 63, at art. 8(2).

71. *Id.* ¶ 52.

72. Kathleen Mogelgaard & Heather McGray, *When Adaptation is Not Enough: Paris Agreement Recognizes “Loss and Damage”*, WORLD RESS. INST. (Nov. 9, 2015), <http://www.wri.org/blog/2015/12/when-adaptation-not-enough-paris-agreement-recognizes-%E2%80%9Closs-and-damage%E2%80%9D>; Ben Adler, *Here’s Why the Words “Loss and Damage” are Causing Such a Fuss at the Paris Climate Talks*, GRIST (Dec. 8, 2015), <http://grist.org/climate-energy/heres-why-the-words-loss-and-damage-are-causing-such-a-fuss-at-the-paris-climate-talks/>; John Kerry, the U.S. Secretary of State, contended that the creation of a potential legal remedy for loss and damage within the Paris Agreement Framework would have doomed the agreement with Congress in the United States. Saleemul Huq & Roger-Mark De Souza, *Climate Compensation: How Loss and Damage Fared in the Paris Agreement*, NEW SECURITY BEAT (Jan. 12, 2016), <http://www.newsecuritybeat.org/2016/01/loss-damage-fared-paris-agreement/>.

73. *Paris Agreement*, *supra* note 63, at art. 8(4).

74. *Id.* ¶ 49.

75. *Id.* ¶ 50.

76. *Id.* at art. 8(2).

III. THE FUTURE OF LOSS AND DAMAGE IN INTERNATIONAL CLIMATE POLICYMAKING

The focus of the WIM's Executive Committee to date has been on enhancing knowledge about loss and damage. This is assuredly a critical priority given substantial information gaps, including the need for detailed localized risk assessments, assessment of risk management options, and developing better methodologies for assessing non-economic climatic impacts.⁷⁷ However, as several negotiators for developing countries on the loss and damage issue observed recently, the key now is turning words "into concrete action."⁷⁸ As the Parties prepare to review the WIM at COP22 in Morocco,⁷⁹ I will outline in the following sections some ways that I believe that the concept of loss and damage could be fruitfully operationalized.

A. Develop A Substantive Framework to Address Climate Displacement

Manifestations of climate change, including sea-level rise, extreme weather events, and drought and water scarcity have already resulted in the displacement of an estimated 26 million people globally.⁸⁰ It has been projected that the total number of so-called "climate refugees" could swell to 200 million or more by 2050, or more than twenty times those currently protected by the United Nation's High Commissioner for Refugees.⁸¹ Beyond the human tragedy of this plight, displacement of this magnitude

77. Jonathan G. Lashley & Koko Warner, Evidence of Demand for Microinsurance for Coping and Adaptation to Weather Extremes in the Caribbean, 133 CLIMATIC CHANGE 101, 101-02 (2015); Nicola Ranger et al., *Open Questions About How to Address 'Loss and Damage' From Climate Change in the Most Vulnerable Countries: a Response to the Cancún Adaptation Framework*, CTR. FOR CLIMATE CHANGE ECON. AND POL'Y & GRANTHAM RES. INST. ON CLIMATE CHANGE AND THE ENV'T, 1, 16-17 (2011), <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/03/PP-Cancun-Adaptation-Framework-response.pdf>.

78. Juan P. Hoffmaister et al., *Warsaw International Mechanism for Loss and Damage: Moving From Polarizing Discussions Towards Addressing the Emerging Challenges Faced by Developing Countries*, LOSS AND DAMAGE (Jan. 6, 2014), <http://www.lossanddamage.net/4950>.

79. Huq & De Souza, *supra* note 72.

80. Jason Singer, *Climate Refugees: A Human Cost of Global Warming*, WORLD WATCH INSTITUTE (July 30, 2012), <http://www.worldwatch.org/climate-refugees-human-cost-global-warming> (last visited Dec. 31, 2015).

81. Frank Biermann & Ingrid Boas, *Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees*, 10(1) GLOBAL ENVTL. POL. 60, 72 (Feb. 2010).

“could also lead to international conflict of an unprecedented scale,”⁸² as well as economic instability.⁸³

Population displacement was recognized as a key element for consideration in negotiation of a loss and damage provision in the Paris Agreement.⁸⁴ The G77 advocated for inclusion of a “climate change displacement coordination facility” in the Paris Agreement,⁸⁵ including potential provisions for emergency relief, organized migration and planned relocation, and compensation measures for those were displaced.⁸⁶ However, as indicated above, the Parties in their decision adopting the Paris Agreement opted for far more tepid language, merely calling for a task force to make recommendations on how to address climate-related population displacement.⁸⁷

Given the pressing, and steadily growing, threat of climate displacement, the Parties should immediately consider the following measures:

1. Facilitate national acceptance of displaced persons. While some populations displaced by climate change may ultimately be able to return to their homes, most ultimately will not.⁸⁸ Moreover, the Intergovernmental Panel on Climate Change has recognized that in some cases migration may constitute “an effective adaptation strategy.”⁸⁹ The WIM Task Force should recommend standards for State acceptance of displaced populations,

82. *Climate Change and Forced Displacement*, Sabin Center for Climate Change Law, COLUMBIA (Dec. 31, 2014), http://web.law.columbia.edu/sites/default/files/microsites/climate-change/climate_change_and_forced_displacement.pdf (last visited Dec. 31, 2015).

83. Mariya Gromilova & Nicola Jägers, *Climate change induced displacement and international law*, RESEARCH HANDBOOK ON CLIMATE CHANGE ADAPTATION LAW 71 (Jonathan Verschuuren, ed. 2013).

84. *Report of the Conference of the Parties on its Eighteenth Session*, Decision 3/CP.18, *supra* note 38, ¶ 7(a)(vi).

85. *Ad Hoc Working Group on the Durban Platform for Enhanced Action, Working Document, Second Session, Part Ten, 31 August-4 September 2015*, UNFCCC, at 5, https://www.unfccc.int/files/bodies/application/pdf/adp2-10_4sep2015t0145_wd.pdf (last visited Dec. 31, 2015).

86. Elisa Calliari, *Special COP31: What Role for Climate Migrants in the Paris Agreement?*, CLIMATE POLICY OBSERVER (Dec. 9, 2015), <http://climateobserver.org/special-cop21-what-role-for-climate-migrants-in-the-paris-agreement/>.

87. *Paris Agreement*, *supra* note 63, ¶ 50.

88. Biermann & Boas, *supra* note 81, at 75.

89. *Intergovernmental Panel on Climate Change, Working Group II*, CLIMATE CHANGE 2014: IMPACTS, ADAPTATION AND VULNERABILITY, SUMMARY FOR POLICYMAKERS, 1, 20 (2014), https://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf.

- perhaps based on a formula that reflects the principle of common but differentiated responsibilities, such as historical levels of greenhouse gas emissions or GDP;
2. Develop guidelines for providing financial assistance to developing States to ameliorate displacement and facilitate re-settlement of displaced peoples. The WIM Task Force should be tasked with developing recommendations to provide technical assistance to developing countries, and perhaps NGOs, to help prevent displacement and to develop resettlement programs. That should include incorporation of such plans into National Adaptation Plans of Action⁹⁰ to help facilitate funding for such programs;
 3. Develop a proposal for international recognition of climate refugees. As Glahn observed, there are currently no international treaties, protocols or guidelines that provide protection for climate refugees, including the 1951 Convention Relating to the Status of Refugees and its 1967 Protocol, which extends protection and assistance only to those fleeing "persecution."⁹¹ Formal recognition of interests of climate refugees would imbue them with pertinent protections under international law, including a right to self-determination, as well as help to mobilize resources

90. National Adaptation Plans ("NAPAs") are designed to enable developing country Parties to, *inter alia*, identify medium and long-term adaptation needs, as well as strategies and programs to implement such needs. *Report of the Conference of the Parties on its eighteenth session, held in Doha from 26 November to 8 December 2012*, Decision 12/CP.1.8, UNFCCC, <http://www.unfccc.int/resource/docs/2012/cop18/eng/08a02.pdf#page=3> (last visited Jan. 1, 2016).

91. Benjamin Glahn, 'Climate Refugees?' *Addressing the International Legal Gaps*, INT'L BAR ASS'N (Jun. 11, 2009), <http://www.ibanet.org/Article/Detail.aspx?ArticleUid=B51C02C1-3C27-4AE3-B4C4-7E350EB0F442>; *see also*, *Ioane Teitiota v. The Chief Executive of the Ministry of Business Innovation and Employment*, CIV-2013-4043528 [2013] NZHC 3125, 26 November 2013 (Explaining that the High Court of New Zealand rejected the claim of a resident of Kiribati that he should be accorded refugee status in New Zealand under the Refugee Convention, on the grounds that sea-level rise might ultimately render his home nation uninhabitable. The court held that this would broaden the scope of refugees beyond what appeared to be contemplated in the Convention.) There are regional agreements that might provide protections for climate refugees. For example, the 1969 Organization of African Unity Convention Governing the Specific Aspects of Refugee Problems in Africa includes in its definition of protected peoples, any person compelled to leave his or her country because of "... events seriously distributing public order in either part or the whole of his country of origin or nationality." Convention Governing the Specific Aspects of Refugee Problems in Africa (OAU Convention), Organization of African Unity 1969, 10001 UNTS 45, at art. 1(2). *See also* Cartagena Declaration on Refugees, adopted at the Colloquium on the International Protection of Refugees in Central America, Mexico and Panama on 22 Nov. 1984, at sec. III(3) (protecting peoples, *inter alia*, under "circumstances have seriously disturbed public order.")

to protect refugee interests from relevant bodies, such as the United Nations High Commissioner for Refugees, the International Organization for Migration and pertinent NGOs. The WIM Task Force should be instructed to develop standards for recognition of climate refugees for possible incorporation into current asylum regimes, a new convention, or voluntary guiding principles.⁹²

B. Provide the Necessary Funding to Make Micro-insurance a Viable Loss and Damage Instrument

The decision adopting the Paris Agreement, the Agreement's section on loss and damage, and the Executive Committee of the WIM have suggested that insurance could be an important element of minimizing loss and damage.⁹³ Indeed, many commentators and policymakers have touted the potential role of "micro-insurance." In exchange for small regular premium payments, micro-insurance policies have the potential to protect low-income people against specific threats, include climate-related perils such as crop losses and flood damage to infrastructure.⁹⁴ In the context of loss and damage, insurance can serve as an effective risk transfer mechanism that protects the economic viability of households including "the ability to earn a livelihood and securing material assets."⁹⁵ As Mechler and Linnerooth-Bayer explain:

92. Glahn, *supra* note 91; see generally, Lana Goral, *Climate Change and State Responsibility—Migration as a Remedy?*, LUND UNIVERSITY 1, 18–22 (Autumn 2014) (unpublished A.M. thesis, Lund University) (on the file with Lund University Libraries), <http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=4905454&fileId=5010730>.

93. *Paris Agreement*, *supra* note 63, at ¶ 49 & art. 8(4)(f); *Report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts*, *supra* note 56, at 8.

94. Rachele Pierro, *Microinsurance and DRR: Challenges and Opportunities in the Context of Climate Change*, CHRISTIAN AID (2007), at 2, <http://www.microfinancegateway.org/sites/default/files/mfg-en-paper-micro-insurance-drr-challenges-and-opportunities-in-the-context-of-climate-change-2007.pdf>.

95. Christoph Bals, Koko Warner & Sonja Butzengeiger, *Insuring the Uninsurable: Design Options for a Climate Change Funding Mechanism*, 6 CLIMATE POL'Y 637, 638 (2007).

Micro-insurance can break the “cycle of poverty” by providing low-income households, farmers, and businesses with access to post disaster liquidity, thus securing their livelihoods and providing for reconstruction. As insured households and farms are more creditworthy, insurance can also promote investments in productive assets and higher-risk/higher-yield crops.⁹⁶

Unfortunately, the limited experience with micro-insurance to date indicates that it may not be commercially viable without national or international subsidies.⁹⁷ One of the priorities of the WIM Executive Committee should thus be to determine the amount of financial assistance that would be essential to launch a global micro-insurance program, as well as to explore potential avenues of finance.

C. Develop A Framework for Stocktaking on Loss and Damage

One of the most salutary provisions of the Paris Agreement is Article 14, which provides for a global stocktaking every five years of the Agreement’s implementation⁹⁸ in several contexts, including the ambition of Party mitigation and adaptation commitments, mobilization and provision of support and response to the latest reports of the Intergovernmental Panel on Climate Change.⁹⁹ As several commentators have noted, the stocktaking process could ensure the Agreement’s dynamism and durability, helping it to

96. Reinhard Mechler et al., *Disaster Insurance for the Poor?*, PROVENTION CONSORTIUM & IIASA (July 2006), http://reliefweb.int/sites/reliefweb.int/files/resources/A8E4E438D6A45E78C12572DE00486DB2-Full_Report.pdf; Joanne Linnerooth-Bay & Stefan Hochrainer-Stigler, *Financial Instruments for Disaster Risk Management and Climate Change Adaptation*, 133 CLIMATIC CHANGE 85, 90 (2015).

97. Khan, Roddick & Roberts, *supra* note 12, at 12–13; Joanne Linnerooth-Bayer et al., *Climate Insurance as Part of a Post-Kyoto Adaptation Strategy*, IIASA & GERMANWATCH (Oct. 29, 2008), at 7, <http://germanwatch.org/klima/insur08.pdf>.

98. *Paris Agreement*, *supra* note 63, at art. 14. “The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement shall periodically take stock of the implementation of this Agreement to assess the collective progress towards achieving the purpose of this Agreement and its long-term goals (referred to as the ‘global stocktake’).” *Id.* at art. 14(1).

99. *Id.* ¶ 100.

respond to emerging science and technological innovation,¹⁰⁰ as well as driving the Parties to more ambitious future commitments.¹⁰¹

At the current time, the stocktaking process does not explicitly encompass the Paris Agreement's loss and damage provision. The Ad Hoc Working Group on the Paris Agreement, which has been tasked with identifying the contours of the stocktaking process,¹⁰² should include provisions for engaging in stocktaking of the loss and damage provision to ensure its optimal development. This might include organization of ministerial-level stocktaking forums in conjunction with pertinent institutional bodies, such as the biennial Global Platform for Disaster Risk Reduction,¹⁰³ or the Intergovernmental Panel on Climate Change, in conjunction with its formulation of its assessment reports.¹⁰⁴

D. Revisit the Issue of Liability and Compensation in the Future

As indicated above, the contentious issue of potential liability and compensation for loss and damage threatened to scupper inclusion of a loss and damage provision in the Paris Agreement. This resulted in language in the decision adopting the Agreement expressly excluding liability and compensation.¹⁰⁵

However, this would not preclude a future decision by the Parties reversing this position, or an amendment to Article 8 of the Paris Agreement to authorize liability and compensation. There would certainly be ample authority under international law to support this position. The UNFCCC's Preamble recognizes "the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States

100. Eliza Northrop, *Not Just for Paris, but for the Future: How the Paris Agreement Will Keep Accelerating Climate Action*, WORLD RES. INST. (Dec. 14, 2015), <http://www.wri.org/blog/2015/12/not-just-paris-future-how-paris-agreement-will-keep-accelerating-climate-action>; Meinhard Doelle, *The Paris Agreement: Historic Breakthrough in Spite of Shortcomings*, DALHOUSIE UNIV. BLOGS: MARINE AND ENVTL. L. NEWS (Dec. 13, 2015), <https://blogs.dal.ca/melaw/2015/12/13/the-paris-climate-agreement-historic-breakthrough-in-spite-of-shortcomings/>.

101. Baker & McKenzie, *The Paris Agreement. Putting the First Universal Climate Change Treaty in Context*, BAKER NET (2016), at 4, <http://auslt01.bakernet.com/marketing/environmental%20markets/Report%20COP21%20overview.pdf>.

102. *Paris Agreement*, *supra* note 63, ¶ 100.

103. *The Global Platform for Disaster Risk Reduction*, THE UNITED NATIONS OFFICE FOR DISASTER RISK REDUCTION, <http://www.unisdr.org/we/coordinate/global-platform> (last visited Jan. 1, 2016).

104. Heather McGray et al., *Loss and Damage: Elements for Successful Negotiations at COP 19 in Warsaw*, WORLD RESOURCES INSTITUTE (Nov. 8, 2013), <http://www.wri.org/blog/2013/11/loss-and-damage-elements-successful-negotiations-cop-19-warsaw>.

105. Huq & De Souza, *supra* note 72.

or of areas beyond the limits of national jurisdiction.”¹⁰⁶ This provision embodies the principle known as the “no-harm rule,” which while general and vague in nature,¹⁰⁷ is recognized as customary international law.¹⁰⁸ Non-fulfillment of the obligations associated with this rule, in turn, gives rise to State responsibility and a duty to compensate affected States for the damage inflicted.¹⁰⁹ In the context of climate-attributable loss and damage, this could give rise to a duty to compensate or make reparation.¹¹⁰

Moreover, as Doelle contends, the establishment of a liability and compensation regime could provide an equitable metric for assessing responsibility for unmitigated impacts by individual States.¹¹¹ Additionally, it could facilitate creation of a mechanism to reduce said liability through a system of credits for mitigation and adaptation efforts by individual Parties.¹¹² This could provide the kind of price signals that are critical for the Parties to the Paris Agreement to meet the treaty’s objectives.

Of course, it must be acknowledged that there would be a number of imposing challenges in formulating a climate liability regime under the rubric of Paris’s loss and damage provision. One issue would be the impossibility of linking an individual State’s emissions to specific climatic damages, the element of State responsibility known as “specific causation.”¹¹³ This is a consequence of, *inter alia*, “the complex and synergetic effect of the diverse pollutants and polluters and the non-linearity of climate change . . .”¹¹⁴ Should the Parties opt for a liability regime, however, there are a number of

106. UNFCCC, *supra* note 1, at Preamble.

107. Christina Voigt, *State Responsibility for Climate Change Damages*, 77 NORDIC J. INT’L L. 1, 8 (2008); RODA VERHEYEN, CLIMATE CHANGE DAMAGE AND INTERNATIONAL LAW 146 (2005).

108. *Id.* at 146; Opinion on the Legality of the Threat of the Use of Nuclear Weapons, Report, 1996 I.C.J. Reps. 95, at 222, ¶ 29 (July 8); Case concerning the Gabcikovo-Nagymoros Project (Hungary v. Slovakia), Judgment, 1997 I.C.J. Reps. 19, at 41, ¶ 53 (Sept. 25).

109. Richard S.J. Tol & Roda Verheyen, *State Responsibility and Compensation for Climate Change Damages—a Legal and Economic Assessment*, 32 ENERGY POL’Y 1109, 1111 (2004).

110. *Id.* at 1114; Sompong Sucharitkul, *Responsibility and Liability for Environmental Damage Under International Law*, GOLDEN GATE UNIVERSITY SCHOOL OF LAW (1996), at 4, <http://digitalcommons.law.ggu.edu/cgi/viewcontent.cgi?article=1669&context=pubs> (last visited Jan. 13, 2016); Verheyen, *supra* note 107, at 162.

111. Meinhard Doelle, *Loss and Damage in the UN Climate Regime: A Way to Bridge the Ambition Gap?*, SOCIAL SCIENCE RESEARCH NETWORK (Feb. 19, 2015), at 3, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2567368 (last visited Jan. 1, 2016).

112. *Id.*

113. Voigt, *supra* note 107, at 15 William C.G. Burns, *A Voice for the Fish? Climate Change Litigation and Potential Causes of Action for Impacts Under the United Nations Fish Stocks Agreement*, 48 SANTA CLARA L. REV. 605, 633 (2008).

114. Voigt, *supra* note 107, at 15; see also, Rob Dellink, *Sharing the Burden of Financing Adaptation to Climate Change*, 19 GLOBAL ENVTL. CHANGE 411, 413 (2009).

potential equitable approaches to address this issue that can ensure compensation for affected States. This could include apportioning liability on the basis of past and/or current emissions,¹¹⁵ or imposition of some form of joint and several liability.

IV. CONCLUSION

While the Paris Agreement has been heralded by some commentators as a “historic breakthrough”¹¹⁶ and a “foundation for ambitious climate change mitigation,”¹¹⁷ the reality is that many of the world’s most vulnerable States are likely to face extremely serious impacts from climate change over the course of this century and beyond. The loss and damage initiative under the UNFCCC provides a framework for potentially reducing these impacts substantially. How these provisions are operationalized over the course of the next decade will speak volumes about the Parties’ commitment to equity and justice.

115. Voigt, *supra* note 107, at 20.

116. *The Paris Agreement: Historic Breakthrough in Spite of Shortcomings*, *supra* note 100.

117. Axel Michaelowa, *The Paris COP: Laying the Foundation for Ambitious Climate Change Mitigation*, PERSPECTIVES (Dec. 14, 2015), http://www.perspectives.cc/fileadmin/user_upload/Paris_COP_results-perspectives-evaluation14-12-15.pdf (last visited Jan. 1, 2016).