

# FOREST CARBON (REDD+), REPAIRING INTERNATIONAL TRUST, AND RECIPROCAL CONTRACTUAL SOVEREIGNTY

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## INTRODUCTION

Climate change, deforestation, and poverty present dire and intertwined threats to human and nonhuman communities. In this paper, I examine how the world's nations, businesses, and citizens are overcoming mistrust to cooperatively address these threats.<sup>1</sup> I ask: How do negotiations to quantify and control the world's forests highlight new frontiers for international law? Through these struggles, how is sovereignty—a cornerstone of international law—being reconstructed to adapt to twenty-first century perils that demand unprecedented cooperation among nations? This paper addresses these questions by focusing on the emerging regime of Measuring, Monitoring, Reporting, and Verifying (MMRV) in global climate change cooperation, with a particular focus on Reducing Emissions from Deforestation and forest Degradation (REDD+).

During the last two centuries, we (especially we in the global North<sup>2</sup>) have produced goods, generated energy, mechanized travel, intensified agriculture, and destroyed forests, unleashing billions of tons of carbon into the atmosphere. The overwhelming majority of climate scientists agree that this pollution is changing the climate,<sup>3</sup> and some portend an imminent

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1. I would rank the threats posed by climate change just behind the threat of the use of nuclear weapons.

2. I use “North” to refer to developed or industrialized nations. Northern nations have been primarily responsible for creating the problems of global climate change through pollution associated with industrialization; Northern nations are thus the only nations with binding greenhouse gas reduction commitments under the Kyoto Protocol. “Southern” nations are those in the process of development. Southern nations are least responsible for creating global climate change, yet will suffer the most from its consequences.

3. 97.4% of climatologists who actively publish in the field agree that human activity is changing the climate. Peter T. Doran & Maggie Kendall Zimmerman, *Examining the Scientific Consensus on Climate Change*, EOS, Jan. 27, 2009, at 22; Fiona Harvey, *Scientists Attribute Extreme Weather to Man-Made Climate Change*, THE GUARDIAN, (Jul. 10, 2012), <http://www.guardian.co.uk/environment/2012/jul/10/extreme-weather-manmade-climate-change?INTCMP=SRCH>; *Scientific Consensus*

future of mass suffering and widespread death, or “a planet Earth reconfigured as science fiction, since such high temperatures have not existed for some tens of millions of years.”<sup>4</sup> While the poorest of the poor will suffer the most, climate change may disrupt all strata of human civilization.<sup>5</sup>

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on *Global Warming*, UNION OF CONCERNED SCIENTISTS, <http://www.ucsusa.org/ssi/climate-change/scientific-consensus-on.html> (last revised March 4, 2011).

4. Martin L. Weitzman, *A Review of The Stern Review on the Economics of Climate Change*, 45 J. OF ECON. LITERATURE 703, 716 (2007). See, e.g., Intergovernmental Panel on Climate Change [IPCC], *Chairman's Vision Paper*, at 3, AR5-SCOP/Doc. 2 (July 13–17 2009), available at [http://www.ipcc.ch/scoping\\_meeting\\_ar5/documents/doc02.pdf](http://www.ipcc.ch/scoping_meeting_ar5/documents/doc02.pdf) (summarizing the IPCC AR4 assessments and predictions); Anthony D. Barnosky et al., *Approaching A State Shift in Earth's Biosphere*, 486 NATURE 52, 52 (2012) (reviewing evidence of global ecosystem transitions); James Hansen, Makiko Sato, & Reto Ruedy, *Perception of Climate Change*, PROCEEDINGS OF THE NAT'L ACAD. OF SCIS.: EARLY ED., at 1 (Aug. 6, 2012), <http://www.pnas.org/content/early/2012/07/30/1205276109.full.pdf+htm> (observing the chance of unusually warm or cool seasons has become more and more likely in the past thirty years, as a result of climate change); Christopher R. Schwalm, Christopher A. Williams, & Kevin Schaefer, *Hundred-Year Forecast: Drought*, N.Y. TIMES (Aug. 11, 2012), [http://www.nytimes.com/2012/08/12/opinion/sunday/extreme-weather-and-drought-are-here-to-stay.html?\\_r=0](http://www.nytimes.com/2012/08/12/opinion/sunday/extreme-weather-and-drought-are-here-to-stay.html?_r=0) (examining evidence of historical droughts); Justin Willis, *Study Finds More of Earth is Hotter and Says Global Warming is at Work*, N.Y. TIMES (Aug. 6, 2012), <http://www.nytimes.com/2012/08/07/science/earth/extreme-heat-is-covering-more-of-the-earth-a-study-says.html> (noting that the percentage of the Earth's surface covered in extreme heat during the summer has soared from 1% before 1980 to as much as 13% in recent years); Tom Zeller Jr., *A High Cost to Deal with Climate Shift*, N.Y. TIMES (Aug. 31, 2009), <http://www.nytimes.com/2009/08/31/business/energy-environment/31iht-green31.html?pagewanted=all> (reviewing global planning for climate change impacts); *Joint Science Academies' Statement: Climate Change Adaptation and the Transition to a Low Carbon Society*, THE NATIONAL ACADEMIES (June 2008), available at <http://www.nationalacademies.org/includes/climatechangestatement.pdf> (expressing the support of the National Science Academies of 13 nations, including those of the G-8).

5. See, e.g., KENNETH M. CHOMITZ ET AL., THE WORLD BANK, AT LOGGERHEADS?: AGRICULTURAL EXPANSION, POVERTY REDUCTION, AND TROPICAL FORESTS 1 (2007) (noting that the environmental destruction from climate change in the tropics would affect people all over the Earth); DARA, CLIMATE VULNERABILITY MONITOR: A GUIDE TO THE COLD CALCULUS OF A HOT PLANET 19 (2d ed. 2012), available at <http://daraint.org/wp-content/uploads/2012/09/CVM2-Low.pdf> (forecasting that over 98% of climate change mortality occurs in developing countries); ERIC A. POSNER & DAVID WEISBACH, CLIMATE CHANGE JUSTICE 11 (2010) (noting that poorer countries are located in warmer parts of the world, and that warmer parts of the world are more likely to be affected by climate change than cooler areas); RODA VERHEYEN, CLIMATE CHANGE DAMAGE AND INTERNATIONAL LAW: PREVENTION DUTIES AND STATE RESPONSIBILITY 34 (2005) (noting that climate change will affect developing countries more severely than developed countries because climate change will have a heightened effect on tropical areas and on vulnerable economies); KEVIN WATKINS, U.N. DEV. PROGRAMME [UNDP], HUMAN DEVELOPMENT REPORT 2007/2008: FIGHTING CLIMATE CHANGE: HUMAN SOLIDARITY IN A DIVIDED WORLD 8 (2007) [hereinafter HUMAN DEVELOPMENT REPORT 2007/2008], available at [http://hdr.undp.org/en/media/HDR\\_20072008\\_EN\\_Complete.pdf](http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf) (describing geographic vulnerability to climate change impacts); Maxine Burkett, *Climate Reparations*, 10 MELBOURNE J. INT'L. L. 509, 513–14 (2009) (noting that climate change will “disproportionately and unfairly” affect two groups—the world's poor and those living in island states); Carmen G. Gonzalez, *Environmental Justice and International Law*, in ROUTLEDGE HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 77, 95 (Shawkat Alam et al. ed., 2013); Patricia Nelson, *An African Dimension to the Clean Development Mechanism: Finding a Path to Sustainable Development in the Energy Sector*, 32 DENV. J. INT'L. L. & POL'Y 615, 623 (2004) (noting the challenge of globally implementing sustainable development); Suzanne Goldenberg, *Greenland Ice Sheet Melted at Unprecedented Rate During July*, THE GUARDIAN, (July 24, 2012), <http://www.guardian.co.uk/environment/>

Yet in the redoubts of national capitals and local villages, corporate boardrooms and private homes in both North and South, leaders and citizens seem unable to overcome a “crisis of mistrust”<sup>6</sup> and work together to avoid this existential threat. Opportunities, however, present themselves to break this impasse. REDD+, with an apposite system of MMRV, comprises one piece of the legal puzzle to overcome this crisis of mistrust.

Through the process of negotiating a Kyoto Protocol successor, Northern nations have pledged \$30 billion in “fast track” mitigation aid to Southern nations between 2010–2012. They have also pledged \$100 billion yearly by 2020 to support mitigation and adaptation activities in Southern nations, which will be managed in a global “Green Fund” under the auspices of the World Bank.<sup>7</sup> REDD+ comprises a pivotal piece of this puzzle and will attract a large proportion of these funds, as forests—especially in the global South—are a commodity that diverse interests prize. Beyond the formal multilateral negotiations, a host of other private and governmental parties are pouring billions of dollars into REDD+. Funds come not just under the legal aegis of the United Nations Framework Convention on Climate Change (UNFCCC), but also from parallel, legally mandated programs in Norway (spending \$3 billion on REDD+<sup>8</sup>),

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2012/jul/24/greenland-ice-sheet-thaw-nasa (describing the alarming rate at which the Greenland ice sheet has melted, which can contribute significantly to sea-level rise throughout the world); Andrew C. Revkin, *Poor Nations to Bear Brunt as World Warms*, N.Y. TIMES (April 1, 2007), <http://www.nytimes.com/2007/04/01/science/earth/01climate.html?pagewanted=all> (noting an IPCC report, which found that wealthy, northern nations will not only experience fewer effects of global warming, but also that they are better equipped to handle those effects); M.J. MACE, ADAPTATION UNDER THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE: THE LEGAL FRAMEWORK I (2003), available at <http://www.field.org.uk/files/Adaptation-Tyndall%20Paper-MACE-August%2023-FINAL.pdf> (presented at Justice in Adaptation to Climate Change Seminar, Zuckerman Institute for Connective Environmental Research University of East Anglia, Sept. 7-9, 2003).

6. Murray Ward, *To V or Not to V?: That is a Question*, *Oxford Energy and Environment Comment*, OXFORD INST. FOR ENERGY STUDIES, Sept. 2010, at 1.

7. Daniel Bodansky, *A Tale of Two Architectures: The Once and Future U.N. Climate Change Regime* 11 (Mar. 7, 2011) (working paper), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1773865](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1773865). Mitigation refers to actions to decrease the amount of greenhouse gases in the atmosphere, either because we reduce the amount we emit, or we find natural or artificial “sinks” that store the GHGs before they reach the atmosphere.

8. Leony, *Aurora*, REDD+ Biggest Success in Climate Change Talks, Norway Says, *FOREST NEWS* (Dec. 12, 2011), <http://blog.cifor.org/6264/redd-biggest-success-in-climate-change-talks-norway-says/#.UU8TBryk-bO>. See also Christopher Joyce, *Climate Strategists: To Cut Emissions, Focus on Forests*, *NPR* (Dec. 10, 2011), <http://www.npr.org/2011/12/10/143454111/climate-activists-to-cut-emissions-focus-on-forests?ft=1&f=1025> (examining the potential of forests in climate strategies); Daniel Kandy & David Diaz, *Indonesia Bets on REDD With new Moratorium, but can it Deliver?*, *ECOSYSTEM MARKETPLACE* (May 19, 2011), [http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page\\_id=8328&section=news\\_articles&eod=1](http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=8328&section=news_articles&eod=1) (evaluating Norway’s funding pledge for REDD+); *Norway Plans Record 2010 Carbon Capture Spending*, *REUTERS* (Oct. 13, 2009), <http://www.reuters.com/article/2009/10/13/us-norway-budget-carbon-idUSTRE59C1RC20091013> (detailing Norway’s plans to raise more than \$600 million to help fight climate change); Leony Aurora,

California, and elsewhere. Funds also come from a voluntary market where concerned citizens and businesses “offset” their greenhouse gas (GHG) consumption through investing in REDD+.

The business of funding forests requires quantifying forests and their benefits, and verifying the quantifications. MMRV has come to the fore as a key to consensus. Without a comprehensive, rigorous, reciprocal—and in many cases, intrusive—system of MMRV, global leaders likely will not invest in the Green Fund or find common will for a multilateral environmental agreement to succeed the Kyoto Protocol.<sup>9</sup> Outside of the formal, multilateral UNFCCC process, investors in REDD+ are developing MMRV protocols to ensure multiple, synergistic returns on their investments.<sup>10</sup>

By forging consensus on the scope and procedures of an MMRV regime for REDD+, we could potentially mitigate the serious effects of climate change, sustain tropical forests and the biodiversity and evolutionary processes they perpetuate, and help poor people in the developing world adapt to climate change while alleviating their poverty.<sup>11</sup> We might also reimagine some of our most cherished legal concepts to render them more responsive to the needs of the twenty-first<sup>st</sup> century. Solving the MMRV puzzle helps build a system of international law robust enough to tackle other pressing problems that don’t respect national boundaries, but that demand cooperation and trust between nations.

Debates over the reach of international environmental law in general, climate change law in particular, and REDD+ most specifically, hinge on arguments over the boundaries of sovereignty. Sovereignty, which is the “most fundamental” principle of international law, poses obstacles to

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*World Bank: More Donors Supporting REDD+*, CIFOR FORESTS BLOG (Dec. 8, 2011), <http://blog.cifor.org/6113/world-bank-more-donors-supporting-redd/#.T2eQkHh1-l6> (discussing the World Bank position on REDD+ donations); Press Release, Office of the Prime Minister of Norway, Norway and Indonesia in Partnership to Reduce Emissions from Deforestation (May 26, 2010) [hereinafter Norway Press Release], <http://www.regjeringen.no/en/dep/smk/press-center/Press-releases/2010/Norway-and-Indonesia-in-partnership-to-reduce-emissions-from-deforestation.html?id=605709> (further describing the Norway-Indonesia REDD+ partnership).

9. JAKE SCHMIDT, NATURAL RES. DEF. COUNCIL, TRACKING CARBON WITH TRANSPARENCY, NRDC 1 (2010), available at <http://www.nrdc.org/globalwarming/files/trackingcarbon-fs.pdf>.

10. See, e.g., THE CLIMATE, CMTY. & BIODIVERSITY ALLIANCE, CLIMATE, COMMUNITY, & BIODIVERSITY PROJECT DESIGN STANDARDS 4, 6 (2008), available at [https://s3.amazonaws.com/CCBA/Upload/ccb\\_standards\\_second\\_edition\\_december\\_2008+\(1\).pdf](https://s3.amazonaws.com/CCBA/Upload/ccb_standards_second_edition_december_2008+(1).pdf) (noting that the Climate, Community and Biodiversity standards can demonstrate a project’s ability to provide returns for investors and other stakeholders).

11. Conference of the Parties [CoP] to the United Nations Framework Convention on Climate Change [UNFCCC] Dec. 2/CP.17, Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention, 17th Sess., Nov. 28–Dec. 11, 2011, U.N. Doc. FCCC/CP/2011/9/Add.1, at 14–15 (Mar. 15, 2011) [hereinafter UNFCCC Decision 2/CP.17].

climate change cooperation and to implementing REDD+.<sup>12</sup> An efficient, reciprocal, and equitable system of MMRV for REDD+ helps build a framework for re-envisioning sovereignty for the twenty-first century by recognizing the array of entities jockeying for a voice in controlling forests and other dwindling resources, and through leading to greater cooperation on all issues in an increasingly and necessarily interdependent world.

All legal institutions are social constructs, the product of countless negotiations between entities with specific self-interests and varying degrees of power. Global climate change imposes a more general interest. The health and survival of current and future human and non-human communities present a normative target towards which international law should aim. I use the term “deep equity” to describe values, actions, and laws promoting sustainable pathways that act in synergy to maximize the health and potential of all individuals, communities, and ecosystems.<sup>13</sup> The equity is deep because it asks that values become rooted within each individual, because it requires that we fundamentally re-imagine our community structures and responsibilities, and entrench and encode these values and responsibilities in our legal systems and policy choices. Our laws and policies would, in turn, support values and actions promoting even deeper equity. A world of deep equity presents a normative target for reconstructing sovereignty.

I offer some assumptions. First, I take it as incontrovertible that global climate change is real, anthropogenically caused, and heralds serious consequences for how global ecosystems function—and thus how human and nonhuman lives flourish.<sup>14</sup> Next, we won’t solve or mitigate the global climate change crisis without an unprecedented degree of cooperation among nations and among non-state actors, as well. This cooperation must be abetted by major innovations in international (and domestic) environmental law to overcome the crisis of mistrust between actors and to foment changes robust enough to ward off disaster. And we must reimagine some of our most cherished notions of international law—for instance, the sanctity and parameters of sovereignty—to adapt international law for the global climate change era.

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12. See UNFCCC Decision 2/CP.17, *supra* note 11, at 13 (noting that international consultation regarding climate change mitigation under the UNFCCC must be respectful of national sovereignty); Duncan A. French, *A Reappraisal of Sovereignty in the Light of Global Environmental Concerns*, 21 LEGAL STUD. 376, 377 (2001); Joyce, *supra* note 8 (questioning the legal feasibility of carbon trading between countries).

13. See David Takacs, *Forest Carbon Offsets and International Law: A Deep Equity Legal Analysis*, 22 GEO. INT’L ENVTL. L. REV. 521, 526 (2010) [hereinafter Takacs, *A Deep Equity Analysis*] (describing the principle of deep equity).

14. See sources cited *supra* note 5.

The emergence of a legal regime of MMRV for REDD+ shows how we can potentially overcome a “crisis of mistrust” to promote cooperation in mitigating climate change, deforestation, and other pressing problems. Debates over MMRV reveal huge divides in power wielded by the North and the South, while simultaneously diminishing that power differential and dispersing power among disparate actors with fundamental stakes in the world’s forests. MMRV illustrates how disparate actors are posing pragmatic new ways forward to construct international law, including the cornerstone concept of “sovereignty.”

In this paper, I explain how the goals and methods of REDD+ and the system of MMRV can make infusions of cash for REDD+ feasible, effective, and equitable. I cover the various proposals for a multifaceted, reciprocal MMRV regime, and explain where the global community stands as of late 2012, when this paper went to press. While detailing various objections to the MMRV regime, I also show how implementing this regime can help us incorporate more voices with legal rights and responsibilities into international law, re-envision what international law means by sovereignty, and help us move closer to the ideal of sovereign equality. Responding to a cascade of ecological and political stressors, MMRV for REDD+ proposes a process of negotiated cooperation that can not only help ward off multiple ecological disasters, but may present a model for how North and South may work together to address other environmental problems that threaten us all.

#### *REDD+*

“REDD” stands for “Reducing Emissions from Deforestation and Degradation.” The “+” refers to not merely preserving intact forests and reducing forest degradation (thus preventing new greenhouse gas emissions), but to removing additional carbon from the atmosphere through improving forest management, reforesting degraded land, and sequestering extra greenhouse gases in agricultural land, peatlands, or wetlands.<sup>15</sup>

Northern governments, businesses, and citizens are investing billions of dollars in the vast, imperiled forests of the South. In a REDD+ project, an entity—a national or regional government, a community, a private developer, an individual landowner—reforests a degraded ecosystem or

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15. The Copenhagen Accord, which emerged from the 2009 Conference of Parties to the UNFCCC, defined REDD+ as: “reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas emissions by forests.” CoP to the UNFCCC Dec. 2/CP.15, Copenhagen Accord, 15th Sess., Dec. 7–19, 2009, U.N. Doc. FCCC/CP/2009/11/Add.1, ¶ 6 (Dec. 18, 2009) [hereinafter Copenhagen Accord].

preserves a forest that would otherwise be cut down or degraded. The entity may then sell the carbon, now sequestered in the trees, for a contracted period of time.<sup>16</sup> REDD+ may happen on a project-by-project basis—one developer, one landowner. Or REDD+ may happen on a broader scale, i.e. a nation or state/province pledges to use REDD+ funding to reduce deforestation or foment reforestation resulting in sequestered GHGs above a “business as usual” (BAU) baseline.<sup>17</sup>

Tropical deforestation accounts for about 15–20% of GHG emissions, a greater contribution than all forms of transport combined, and equal to the annual emissions of China or the United States.<sup>18</sup> Trees absorb more than a quarter of human emitted GHGs.<sup>19</sup> REDD+ helps mitigate global climate change when it results in more carbon stored than would be emitted by the polluting activities it enables. REDD+ projects may also help communities adapt to climate change, which endangers survival of many species of flora and fauna in forest ecosystems and may impair how those ecosystems function.<sup>20</sup> Functioning forests furnish ecological resiliency for human communities. Forests help human communities thrive by modulating local weather fluctuations; preventing drought; buffering floods; filtering drinking water; stabilizing soil; harboring pollinators; providing food,

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16. See DAVID TAKACS, *FOREST CARBON: LAW + PROPERTY RIGHTS* 14 (2009), available at [http://www.conservation.org/Documents/CI\\_Climate\\_Forest-Carbon\\_Law-Property-Rights\\_Takacs\\_Nov09.pdf](http://www.conservation.org/Documents/CI_Climate_Forest-Carbon_Law-Property-Rights_Takacs_Nov09.pdf) [hereinafter “TAKACS, FOREST CARBON”] (providing details of various property arrangements for forest carbon).

17. ELEC. POWER RESEARCH INST., *OVERVIEW OF SUBNATIONAL PROGRAMS TO REDUCE EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION (REDD) AS PART OF THE GOVERNORS’ CLIMATE AND FOREST TASK FORCE*, 1–5 (2012), available at <http://www.gcftaskforce.org/documents/EPRI.pdf>; JADE SAUNDERS ET AL., *PROFOREST, REDUCED EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION: LESSONS FROM A FOREST GOVERNANCE PERSPECTIVE* 6 (2008), available at <http://www.proforest.net/publication-objects/REDD%20and%20Governance.pdf>.

18. See American Clean Energy and Security Act, H.R. Res. 2454, 111th Cong. § 752(2) (2009) (stating that deforestation is responsible for 20% of GHG emissions); HUMAN DEVELOPMENT REPORT, *supra* note 5, at 41 (stating that deforestation is responsible for 11–28% of GHG emissions); Valerie Volcovici, *A Slow Start for the Carbon Credit Market*, N.Y. TIMES (July 24, 2011), <http://www.nytimes.com/2011/07/25/business/energy-environment/a-slow-start-for-the-for-carbon-credit-market.html?pagewanted=all> (noting that “deforestation...emits as much carbon as all the world’s cars, ships, trucks and planes”); LORENZO COTULA & JAMES MAYERS, *TENURE IN REDD: START-POINT OR AFTERTHOUGHT?*, at v (IIED 2009), available at <http://pubs.iied.org/pdfs/13554IIED.pdf> (stating that deforestation is responsible for 17% of GHG emissions); Gleb Raygorodetsky, *Can REDD Ever Become Green*, OUR WORLD 2.0 (Aug. 1, 2012), <http://ourworld.unu.edu/en/can-redd-ever-become-green/> (explaining that “deforestation makes up 18 percent of annual global greenhouse gas (GHG) emissions”).

19. Justin Gillis, *With Deaths of Forests, a Loss of Key Climate Protectors*, N.Y. TIMES (Oct. 1, 2011), [http://www.nytimes.com/2011/10/01/science/earth/01forest.html?\\_r=2&pagewanted=1&hp](http://www.nytimes.com/2011/10/01/science/earth/01forest.html?_r=2&pagewanted=1&hp).

20. Charlotte Streck et al., *Climate Change and Forestry: An Introduction*, in *CLIMATE CHANGE AND FORESTS: EMERGING POLICY AND MARKET OPPORTUNITIES* 55 (Charlotte Streck et al. eds., 2008).

medicine, and building products; and preserving innumerable other ecosystem services crucial for human survival.<sup>21</sup>

REDD+ investments may also abet socioeconomic climate change adaptation through new sources of income (from carbon credits or employment), new forestry-related skills (including participating in designing and implementing MMRV systems),<sup>22</sup> ancillary project benefits (e.g., project developers building schools or clinics), or clarified land title.<sup>23</sup>

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21. I am not referring to preserving functioning ecosystems and their component species for their own sake; desirable though that may be, it is not the focus of the legal climate regime. See VALERIE CAPOS ET AL., U.N. ENVTL. PROGRAMME, REDUCING EMISSIONS FROM DEFORESTATION: A KEY OPPORTUNITY FOR ATTAINING MULTIPLE BENEFITS, 9–10 (2007) (describing the human benefits gained from healthy ecosystems); Stefano Pagiola et al., *Market-Based Mechanisms for Forest Conservation and Development*, in SELLING FOREST ENVIRONMENTAL SERVICES: MARKET-BASED MECHANISMS FOR CONSERVATION AND DEVELOPMENT 2 (Stefano Pagiola et al. eds. 2002) (listing the many “benefits provided by forests”); see also David Freestone, *Foreword*, in CLIMATE CHANGE AND FORESTS: EMERGING POLICY AND MARKET OPPORTUNITIES ix, xii (Charlotte Streck et al. eds., 2008) (explaining that jeopardized ecosystems are a danger to human well-being); THE CERSPA INITIATIVE, CERTIFIED EMISSIONS REDUCTION SALE AND PURCHASE AGREEMENT, GUIDANCE DOCUMENT (2009), available at <http://www.cerspa.com> (providing a template for a “simple, understandable, and balanced CDM transaction agreement” and that identifies the “key legal issues” governing such a transaction).

22. See Margaret Skutsch, Ben Vickers, Yola Georgiadou, & Michael McCall, *Alternative Models for Carbon Payments to Communities Under REDD+ Using the Polis Model of Actor Inducements*, 14 ENVTL. SCI. POLICY 140, 141 (2011) (noting that forest-dependent peoples can “contribute to the sustainable management of forests”); Richard Tipper, *Helping Indigenous Farmers to Participate in the International Market for Carbon Services: The Case of Scolel Té*, in SELLING FOREST ENVIRONMENTAL SERVICES: MARKET-BASED MECHANISMS FOR FOREST CONSERVATION AND DEVELOPMENT 232 (Stefano Pagiola et al., eds. 2002) (noting that farmers involved in REDD+ projects have gained valuable technical skills in areas such as surveying, mapping, financial planning, and silviculture); Promode Kant, *REDD Should Create Jobs, Not Merely Bring Compensation* 4, (Inst. Of Green Econ., Working Paper No. IGREC-13, 2010), available at [http://www.igrec.in/REDD\\_should\\_create\\_Jobs\\_Not\\_merely\\_bring\\_compensation.pdf](http://www.igrec.in/REDD_should_create_Jobs_Not_merely_bring_compensation.pdf) (arguing that an annual expenditure of \$1 million creates up to 1,000 full-time jobs in developing countries); REDD+ SES INITIATIVE, REDD+ SOCIAL & ENVIRONMENTAL STANDARDS 8 (2010) [hereinafter *REDD+ SES*], [http://www.redd-standards.org/files/pdf/lang/english/REDD\\_Social\\_Environmental\\_Standards\\_06\\_01\\_10\\_final-English.pdf](http://www.redd-standards.org/files/pdf/lang/english/REDD_Social_Environmental_Standards_06_01_10_final-English.pdf) (introducing principles that incorporate indigenous peoples in the decision making and implementation of an MMRV system); *Workshop in Mexico Explores the Role of Local Communities in REDD+ MRV*, FOREST CARBON PARTNERSHIP FACILITY, <http://www.forestcarbonpartnership.org/fcp/node/339> (noting that MMRV should support the overall REDD+ program and provide benefits to local communities) (last visited Jan. 16, 2013) (archive copy on file with the *Vermont Law Review*).

23. See SISSEL WAAGE ET AL., THE KATOOMBA GRP., U.N. ENV’T PROGRAMME, & FOREST TRENDS, PAYMENTS FOR ECOSYSTEM SERVICES: GETTING STARTED 10 (2008), available at <http://www.katoombagroup.org/documents/publications/GettingStarted.pdf> (clarifying that regardless of who they are supposed to benefit from international agreements, there is a ripple effect that can flow to multiple beneficiaries); Alfred Oforu-Ahenkorah, *CDM Participation and Credit Pricing in Africa*, in EQUAL EXCHANGE: DETERMINING A FAIR PRICE FOR CARBON 127, 133 (Glenn Hodes & Sami Kamel, eds., 2007) (noting the equitable concerns in the global carbon markets); Brian Walsh, *Getting Credit for Saving Trees*, TIME, July 23, 2007, available at <http://www.time.com/time/magazine/article/0,9171,1642887,00.html> (describing the World Bank’s pilot program to preserve trees in exchange for carbon credits); Carina Bracer et al., *Organization and Governance for Fostering Pro-Poor Compensation for Environmental Services: CES Scoping Study Issue Paper No. 4*, at 35–36 (ICRAF



REDD+ may assist with institutional adaptation as government officials, community leaders, and individual landowners clarify land title and tenure, develop skills and institutions to negotiate effectively with project developers, or develop and manage their own REDD+ projects.<sup>24</sup>

Despite these potential benefits, skeptics claim that REDD+ does little to mitigate global climate change and is instead an anti-democratic, Northern self-interested, human rights-impairing scheme that exacts high opportunity costs on poor nations and allows the already rich to profit at the expense of the poor. Critics portray lose-lose situations, as Northern consumers assuage guilty consciences over profligate lifestyles while corporations mine profits from a system supposedly meant to save the planet, but that actually sustains hydrocarbon-based capitalism as usual. Naysayers allege that poorly planned REDD+ projects in the South are methodologically suspect and bar poor people from traditional land.<sup>25</sup>

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Working Paper No. 39, 2007), <http://www.worldagroforestry.org/downloads/publications/PDFs/wp14961.pdf> (noting that governments can promote conservation by respecting indigenous peoples land rights); Julian Quan with Nat Dyer, *Climate Change and Land Tenure: The Implications of Climate Change for Land Tenure and Land Policy* 33 (Food & Agric. Org. of the U.N., Land Tenure Working Paper 2, 2008) (showing that strong land rights may lead to greater stability); WILLIAM D. SUNDERLIN ET AL., RIGHTS & RES. INITIATIVE, FROM EXCLUSION TO OWNERSHIP? CHALLENGES AND OPPORTUNITIES IN ADVANCING FOREST TENURE REFORM 28–30 (2008), available at [http://www.rightsandresources.org/documents/files/doc\\_736.pdf](http://www.rightsandresources.org/documents/files/doc_736.pdf) (describing how strong land rights may improve the income of beneficiaries); COTULA & MAYERS, *supra* note 18, at 9 (noting that carbon rights are registered based on land title, and can help define who has management responsibility over the land).

24. See Nelson, *supra* note 5, at 623 (describing the importance of developing institutional capacity in Africa in order to implement CDM projects); Ofofu-Ahenkorah, *supra* note 23, at 127 (noting that CDM can help developing countries attain financial benefits, reduce emissions, and achieve sustainable development goals).

25. See WAGGE ET AL., *supra* note 23, at 11–12 (noting that a range of risks exist for those selling carbon rights to forests, including loss of harvest rights, loss of employment, or unfair outcomes); PHILIPPE CULLET, DIFFERENTIAL TREATMENT IN INTERNATIONAL ENVIRONMENTAL LAW 119 (2003) (parenthetical); DAVID HUMPHREYS, LOGJAM: DEFORESTATION AND THE CRISIS OF GLOBAL GOVERNANCE 208 (2006) (criticizing the international communities single focus on greenhouse gases when implementing forest plans); Patrick McCully, *How Carbon Credits Are Gutting the Kyoto Protocol and Why They Must Be Scrapped*, in INTERNATIONAL RIVERS, BAD DEAL FOR THE PLANET (2008), available at [http://www.internationalrivers.org/files/attached-files/drp2english2008-521\\_0.pdf](http://www.internationalrivers.org/files/attached-files/drp2english2008-521_0.pdf) (asserting that offset systems don't work and transfer wealth from taxpayers to consultants and developers); Larry Lohmann, *Carbon Trading: A Critical Conversation on Climate Change, Privatisation, and Power*, DEV. DIALOGUE, Sept. 2006, at 230–33, available at [http://www.dhf.uu.se/pdfiler/DD2006\\_48\\_carbon\\_trading/carbon\\_trading\\_web.pdf](http://www.dhf.uu.se/pdfiler/DD2006_48_carbon_trading/carbon_trading_web.pdf) (documenting how international carbon programs have never delivered on their promises to local communities); Ann E. Prouty, *The Clean Development Mechanism and its Implications for Climate Justice*, 34 COLUM. J. ENVTL. L. 513, 529 (2009) (describing how carbon offset programs may destroy the ability of communities to self-govern); Kylie Wilson, *Access to Justice for Victims of the International Carbon Offset Industry*, 38 ECOLOGY L.Q. 967, 1012–13 (2011) (listing the environmental and social risks associated with forestry projects); Letter from Activist San Diego et al. to Gov. Jerry Brown and Mary Nichols, Chairman, Cal. Air Res. Bd., Re: Climate Change Policy—Int'l Forest Offsets in California's Cap & Trade Prog. (Jul. 10, 2012), available at <http://libcloud.s3.amazonaws.com/93/ca/b/>

REDD+'s critics are many, and I have been among them. I have criticized how early REDD projects have been conducted, laid out a set of deeply equitable principles for REDD+ that are unlikely to be achieved, and described the daunting set of legal issues for delineating forest-carbon-as-property.<sup>26</sup> Yet I am also convinced that REDD+ may be our best chance to institute law and policy reforms that could simultaneously safeguard the planet's stunning biodiversity, reduce the planet's staggering levels of human poverty, and reform the way developed and developing nations incentivize sound ways of sustainable living for a sustainable planet. And while it remains ethically questionable to use the South's forests as carbon dumps for Northern industrial excess, these forests do remain an essential source of carbon absorption for runaway human consumption that we have not yet found the will to tame.

REDD+ has many diverse supporters. The South's forests are an alluring resource for a coterie of otherwise strange bedfellows. Lush tropical forests have seduced Northern and Southern government leaders, environmental non-governmental organizations (NGOs), pro-poor NGOs, businesspeople, and international financial institutions (IFIs) that have joined forces to promote REDD+.<sup>27</sup> REDD+ will greatly expand if

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2271/Letter\_to\_Governor\_and\_ARB\_re\_CA\_REDD\_final.pdf [hereinafter Activist San Diego Letter] (arguing that REDD+ will not provide health or environmental benefits, protect forests, or displace carbon emissions); ARIANA DENSHAM ET AL., GREENPEACE, CARBON SCAM: NOEL KAMPF CLIMATE ACTION PROJECT AND THE PUSH FOR SUB-NATIONAL FOREST OFFSETS 3 (2009), available at <http://www.greenpeace.org/usa/Global/usa/report/2010/1/carbon-scam-noel-kempff-clima.pdf> (arguing that the inherent problems in carbon offset schemes make REDD+ an ill advised program choice); GREENPEACE, THE ECONOMICS OF 2°C AND REDD IN CARBON MARKETS (2009), <http://www.greenpeace.org/international/Global/international/planet-2/report/2009/4/the-economics-of-redd-summary.pdf> (noting that the REDD program will slow the necessary move from dirty to clean energy sources); TOM GRIFFITHS, SEEING 'REDD'? FORESTS, CLIMATE CHANGE MITIGATION AND THE RIGHTS OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES 14 (2009), available at [http://www.rightsandresources.org/publication\\_details.php?publicationID=923](http://www.rightsandresources.org/publication_details.php?publicationID=923) (expressing concern that the UN does not have criteria and standards for ensuring indigenous rights when implementing its REDD Program); KEVIN SMITH, CARBON TRADE WATCH, THE CARBON NEUTRAL MYTH 26 (Oscar Reyes ed., 2007), available at [http://www.carbontradewatch.org/pubs/carbon\\_neutral\\_myth.pdf](http://www.carbontradewatch.org/pubs/carbon_neutral_myth.pdf) (pointing out that Northern countries have repeatedly tried to solve the worlds problems and in most cases have failed or made things worse); REDD-MONITOR, <http://www.redd-monitor.org/> (combining recent news and updates related to REDD) (last visited Apr. 20, 2013).

26. See David Takacs, *Carbon Into Gold: Forest Carbon Offsets, Climate Change Adaptation, and International Law*, 15 W-NW J. ENVTL. & POL'Y 39, 85 (2009) (noting that the current system of international environmental law does not provide a concrete means of combatting global climate change and deforestation); Takacs, *A Deep Equity Legal Analysis supra* note 13, *passim* (noting that there is a gap in forest carbon projects where neither domestic nor international law protects vulnerable people, and where there is little liability for acts that violate human rights). See generally TAKACS, FOREST CARBON LAW, *supra* note 16, at 5 (clarifying the legal regime for forest carbon-as-property).

27. See Peter J. Kanowski, Constance L. McDermott & Benjamin W. Cashore, *Implementing REDD+: Lessons From Analysis of Forest Governance*, 14 ENVTL. SCI. & POLICY 111, 112 (2010) (noting the flurry of activity surrounding REDD+ projects, as national REDD+ strategies are being

negotiators succeed in formulating a post-2012 successor to the Kyoto Protocol as part of the Clean Development Mechanism (CDM) or similar instrument that allows Northern nations to offset required emissions reductions by investing in sustainable development projects in the South.<sup>28</sup> California's Global Warming Solutions Act will allow a significant portion of required emissions reductions to be offset, and officials are designing regulations to incorporate international REDD+ as an acceptable mechanism.<sup>29</sup> Regulators have already approved protocols, with accompanying MMRV, for domestic forestry offsets.<sup>30</sup> The Governors' Climate and Forests Task Force (GCF) joins nineteen states and provinces in the U.S. (California and Illinois), Brazil, Indonesia, Mexico, Peru, and Nigeria to develop REDD+ rules and offsets.<sup>31</sup> Norway has pledged to

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developed in more than 40 countries); James Kanter, *In London's Financial World, Carbon Trading is the Next Big Thing*, N.Y. TIMES (July 6, 2007), <http://www.nytimes.com/2007/07/06/business/worldbusiness/06carbon.html> (explaining that, within a decade, carbon markets could be trading at a volume that is comparable to credit derivatives); Volcovici, *supra* note 18 (describing a number of banks and IFIs that are working with environmental NGOs to develop REDD+ projects in developing countries such as Brazil, China, and Indonesia).

28. See CoP to the UNFCCC Dec. 1/CP.16, The Cancun Agreements, 16th Sess., Nov. 29–Dec. 10, 2010, U.N. Doc. FCCC/CP/2010/7/Add.1, ¶ 76 (Dec. 11, 2010) [hereinafter “Cancun Agreements”] (urging developed nations to support developing nations in developing and implementing plans); Copenhagen Accord, *supra* note 15, ¶ 3; see also Peter Gelling, *Forest Loss in Sumatra Becomes a Global Issue*, N.Y. TIMES (Dec. 6, 2007), <http://www.nytimes.com/2007/12/06/world/asia/06indo.html> (explaining that REDD would be a “central topic[] of discussion at the Bali conference”); Peter C. Gelling & Andrew Revkin, *Delegates in Bali for Talks on Climate Change*, N.Y. TIMES (Dec. 2, 2007), [http://www.nytimes.com/2007/12/02/science/earth/02cnd-bali.html?pagewanted=print&\\_r=1&](http://www.nytimes.com/2007/12/02/science/earth/02cnd-bali.html?pagewanted=print&_r=1&) (noting the importance place upon conserving forests at the Bali conference); COTULA & MAYERS, *supra* note 18, at 2 (noting that REDD+ has become a centerpiece of post-Kyoto climate change negotiations, and that it will need to be part of an effective and equitable post-2012 agreement).

29. THE REDD OFFSET WORKING GROUP, CALIFORNIA, ACRE AND CHIAPAS: PARTNERING TO REDUCE EMISSIONS FROM TROPICAL DEFORESTATION (DRAFT) 3 (2013), available at <http://stateredd.org/documents/2013/01/row-draft-recommendations-v1.pdf>.

30. See CAL. AIR RES. BD. (CARB), CLIMATE CHANGE PROPOSED SCOPING PLAN 64 (2008), available at [http://www.arb.ca.gov/cc/scopingplan/document/adopted\\_scoping\\_plan.pdf](http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf) (describing California's efforts to preserve its own forests to offset emissions); CAL. AIR RES. BD. (CARB), COMPLIANCE OFFSET PROTOCOL U.S. FOREST PROJECTS 60–75 (Oct. 20, 2011) (listing Californian agencies tasked with establishing a monitoring program for carbon sequestered on forest lands); Catriona Moss, *California Working With Global Governors Group to Include REDD+ in Trade Scheme*, CIFOR FORESTS NEWS (Dec. 9, 2011), [http://blog.cifor.org/6224/california-working-with-global-governors-group-to-include-redd-in-trade-scheme/#.T\\_8GM45A6FU](http://blog.cifor.org/6224/california-working-with-global-governors-group-to-include-redd-in-trade-scheme/#.T_8GM45A6FU) (noting California's participation in the Governors' Climate and Forests Task Force); *About GCF*, GOVERNORS' CLIMATE & FORESTS TASK FORCE, <http://www.gcftaskforce.org/about> (describing the aims of MOU signed by the Governors' Climate and Forests Task Force, including “developing recommendations for policymakers and regulatory authorities considering ways to integrate REDD+” into GHG compliance systems and other pay-for-performance opportunities) (last visited Apr. 20, 2013).

31. Press Release, Gov. Schwarzenegger Partners with Other States to Reduce Greenhouse Gas Emissions from Deforestation (Nov. 19, 2008), available at <http://www.gov38.ca.gov/press-release/11101/>; *About GCF*, *supra* note 30; ELEC. POWER RESEARCH INST., *supra* note 17, at 1–8 to 1–11. See also *About ROW*, THE REDD OFFSET WORKING GRP., <http://stateredd.org/about-row/>

become the North's first carbon neutral nation and is spending around \$600 million/year on REDD+ to pay developing nations for measurable carbon reductions, with major investments already in Brazil, Indonesia, Guyana, and the Congo Basin, and \$1 billion pledged to the first two nations alone.<sup>32</sup> The World Bank's Forest Carbon Partnership Facility and Forest Investment Program have mobilized over \$1 billion to support REDD+.<sup>33</sup> The United States is spending \$1 billion on REDD+ in developing nations.<sup>34</sup> The voluntary market in forest offsets has become a multimillion-dollar enterprise, as businesses and citizens voluntarily invest in REDD+ to offset their consumption.<sup>35</sup> Overall, over \$5 billion dollars of funding have been pledged or delivered for REDD+.<sup>36</sup>

## I. AN UNPRECEDENTED REGIME OF MEASURING, MONITORING, REPORTING, AND VERIFYING

### A. MMRV Overview

For REDD+ to be done well, the robust system of reciprocal MMRV will be essential. "You can't manage what you can't measure," proclaims

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(describing the MOU signed in November 2010 between the Governor of California, Chiapas, and Acre) (last visited Apr. 20, 2013).

32. See Aurora, *supra* note 8 (noting that Norway is committing \$1 billion each to Indonesia and Brazil to reduce deforestation); see also Joyce, *supra* note 8 (noting that Norway is spending about \$3 billion to support REDD+); Kandy & Diaz, *supra* note 8 (noting that the Norwegian government made a \$1 billion pledge to support REDD+ in Indonesia); REUTERS, *supra* note 8 (noting that Norway plans to make itself "carbon neutral" by 2030 through offsets that will "soak up" GHG emissions elsewhere).

33. See Aurora, *supra* note 8 (noting that World Bank's Forest Investment Program has received pledges amounting to US \$577 million and that the Forest Carbon Partnership Facility has pledges reaching US \$436 million); *Introduction, THE FOREST CARBON PARTNERSHIP FACILITY*, <http://www.forestcarbonpartnership.org/about-us> (describing the Forest Carbon Partnership Facility's Readiness Fund and Carbon Fund); see also Norway Press Release, *supra* note 8 (noting that Norway is providing over \$1 billion to Indonesia to reduce emissions from deforestation) (last visited Apr. 20, 2013).

34. TROPICAL FOREST GRP., *FUNDING OPPORTUNITIES FOR REDD+ IN GCF MEMBER STATES/PROVINCES 3* (2010), available at [http://www.gcftaskforce.org/documents/TFG%20GCF%20Report%20on%20REDD+\\_Funds\\_GCF\\_May%207%20\(English\).pdf](http://www.gcftaskforce.org/documents/TFG%20GCF%20Report%20on%20REDD+_Funds_GCF_May%207%20(English).pdf); Kit Batten, *Climate Change in the Context of Development*, U.S. AGENCY FOR INT'L DEV. [USAID] IMPACT BLOG (Dec. 7, 2011), <http://blog.usaid.gov/2011/12/climate-change-in-the-context-of-development/>.

35. MOLLY PETERS-STANLEY ET AL., *ECOSYSTEM MARKETPLACE & BLOOMBERG NEW ENERGY FINANCE, BACK TO THE FUTURE: STATE OF THE VOLUNTARY CARBON MARKETS 2011* iv (2011), available at [http://www.forest-trends.org/~forestr/publication\\_details.php?publicationID=2829](http://www.forest-trends.org/~forestr/publication_details.php?publicationID=2829).

36. *Overview, VOLUNTARY REDD+ DATABASE*, <http://www.reddplusdatabase.org> (last visited Apr. 20, 2013).

the World Resources Institute.<sup>37</sup> A prerequisite to a successful successor to the Kyoto Protocol—and key to any significant investment in REDD+—is a comprehensive system of measuring, monitoring, reporting, and verifying a variety of parameters that help ensure all parties live up to their stated commitments.<sup>38</sup> An official United States submission to the UNFCCC says that such MMRV provides the necessary “sunshine” to ensure all nations are fulfilling their assumed pledges.<sup>39</sup> All parties want others to make clear commitments and to be confident that everyone is making progress towards fulfilling these commitments.<sup>40</sup> Northern donors and investors want to guarantee a return on their investments, to ensure that Southern governments and communities do what they say they will do, and to ensure that aid reaches the intended communities. Southern governments and communities want to ensure that Northern nations actually fulfill their pledges to reduce GHG emissions, and deliver climate change mitigation and adaptation funding that they pledge. Activists of many stripes want to ensure that investments safeguard and promote economic welfare, human rights, and biodiversity.

The acronym MRV first arose in preparations for the 2007 UNFCCC Conference of Parties’ (CoP) Bali Action Plan, which called for MRV as a crucial element of any new international agreement. The Plan proposed that developing nations, for the first time, would take “[m]easurable, reportable and verifiable nationally appropriate mitigation commitments or actions. . . in the context of sustainable development, supported and enabled by technology, financing and capacity-building.”<sup>41</sup> Developed nations would continue to take on “quantified emission limitation and reduction

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37. Remi Moncel & Kelly Levin, *Transparency and Accountability (MRV) in the Durban Climate Deal*, WRI INSIGHTS (Feb. 13, 2012), <http://insights.wri.org/news/2012/02/transparency-and-accountability-mrv-durban-climate-deal>.

38. See CLARE BREIDENICH & DANIEL BODANSKY, MEASUREMENT, REPORTING AND VERIFICATION IN A POST-2012 CLIMATE AGREEMENT 29 (2009), available at <http://www.c2es.org/docUploads/mrv-report.pdf> (“The ability of parties to reach agreement on new commitments will depend in part on their confidence that those commitments can be reliably measured, reported, and verified.”); see also Copenhagen Accord, *supra* note 15, ¶ 5 (“Mitigation actions. . . will be subject to . . . domestic measurement, reporting and verification the result of which will be reported through . . . national communications every two years.”); Cancun Agreements, *supra* note 28, ¶ 71(c) (calling for the development of “robust and transparent national forest monitoring system[s]”).

39. World Resources Institute, Summary of UNFCCC Submissions April 19, 2010–November 23, 2010, at 10 (working paper), available at [http://pdf.wri.org/working\\_papers/unfccc\\_submissions\\_summary\\_2010-11-23.pdf](http://pdf.wri.org/working_papers/unfccc_submissions_summary_2010-11-23.pdf).

40. See SCHMIDT, *supra* note 9, at 2 (arguing that transparency and accountability are crucial to assuring a successful international legal climate change regime).

41. CoP to the UNFCCC Dec. 1/CP.13, Bali Action Plan, 13th Sess., Dec. 3–15, 2007, ¶ 1(b)(i)–(ii), U.N. Doc. FCCC/CP/2007/6/Add.1 (Mar. 14, 2008).

objectives.”<sup>42</sup> This sets an international law stage for MMRV for Northern and Southern emissions reduction commitments, as well as an MMRV regime for financial and technical support from the North for Southern mitigation activities.

A “crisis of mistrust” lead to the MMRV requirements proposed in the Bali Action Plan and subsequent UN documents.<sup>43</sup> Getting nations to agree to any arrangement would prove difficult. As Murray Ward writes, “Let us put diplomatic niceties aside and be honest. When the term ‘verifiable’ was used in the Bali Action Plan . . . this had little to do with trust and everything to do with lack thereof.”<sup>44</sup> Southern nations continued to insist that Northern nations were and are primarily responsible for global climate change, and thus they should bear the burden both of mitigating GHG build-up and paying for Southern nations to adapt. Northern nations, lead by the U.S., have been reluctant to accept any agreement that does not bind the Southern nations (particularly the booming economies of China, India, Brazil, and like nations) to share the burden of mandatory GHG reductions.<sup>45</sup> Furthermore, they were not about to accept Southern pledges without verification. According to Murray Ward, “based on a long history of under-delivery, developed countries were not to be trusted to provide adequate levels of support for such actions.”<sup>46</sup>

Currently, MMRV is simultaneously a weapon that various parties use to bludgeon others, and a pragmatic set of tools to bring about conciliation. Certainly the planet’s two leading carbon polluters—the United States and China—have not led the way to conciliation.<sup>47</sup> In the run-up to the Cancun CoP meetings, U.S. chief climate diplomat, Todd Stern, noted the raw emotions and resentment engendered by climate change negotiations. He nonetheless made it clear that the era of “differentiated” in “Common but Differentiated Responsibilities” is over, and the era of “common” has begun.<sup>48</sup> In response, Su Wei, a Chinese climate negotiator, compared the

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42. *Id.* ¶ 1(b)(i).

43. Ward, *supra* note 6, at 1.

44. *Id.*

45. Daniel Bodansky, *The Copenhagen Climate Change Conference: A Postmortem*, 104 AM. J. INT’L L. 230, 232 (2010); John M. Broder, *At Climate Talks, a Familiar Standoff Emerges Between the U.S. and China*, N.Y. TIMES (Dec. 7, 2011), <http://www.nytimes.com/2011/12/08/science/earth/at-climate-talks-a-familiar-standoff-emerges-between-the-united-states-and-china.html?>

46. Ward, *supra* note 6, at 1.

47. See Bodansky, *supra* note 45, at 236 (noting that, at Copenhagen, the “principal bone of contention between the United States and China” was the issue of measurement, reporting, and verification of developing countries’ emissions cuts).

48. See *id.* at 240 (distinguishing the Copenhagen Accord from the Kyoto Protocol, which focused more on differentiated responsibilities).

U.S. to Zhu Bajie, an ugly, vain, lazy, gluttonous, part-pig, part-human character in Chinese literature.<sup>49</sup>

Although the two superpower negotiators largely behaved at the UNFCCC Cancun and Durban conferences,<sup>50</sup> the fundamental paradigms that they represent remain incommensurable—although, as I will discuss below, MMRV for REDD+ may bridge this gap. While MMRV stems from this mistrust, it also presents a pathway to qualified, and perhaps genuine, trust. The trick with an MMRV system for REDD+ is to build mutual trust, achieve the multiple synergistic results that REDD+ promises, while simultaneously respecting the legal and ethical underpinnings of Common but Differentiated Responsibilities.

Currently, even if MMRV is key to making progress on battling climate change and deforestation, the precise parameters—who has to meet which MMRV obligations, on what subjects, with what intrusive oversight—has proven somewhat intractable in negotiations to forge multilateral climate change cooperation.<sup>51</sup> According to David Hunter, at Copenhagen:

[T]he entire negotiations pivoted on the extent to which parties could reach consensus on the international MRV requirements that would be applied to their various commitments. This is not surprising given that the MRV requirements in many ways are critical to whether an agreement is or is not functionally binding.<sup>52</sup>

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49. Bruce Ho, *Of Pigs and Mirrors—The Breakdown of the US-China Dialogue in Tianjin*, YALE CTR. FOR ENVTL. LAW & POLICY (Oct. 19, 2010), <http://environment.yale.edu/envirocenter/post/of-pigs-and-mirrors-the-breakdown-of-the-us-china-dialogue-in-tianjin/>.

50. See, e.g., Elliot Diringer, *Why Cancun Delivered*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, ELLIOT DIRINGER'S BLOG (Dec. 11, 2010), <http://www.c2es.org/blog/diringere/why-cancun-delivered> (observing the improved relationship between the U.S. and China at the U.N. climate talks in Cancun); Robert Stavins, *What Happened (and Why): An Assessment of the Cancun Agreements* (Dec. 13, 2013), <http://belfercenter.ksg.harvard.edu/analysis/stavins/?p=876> (“China and the United States set the tone for many other countries by dealing with each other with civility, if not always with understanding.”).

51. David Hunter, *Implications of the Copenhagen Accord for Global Climate Governance*, 10 SUSTAINABLE DEV. L. & POL'Y 4, 14 (2010); see also Bodansky, *supra* note 45, at 232, 236, 240 (noting that, at Copenhagen, developed countries insisted on measurement, reporting, and international review, while China rejected any international review); Anne Arquit Niederberger & Melinda Kimble, *MRV under the UN Climate Regime—Paper Tiger or Catalyst for Continual Improvement?*, 1 GREENHOUSE GAS MEASUREMENT & MGMT. 47, 47 (2011) (“Agreement on ‘monitoring, reporting and verification’ (MRV) provisions for developing countries, as called for in the 2008 Bali Action Plan . . . has proven to be one of the most intractable issues in reaching a global climate deal.”).

52. Hunter, *supra* note 51, at 14; see also Suzanne Goldenberg, *Cancun Climate Change Summit: America Plays Tough*, THE GUARDIAN (Nov. 30, 2010, 8:55 AM), <http://www.guardian.co.uk/environment/2010/nov/30/cancun-climate-change-summit-america> (noting the United States’ intransigent insistence on developing country inspections).

All systems of MMRV must thread the needle between cooperative or punitive, carrot or stick. Furthermore, all nations are not created equal in terms of historical responsibility for climate change and—this is not a coincidence—in terms of their capacity to conduct MMRV. Yet at the same time the methodologies of MMRV must be sufficiently uniform to allow for comparisons and the ability of all parties to review the data.<sup>53</sup> This is particularly slippery when it comes to the delicate question of whether or not developing nations will take on new GHG reduction commitments.

When discussing general compliance problems with international regulation, Abram and Antonia Chayes write, “If we are correct that the principal source of noncompliance is not willful disobedience but the lack of capability or clarity or priority, then coercive enforcement is as misguided as it is costly.”<sup>54</sup> MMRV systems must be sufficiently rigorous to be meaningful, but cost-efficient enough to be practical and to not pull resources from other goals.<sup>55</sup> Some observers urge that the eventual MMRV mechanisms support, rather than burden, developing nations. Particularly if we take Common but Differentiated Responsibilities seriously, this should continue to be the case.<sup>56</sup> Furthermore, delegates to the UNFCCC have named no overarching philosophy for the *purpose* of the MMRV framework that they are developing; are they attempting to verify compliance, facilitate implementation, or something else?<sup>57</sup>

Nonetheless, as I discuss here, the parties are making some progress towards a functional, clear, and enforceable system of MMRV. Confusingly, in the literature, the “M” sometimes stands for “Measurement” and sometimes for “Monitoring.”<sup>58</sup> Both are essential: The acronym should be “MMRV,” and that is what I use here.<sup>59</sup> Note that

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53. Joe Romm, *What Do You Think of the ‘Cancun Agreements’?*, THINKPROGRESS (Dec 11, 2010 2:28 PM), <http://climateprogress.org/2010/12/11/what-do-you-think-of-the-cancun-agreements/> (summarizing the Cancun Agreements by Richard Caperton of the Center for American Progress).

54. ABRAM CHAYES & ANTONIA HANDLER CHAYES, *THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS* 22 (1995).

55. See BREIDENICH & BODANSKY, *supra* note 38 (noting that approaches to MMRV must be practical, cost effective, and rigorous).

56. Niederberger & Kimble, *supra* note 51, at 48; Romm, *supra* note 53.

57. Niederberger & Kimble, *supra* note 51, at 48.

58. TANJA HAVEMANN ET AL., TERRESTRIAL CARBON GRP., POLICY BRIEF 5: MEASURING AND MONITORING TERRESTRIAL CARBON AS PART OF “REDD+” MRV SYSTEMS 2 (2009), available at [http://www.terrestrialcarbon.org/Terrestrial\\_Carbon\\_Group\\_soil\\_%26\\_vegetation\\_in\\_climate\\_solution/Background\\_Reports\\_files/TCG%20Policy%20Brief%205%20Measuring%20and%20Monitoring%2091007.pdf](http://www.terrestrialcarbon.org/Terrestrial_Carbon_Group_soil_%26_vegetation_in_climate_solution/Background_Reports_files/TCG%20Policy%20Brief%205%20Measuring%20and%20Monitoring%2091007.pdf).

59. The more common acronym is “MRV.” The problem with that acronym is that sometimes “M” is for “measuring,” sometimes for “monitoring,” and sometimes for both, even though they are not the same thing. See, e.g., Romm, *supra* note 53 (referring to “measurement, reporting, and verification” as a means of ensuring that countries actually do what they say they will with respect to REDD+ programs). Thus I use both M’s.



MMRV is proposed for a number of global climate change parameters: I will focus on REDD+-related MMRV, but will mention other places where parties seek to impose MMRV to ensure that other parties do what they pledge.

You can *measure* anything quantifiable (and if it's not inherently quantifiable, you can invent scales and gradients to make it so). For REDD+, to measure forest carbon first means assessing the amount (or stock) of carbon in a given area at a given time.<sup>60</sup> Measurement of forest carbon stocks combines remote sensing and other geospatial surveillance with field measurements that ground truth on a finer scale than what is observed from space.<sup>61</sup> Both remote surveillance and ground-truthing pose challenges for a traditional concept of "sovereignty," a point to which we will return later. Both mean that outsiders' eyes may pry into a nation's internal doings.

Once baseline forest stock is measured, future forest carbon emissions and sequestration can be predicted in the absence of REDD+ funding (the Business as Usual, or BAU scenario). Thus funders can gauge whether funded GHG reductions are genuinely additional to what would otherwise occur.<sup>62</sup> For example, an investor from a Northern nation should not be able to receive GHG emissions reduction credits for a REDD+ project that prevents deforestation that would not have occurred anyway; nor should Southern nations necessarily receive cash payments for such projects. Measuring baseline and changing forest stocks are also required to track and prevent leakage, for example ensuring that when one section of forest is preserved, the community or logging company or nation does not simply cut down an equivalent amount of forest elsewhere.<sup>63</sup>

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60. HAVEMANN, *supra* note 58, at 3, 10.

61. See, e.g., TERRESTRIAL CARBON GRP., POLICY BRIEF 6: ESTIMATING TERRESTRIAL CARBON AT RISK OF EMISSION 4, 23 (2009), available at [http://www.terrestrialcarbon.org/Terrestrial\\_Carbon\\_Group\\_soil\\_%26\\_vegetation\\_in\\_climate\\_solution/Policy\\_Briefs\\_files/TCG%20Policy%20Brief%206%20100405.pdf](http://www.terrestrialcarbon.org/Terrestrial_Carbon_Group_soil_%26_vegetation_in_climate_solution/Policy_Briefs_files/TCG%20Policy%20Brief%206%20100405.pdf) (using biomass carbon maps from various sources, along with national-level data, to analyze potential future land use in developing countries).

62. HAVEMANN, *supra* note 58, at 3, 7. The CDM has adopted an "additionality tool" for estimating future forest carbon emissions and sequestration. ADRIAN DEVENY, JANET NACKONEY & NIGEL PURVIS, FOREST CARBON INDEX: THE GEOGRAPHY OF FORESTS IN CLIMATE SOLUTIONS 18 (2009), available at [http://www.rff.org/RFF/Documents/RFF-Rpt-ForestCarbonIndex\\_web.pdf](http://www.rff.org/RFF/Documents/RFF-Rpt-ForestCarbonIndex_web.pdf).

63. See Gary C. Bryner, *Carbon Markets: Reducing Greenhouse Gas Emissions Through Emissions Trading*, 17 TUL. ENVTL. L.J. 267, 291 (2004) ("A carbon trading program must be carefully designed and implemented to ensure that reductions are additional to those expected to result from 'business as usual' investments and that the reductions are permanent and verifiable."); Johannes Ebeling, *Risks and Criticisms of Forestry-Based Climate Change Mitigation and Carbon Trading*, in CLIMATE CHANGE AND FORESTS: EMERGING POLICY AND MARKET OPPORTUNITIES 43, 50–51 (Charlotte Streck et al. eds., 2008) (acknowledging the possibility of international leakage); Nelson, *supra* note 5, at 635 (recognizing the need to "establish a baseline, the business-as-usual scenario that serves as the basis for calculating emission avoidance or reduction"); Imke Sagemüller, *Forest Sinks*

Techniques to measure forest carbon have become increasingly sophisticated.<sup>64</sup> But, as we shall see, various MMRV regimes also seek to measure other indicators of performance, such as governance reforms, development benefits, or human rights adherence. State of the art technology will not help much with measurement here, but precision of the goals or data one is trying to measure will.<sup>65</sup>

To *monitor* is to assess the changes in carbon or any other variable over time.<sup>66</sup> For REDD+, you can track changes in major land use classes and track changes of vegetation density within those classes to monitor changes in carbon sequestration over time.<sup>67</sup> Again, this usually requires higher resolution remote sensing and intensified on-the-ground monitoring for ground truthing and fine-grained analysis.<sup>68</sup> You can also monitor changes in GHG emissions, financial flows, poverty reduction in local communities, species richness, or any other variable once you have measured a baseline and then tracked changes from that baseline.

To *report* is to go public with what you have measured and monitored and thus permit others to see what you are doing and how you are doing it. Successful reporting relies upon excellent measuring and monitoring, and some standardization of format that allows viewers of reported information to compare data; it also allows other parties to learn from what you are doing.<sup>69</sup> Reports may need to document not only forest inventories, but project progress, methodological adherence or problems, financial accounting, adherence to social and environmental standards, and legal reforms or problems. Who must report (National governments? Subnational governments? Businesses?) and what they must report may be contentious;

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*Under the United Nations Framework Convention on Climate Change and the Kyoto Protocol: Opportunity or Risk for Biodiversity*, 31 COLUM. J. ENVTL. L. 189, 195–96 (2006) (“[L]eakage occurs when the project results in deforestation in another location in order to regain necessary space for agricultural use.”); *Readiness Package Content and Assessment Approach: Concept Note – Draft for Feedback* 14, 17–18 (Forest Carbon Partnership Facility, FMT Note 2011–14, 2011), available at <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/FMT%20Note%202011-14%20Readiness%20Package%20Concept.pdf> (identifying leakage as a major risk associated with REDD+ strategies); DEVENY, NACKONEY & PURVIS, *supra* note 62, at 55 (“The most significant risk that could prevent the forest carbon markets from functioning effectively is the problem of *leakage*.”).

64. See, e.g., *What is a Methodology?*, VERIFIED CARBON STANDARD, <http://www.v-c-s.org/methodologies/what-methodology> (explaining the different methodologies of the Verified Carbon Standard) (last visited Apr. 20, 2013).

65. See BREIDENICH & BODANSKY, *supra* note 38, at 4–5 (noting that successful MMRV regimes are a function of precise, reliable data, as well as transparency).

66. HAVEMANN, *supra* note 58, at 2.

67. *Id.*

68. *Id.*

69. See BREIDENICH & BODANSKY, *supra* note 38, at 5 (observing that successful reporting requires precision, reliability, transparency, and standardization); SCHMIDT, *supra* note 9, at 2 (calling for greater transparency in reporting).

for example, some Southern nations want MMRV for private Northern companies' GHG emissions, which businesses consider sensitive information.<sup>70</sup> And to whom one must report may be similarly contentious: A nation may be required to report its data to its own citizens, to national or bilateral funders, to project developers, and/or to international institutions.

To *verify* is to ascertain independently that the information measured, monitored, and reported is accurate.<sup>71</sup> A nation, state, or community where REDD+ projects are situated must have some process whereby an entity with technical REDD+ expertise verifies individual projects as well as overall compliance with national REDD+ plans, standardized MMRV regimes (yes, MMRV for MMRV), social and environmental safeguards, and the like. While it is clear that parties with legal commitments may require formal verification to ascertain that they have done what they are legally bound to do, the legal status of many of the commitments contemplated for a Kyoto successor are more ambiguous.<sup>72</sup> Verification and compliance often overlap: in the former, someone evaluates information accuracy, and in the latter someone offers a legal judgment of whether an entity has met obligations it has assumed.<sup>73</sup> Some parties fear the anti-democratic effects of distant bureaucrats intervening in State or local land decisions.<sup>74</sup> Who verifies (International government bureaucrats? Other states? NGOs? Expert commissions? Private accreditation firms?), how they verify (Visiting sites? Inspecting record books? Remote sensing?), and whether or not verification leads to legal judgments about formal compliance are still to be determined in the REDD+ and broader climate regimes.

### B. MMRV of What? The Complex Regime

What categories of action will require measuring, monitoring, reporting, and verifying? As demands for MMRV spread, different voices call for at least six different regimes of MMRV in the global climate change

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70. See BREIDENICH & BODANSKY, *supra* note 38, at 5 (“[B]usiness actors are often the ultimate target of international environmental standards . . .”); see also FTC Comment Before the EPA Concerning Proposed Rulemaking Regarding Confidentiality Determinations for Greenhouse Gas Data, Docket No. EPA-HQ-OAR-2009-0924, 1-2 (Sept. 30, 2009) (noting that certain categories of emissions data that the EPA proposed making public could enable reporting companies to coordinate pricing).

71. Jorgen Wettstad, *Monitoring and Verification*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 974, 975 (Bodansky et al. eds., 2007). *But see* Ward, *supra* note 6, at 1 (arguing that measuring and reporting may be sufficient and that it is generally unnecessary to further verify).

72. Ward, *supra* note 6, at 1 (conceding that verification is necessary where legal commitments exist).

73. Wettstad, *supra* note 71; BREIDENICH & BODANSKY, *supra* note 38, at 7.

74. William Boyd, *Climate Change, Fragmentation, and the Challenges of Global Environmental Law: Elements of a Post-Copenhagen Assemblage*, 32 U. PA. J. INT’L L. 457, 490 (2010).

regime in general and for REDD+ assistance in particular. Comprehensive MMRV is being implemented or proposed for:

- Carbon sequestered in the forests of the global South;
- Governance reforms, particularly with respect to forest governance, in the global South;
- Actual GHG reductions achieved in the global North and South;
- Northern financial and technological support for Southern GHG reductions (particularly with respect to REDD+);
- Biodiversity conservation in the global South; and
- Social safeguards and economic development goals for REDD+ in the global South.

Developed nations have pledged \$30 billion for fast-track assistance for mitigation activities in the developing world, and \$100 billion annually by 2020, with some portion of this for REDD+. Northern donors, led by the U.S., are insisting on MMRV for all REDD+ (and other mitigation) actions. They are asking for firm reduction commitments from Southern nations (particularly the larger, BASIC nations—Brazil, South Africa, India, and China—*especially* China) that are subject to MMRV review. Because forests comprise the South's most bountiful carbon resource, that's where much of the MMRV will focus.<sup>75</sup> In the discussion below, I will highlight examples from national "Readiness Preparation Proposals" (R-PPs), as nations line up to explain the MMRV plans that will allow them to access funds from the World Bank's Forest Carbon Partnership Facility (FCPF).<sup>76</sup>

But Southern nations, too, are seeking greater transparency to ensure that Northern nations actually deliver pledged GHG reductions and financial and technical aid. Cross-cutting these divides, NGOs and other activists seek MMRV protections for diverse ecological and social goals.

Formulating an MMRV regime that fulfills dizzyingly diverse interests is the key to forging a successor to the Kyoto Protocol and to advancing any mutually agreeable REDD+ program. That MMRV regime, in turn, is the necessary prerequisite for major GHG emitters (in both developed and

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75. See, e.g., Brian Walsh, *At Cancún, a New Pragmatism in Climate Policy*, TIME, Dec. 13, 2010, available at <http://www.time.com/time/health/article/0,8599,2036642,00.html> (noting that deforestation is responsible for 12 to 17 percent of global GHG emissions each year). See generally Broder, *supra* note 45 (discussing potential international climate change agreements).

76. *R-PP Submissions - Most Recent*, FOREST CARBON PARTNERSHIP FACILITY, <http://www.forestcarbonpartnership.org> (listing most recent R-PP documents) (last visited Apr. 20, 2013). See also sources cited *infra* notes 105, 153.

developing worlds) to pledge to reduce those emissions, to ensure that billions of dollars of (sorely needed) aid flows from the North to the South, and to protect healthy forest ecosystems in the global South.

### C. Forest Cover Calculations

Remote sensing and other technologies have helped make tropical forests a measurable object of climate governance. When technologies allow remote observers to calculate the amount of carbon sequestered in an area, this ensures that forest carbon can be fungible with more easily calculated forms of industrial carbon pollution.<sup>77</sup> That is to say, a ton of carbon that a German coal-burning power plant emits is the accounting equivalent of a ton of carbon stored in a Tanzanian tree that would otherwise be chopped down, and we can monitor whether that carbon remains stored.

To access the billions of dollars in REDD+ aid, nations, subnational entities, or private landowners must either reforest degraded land or avoid deforesting land that would otherwise be denuded. REDD+ funds hinge on MMRV for deforestation and reforestation rates. For donor nations, this means instituting a system of MMRV to ensure that reforestation and deforestation efforts are successful—that the Southern nation or community plants new trees or preserves existing trees where it says it has. Accurate carbon emissions accounting requires MMRV for the rate of change of forest cover and the density of carbon stored per hectare of forest.<sup>78</sup>

And so, for example, to ensure the reliability of compliance grade carbon available as offsets for California's Assembly Bill (AB) 32, the Global Warming Solutions Act, the REDD Offset Working Group proposes:

[F]ield measurements and data provided by satellites, and where the technology is available, sensors mounted on airplanes. Satellites provide a convenient (and typically cost-effective) means to monitor changes in forest cover associated with deforestation, degradation and regrowth. These changes in cover can be used in conjunction with base maps of forest carbon densities, and the density of

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77. See Boyd, *supra* note 74, at 525–26 & n.220 (noting that there are increasingly powerful and technologically advanced methods of MMRV); William Boyd, *Ways of Seeing in Environmental Law: How Deforestation Became an Object of Climate Governance*, 37 *ECOLOGY L.Q.* 843, 884 (2010) (noting that remote sensing has offered policymakers “a previously unavailable synoptic view of tropical deforestation”).

78. ELEC. POWER RESEARCH INST., *supra* note 17, at 2–7.

carbon in the vegetation that replaces the forests, to estimate emissions.<sup>79</sup>

This means that every inch of a nation's territory would be surveyed from space; patrols on the ground provide verification of satellite data, and add fine-grained details of an area's forest. Carbon2Markets has developed an online Carbon MRV toolbox that "provides an enterprise-wide solution of on-line tools for planning and implementing national forest inventory for carbon, development and management of carbon projects across all of your organization's offices and units, and enterprise training and capacity-building."<sup>80</sup> Google is offering Southern nations free hours of its "Google Earth Engine," which can be used to track forest cover. But the tool can also be used by anyone, whether or not the Southern nation wants to be monitored.<sup>81</sup>

Carnegie Institution scientist Greg Asner has invented Airborne Taxonomic Mapping System (AToMS) using LiDAR, a laser that can produce a 3D picture of the forest canopy from an airplane.<sup>82</sup> LiDAR "employs two powerful lasers to blast through canopy vegetation, reach the forest floor . . . [and] map the forest at resolutions ranging from 10 centimeters to one meter, fine enough to 'see' understory shrubs and epiphytes in tree crowns."<sup>83</sup> In order for the system to work, the LiDAR team must do intensive work in the actual forests to compile detailed information on the forest's composition.<sup>84</sup>

Even with LiDAR, Google Earth or similar technologies, foot patrols back up the accuracy of the remotely sensed data to make sure that the broad changes observed from on high dovetail with what is actually happening under the forest canopy. This combined spatial and on-the-

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79. THE REDD OFFSET WORKING GROUP, *supra* note 29, at 42.

80. *NEW! Carbon MRV Tool: An Enterprise On-Line Carbon Measurement, Reporting, and Verification (MRV) Toolbox*, CARBON2MARKETS, <http://www.carbon2markets.org/content.cfm?m=52&id=52&startRow=1&mm=0> (last visited Apr. 20, 2013).

81. Rhead Enion, *Google Earth Engine and Forest Offsets in California Cap-and-Trade*, LEGAL PLANET: THE ENVTL. LAW & POLICY BLOG (Dec. 7, 2010), <http://legalplanet.wordpress.com/2010/12/07/google-earth-engine-and-forest-offsets-in-california-cap-and-trade/>.

82. See Rhett Butler, *Evolutionary Technology is Unlocking Secrets of the Forest*, YALE ENV'T 360 (Oct. 3, 2011), [http://e360.yale.edu/feature/carnegie\\_airborne\\_observatory\\_technology\\_unlocks\\_secrets\\_of\\_the\\_rain\\_forest/2447/](http://e360.yale.edu/feature/carnegie_airborne_observatory_technology_unlocks_secrets_of_the_rain_forest/2447/) (noting that LiDAR uses two lasers that can read through the forest canopy to map forests at resolutions ranging from ten centimeters to one meter); Joyce, *supra* note 8 (noting that LiDAR can provide metrics on how healthy and diverse a forest is).

83. Butler, *supra* note 82.

84. *Id.*

ground scrutiny marks a noted incursion into a nation's sovereign territory.<sup>85</sup>

#### D. Governance Reforms

Northern nations are also promoting MMRV schemes for governance reforms—essentially using MMRV as governance of governance. Various organizations have established performance indicators for good governance.<sup>86</sup> That is to say, “governance,” too, can be quantified and measured by entities seeking empirical assurance that their financial investments reach their intended destinations and fulfill their intended goals. The UN’s REDD Programme, for example, is developing governance “indicators” that would be fundamental prerequisites of REDD+ aid.<sup>87</sup> The World Resources Institute and other NGOs have put forth a “Governance of Forests Toolkit,” with indicators for forest tenure, land use planning, forest management, and forest revenues and incentives, to help developing nations reform the governance that drives deforestation and to help them efficiently attract and spend REDD+ funds.<sup>88</sup> Intended, in part, for REDD+ Readiness initiatives, Profor, “a multi-donor partnership”<sup>89</sup> (all donors are Northern nations), has developed a “tool” that provides indicator sets to measure forest governance, including “the norms, processes, instruments, people,

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85. Note that all the Readiness Preparation Proposals submitted to the Forest Carbon Partnership Facility include extensive plans for MMRV of national forests. FOREST CARBON P’SHIP FACILITY, *supra* note 76.

86. See, e.g., Daniel Kaufmann, Aart Kraay, & Massimo Mastruzzi, *Governance Matters VIII: Aggregate and Individual Governance Indicators 1996-2008*, at 22 (World Bank Dev. Research Grp., Policy Research Working Paper 4978, June 2009) (describing trends in global averages of governance); BRENDA BRITO ET AL., THE GOVERNANCE OF FORESTS INITIATIVE, THE GOVERNANCE OF FORESTS TOOLKIT (VERSION 1): A DRAFT FRAMEWORK OF INDICATORS FOR ASSESSING GOVERNANCE OF THE FOREST SECTOR (2009), available at [http://pdf.wri.org/working\\_papers/gfi\\_tenure\\_indicators\\_sep09.pdf](http://pdf.wri.org/working_papers/gfi_tenure_indicators_sep09.pdf) (outlining a performance indicator toolkit created by the Governance of Forests Initiative); NALIN KISHOR & KENNETH ROSENBAUM, PROGRAM ON FORESTS, ASSESSING AND MONITORING FOREST GOVERNANCE: A USER’S GUIDE TO A DIAGNOSTIC TOOL (2012), available at <http://www.profor.info/profor/sites/profor.info/files/docs/AssessingMonitoringForestGovernance-guide.pdf> (providing indicators that countries can use to diagnose the strengths and weaknesses of forest governance); *Worldwide Governance Indicators*, WORLD BANK, <http://info.worldbank.org/governance/wgi/index.asp> (last visited Apr. 20, 2013) (reporting aggregate and individual governance indicators for 215 economies between 1996 and 2011 based on six governance metrics).

87. See *Scope of Work – Towards a “Governance MRV Framework”* 3–5 (UN-REDD Programme, Draft 1, 2009) [hereinafter UN-REDD Program Draft 1], available at [http://www.unredd.net/index.php?option=com\\_docman&task=doc\\_download&gid=310&Itemid=53](http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=310&Itemid=53) (noting that the UN-REDD Programme is “well positioned” to contribute to governance indicators for MMRV frameworks).

88. BRITO ET AL., *supra* note 86, at 4–5; see also *Worldwide Governance Indicators*, *supra* note 86 (reporting on governance indicators).

89. PROFOR, <http://www.profor.info/profor/> (last visited Apr. 20, 2013).

and organizations that control how people interact with forests.”<sup>90</sup> The authors advise that “[m]easurement serves reform; the parties who propel reform forward—the government and key stakeholders—must be open to change, or the results of measurement will not be put to full use.”<sup>91</sup> The American Clean Energy and Security Act (ACES 2009), which cleared the U.S. House of Representatives but failed in the Senate, contained extensive provisions for REDD+ offsets and REDD+ aid but required that recipient nations possess the institutional capacity to reduce emissions from deforestation, including strong forest governance and mechanisms to equitably distribute deforestation resources for local actions.<sup>92</sup>

Those calling for MMRV for governance do not lack justification.<sup>93</sup> Researchers believe that governance for forests—one of the main resources Southern nations possess—is key to helping local communities ensure that they can reduce poverty and safeguard their resources in the most sustainable way.<sup>94</sup> That is to say, REDD+ Governance MMRV is not just about REDD+, not just about reforming what government elites can or must do, and not just about forests—it can be key to reforming and re-imagining how governments can be responsive to local concerns while preserving the ecological resources that sustain local communities.

Furthermore, the reasons tropical forests are disappearing in the first place include poor or inadequate governance structures.<sup>95</sup> Northern donors cite problems with Southern government corruption and seek some assurances that a nation’s elite will not arrogate REDD+ funds at the expense of the poor and the forests upon which they depend.<sup>96</sup> The UN-

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90. KISHOR & ROSENBAUM, *supra* note 86, at 3.

91. *Id.* at 4.

92. American Clean Energy and Security Act, H.R. Res. 2454, 111th Cong. § 754.

93. See Michael N. Brown, *Limiting Corrupt Incentives in a Global REDD Regime*, 37 *ECOLOGY L.Q.* 237 (2010) (reviewing places where corruption is likely to emerge in REDD+).

94. UN-REDD Program Draft 1, *supra* note 87, at 2 n.1.

95. See, e.g., CARMENZA ROBLEDO ET AL., *CLIMATE CHANGE AND GOVERNANCE IN THE FOREST SECTOR* 5 (2008), available at <http://www.rightsandresources.org/documents/index.php?pubID=857> (explaining how poor governance drives “[p]overty-driven deforestation”).

96. For example, numerous REDD+ projects and much aid is proposed for Africa—a continent that makes international investors wary. In the 2009 Corruption Perceptions Index, which reports data from 180 nations, African nations filled 21 of the bottom 50 spots, and only three (Botswana 37<sup>th</sup>; Mauritius 42<sup>nd</sup>; Cape Verde 46<sup>th</sup>) of the top 50 spots, scoring over 5 on a 1-10 scale. Of the 47 African countries reviewed, 31 scored less than 3 (on a scale of 1-10), meaning that corruption is perceived as rampant, while 13 scored between 3 and 5, meaning that country experts and international businesspeople perceive that corruption is a serious challenge. *Corruption Perception Index 2009*, TRANSPARENCY INT’L, [http://archive.transparency.org/policy\\_research/surveys\\_indices/cpi/2009/cpi\\_2009\\_table](http://archive.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table) (last visited Apr. 20, 2013). Part of becoming REDD+-ready may include overcoming these perceptions to make African nations friendlier to all kinds of investment. The World Bank ranks nations in terms of “Ease of Doing Business,” measuring whether a nation’s regulatory environment facilitates or constrains doing business in the nation. Of 183 countries, only Mauritius (#19), South



REDD program cites many “[g]overnance challenges,” including “unenforced land tenure systems, elite capture, marginalization of stakeholders, uncoordinated mechanisms or corruption,” among others, and notes that cash infusions for REDD+ may either improve or exacerbate problems in forest governance.<sup>97</sup> The Governance of Forests Toolkit cites “low levels of transparency, accountability, and participation in decision-making and a lack of capacity and coordination in forest management and administration. These manifest in high levels of corruption, pervasive illegal and unplanned forest conversion and use, and conflicts over forest ownership and access rights.”<sup>98</sup> Governments that lack clear legal structures for forests—or that have trouble enforcing laws that are on the books—have not been able to administer other forest regimes (e.g. logging concessions), favor one set of entities over another (e.g. elite over poor), lack mechanisms for participation from those communities most affected by forest destruction or degradation, are corrupt or unstable, or whose various bureaus work at cross purposes will have difficulty legislating, administering, and enforcing programs that make use of REDD+ funds.<sup>99</sup>

Critics allege that some early REDD+ projects exacerbated inequality and resulted in a flow of funds from South to North, abetted by or hobbled by poor governance in project nations.<sup>100</sup> What MMRV strings should be attached to avoid this? One international meeting, sponsored by the UN REDD Programme and Chatham House, listed as core governance

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Africa (#39) and Botswana (#45) make the top 50 nations. 31 of the bottom 50 nations are in Africa. The Democratic Republic of Congo and the Central African Republic—which offer two of the world’s highest rankings of available land based carbon—are within the bottom three on the list. *Economy Rankings*, DOING BUSINESS, <http://www.doingbusiness.org/economyrankings/> (last visited Apr. 20, 2013).

97. UN-REDD Program Draft 1, *supra* note 87, at 3; *see also* Kanowski et al., *supra* note 27, at 113 (noting that the financial resources available to developing countries under REDD programs could actually exacerbate factors that lead to forest loss and degradation).

98. BRITO ET AL., *supra* note 86, at 1–2.

99. TAKACS, FOREST CARBON, *supra* note 16, at 22; *see also* LAWRENCE C. CHRISTY ET AL., FOREST LAW AND SUSTAINABLE DEVELOPMENT: ADDRESSING CONTEMPORARY CHALLENGES THROUGH LEGAL REFORM 29–31 (2007) (noting that, in some areas of the world, the state may be the *de jure* owner of a forest, but it is so weak that local or indigenous groups still claim rights to—or even control of—the resource); Daniel Fitzpatrick, *Evolution and Chaos in Property Rights Systems: The Third World Tragedy of Contested Access*, 115 YALE L.J. 996, 1020 (2006) (noting that local communities are “socially and economically dependent on the forest” and therefore may be unlikely to transfer forest resources to outsiders, resulting in a “conflict between legal and norm-based systems”); Paul Mathieu, *Legal Empowerment in Practice to Secure the Land Rights of the Poor—A Short Concept Note*, in LEGAL EMPOWERMENT IN PRACTICE: USING LEGAL TOOLS TO SECURE LAND RIGHTS IN AFRICA 21, 23 (Lorenzo Cotula & Paul Mathieu eds., 2008) (listing trends and factors that threaten land rights of poor peoples in Africa); Michael Phillips, *Raising the Roof: In Africa, Mortgages Boost an Emerging Middle Class*, WALL ST. J., (July 17, 2007), <http://online.wsj.com/article/SB118461080487067841.html> (describing corruption in the Zambian land ministry as a former obstacle to land transactions).

100. *See* sources cited *supra* note 26.

parameters “[c]lear and coherent policy, legal, institutional and regulatory frameworks,” “[e]ffective implementation, enforcement and compliance” (including effective and honest judicial system and anti-corruption measures), and “[t]ransparent and accountable decision-making institutions” (including stakeholder participation parameters and conflict resolution and grievance measures).<sup>101</sup>

In their R-PPs to acquire World Bank FCPF funding, many nations are opening up their governance systems to MMRV. Kenya, for example, acknowledges that “[p]oor governance was identified as one of the major drivers of deforestation and degradation and a number of candidate strategies are proposed to address this . . . . Monitoring the impact of governance measures requires assessment of the success in applying those governance measures.”<sup>102</sup> Among the governance indicators to be included in MMRV are “[d]evelopment of subsidiary legislations to support implementation of the Forests Act 2005,” “[h]armonization of sectoral policy instrument to reduce conflicts,” and “[s]trengthening community participation and private sector engagement in management of forest resources.”<sup>103</sup> The Lao Democratic People’s Republic models its comprehensive governance framework on the results of an international workshop supported by the UK, the UN-REDD programme, and international NGOs; it proposes a system of Governance MMRV for variables such as “policy implementation, law enforcement, compliance with environmental laws (e.g. hydropower, mining), illegal logging, land use and carbon rights, equity of benefit-sharing arrangements, corruption, institutional performance, [and] conflict resolution mechanisms.”<sup>104</sup>

Other nations seeking the thousands of dollars of REDD+ Readiness are also agreeing to open up their international governance structures to external MMRV.<sup>105</sup> These parameters traditionally fall within the purview

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101. CHATHAM HOUSE & UN-REDD PROGRAMME, MONITORING GOVERNANCE SAFEGUARDS IN REDD+: CHATHAM HOUSE & UN-REDD PROGRAMME WORKSHOP 4 (2010), *available at* [http://www.un-redd.org/Events/Chatham\\_House\\_Workshop/tabid/4522/language/en-US/Default.aspx](http://www.un-redd.org/Events/Chatham_House_Workshop/tabid/4522/language/en-US/Default.aspx).

102. GOV’T OF KENYA, REVISED REDD READINESS PREPARATION PROPOSAL 74 (2010), *available at* <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct2010/Revised%20RPP%20for%20Kenya.pdf>.

103. *Id.*

104. LAO PDR, READINESS PREPARATION PROPOSAL 81–82 (2010) [hereinafter “LAOS R-PP”], *available at* <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Sep2011/Lao%20R-PP%20Final%20draft%20revised%2021%20DEC%202010-CLEAN.pdf>.

105. All proposals can be found at the Forest Carbon Partnership Facility website. *See* FOREST CARBON PARTNERSHIP FACILITY, *supra* note 76; *see, e.g.*, GOV’T OF ARGENTINA, READINESS PREPARATION PROPOSAL 7 (2010) [hereinafter ARGENTINA R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Jun2010/Argentina\\_R-PP\\_June\\_2010\\_0.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Jun2010/Argentina_R-PP_June_2010_0.pdf); GOV’T OF CAMBODIA, READINESS PREPARATION PROPOSAL 80, 91–94 (2011) [hereinafter CAMBODIA

of national governments. So, for example, when the UN-REDD Programme discusses its scope of MMRV work to address “unenforced land tenure systems, elite capture, marginalization of stakeholders, uncoordinated mechanisms or corruption,”<sup>106</sup> it is reaching deep into the traditional sovereign purview of nation states. To overcome sovereignty concerns requires delicate negotiations to enable external monitors to collect data and assess international governance structures, or to re-imagine what sovereignty means—a point to which we’ll return.

### *E. Pledged GHG Emissions Reductions*

Both South and North want the other to actually reduce their emissions. These reductions are at the heart of the efforts to mitigate climate change and require MMRV.

Under the UNFCCC/Kyoto Protocol, all nations have had to report on their GHG emissions and emissions reductions, with developed nations having somewhat rigorous and frequent reporting obligations, with

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R-PP], available at <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar2011/Cambodia%20R-PP-Final%20Clean%20Version-%20March%205%2C%202011.pdf>; GOV'T OF THE CENTRAL AFRICA REPUBLIC, READINESS PREPARATION PROPOSAL 104 (2011) [hereinafter CENTRAL AFRICAN REPUBLIC R-PP], available at [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct2011/CAR\\_Revised\\_formal\\_R-PP\\_English\\_translation-main%20text\\_October\\_7\\_2011.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct2011/CAR_Revised_formal_R-PP_English_translation-main%20text_October_7_2011.pdf); DEMOCRATIC REPUBLIC OF THE CONGO, READINESS PREPARATION PROPOSAL 98–99 (2010) [hereinafter DRC R-PP], available at [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar2010/RDC\\_R-PP\\_version\\_2\\_March\\_2010\\_English.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar2010/RDC_R-PP_version_2_March_2010_English.pdf); FED. DEMOCRATIC REPUBLIC OF ETHIOPIA, READINESS PREPARATION PROPOSAL 52 (2011) [hereinafter ETHIOPIA R-PP], available at [http://www.forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/Jan2011/R-PP\\_Ethiopia-formal\\_submission-January\\_10\\_2011.pdf](http://www.forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/Jan2011/R-PP_Ethiopia-formal_submission-January_10_2011.pdf); GUATEMALA, READINESS PREPARATION PROPOSAL 143–46 (2012) [hereinafter GUATEMALA R-PP], available at <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar2012/Guatemala%20Final%20RPP-March2nd%20version-ENGLISH-March%2014%2C%202012.pdf>; GOV'T OF MADAGASCAR, READINESS PREPARATION PROPOSAL 85 (2010) [hereinafter MADAGASCAR R-PP], available at <http://www.forestcarbonpartnership.org/sites/forestcarbonpartnership.org/files/Documents/PDF/Nov2010/Madagascar%20presentation%20at%20PC7%20-%20Washington%20DC.pdf>; GOV'T OF PERU, READINESS PREPARATION PROPOSAL (2011) [hereinafter PERU R-PP], available at <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar2011/Peru%20R-PP-%20Final%20English%20Translation-March7%20version-March16%2C%202011.pdf>; UNITED REPUBLIC OF TANZANIA, READINESS PREPARATION PROPOSAL 58 (2010) [hereinafter TANZANIA R-PP], available at [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct2010/REVISED\\_FINAL\\_Tanzania.R-PP\\_main\\_document.V12\\_7.10.2010%5B1%5D.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct2010/REVISED_FINAL_Tanzania.R-PP_main_document.V12_7.10.2010%5B1%5D.pdf); GOV'T OF UGANDA, REDD READINESS PREPARATION PROPOSAL FOR UGANDA 134, 143 (2011) [hereinafter UGANDA R-PP], available at [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/May2012/Uganda%20R-PP%20Submitted%20%28Revised%20in%20Compliance%20with%20Resolution%20PC\\_9\\_2011\\_3%20%29%20Including%20Participation%20and%20Consultation%20Plan%20%28M.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/May2012/Uganda%20R-PP%20Submitted%20%28Revised%20in%20Compliance%20with%20Resolution%20PC_9_2011_3%20%29%20Including%20Participation%20and%20Consultation%20Plan%20%28M.pdf). I did not review R-PPs written in languages other than English.

106. UN-REDD Program Draft 1, *supra* note 87, at 3.

verification from expert teams.<sup>107</sup> Annex 1 nations (those developed nations that take on formal GHG reduction commitments under the Kyoto Protocol) must report the quantity of their reductions, as well as the actual means they have used to achieve those reductions.<sup>108</sup> An electronic system tracks these national registries, with oversight from the UNFCCC secretariat.<sup>109</sup> While some observers note that this system works well,<sup>110</sup> some critics advocate more frequent, more transparent, more reviewable, and more detailed MMRV.<sup>111</sup> However, this system did not become operational until 2008, eleven years after the Kyoto Protocol was formalized (and three years after it went into effect), and formal review did not happen until 2009; thus it is difficult to assess how well this system works.<sup>112</sup> Annex 1 parties also need to describe how they are meeting their GHG reduction goals, although no standardized methodology allows comparisons across nations, and outsiders have few opportunities to assess the accuracy of these data.<sup>113</sup>

Non-Annex 1 developing nations have no mandatory GHG reduction commitments and often lack resources to conduct extensive MMRV; their reporting (and subsequent verification) requirements have been easier. While MMRV for Annex 1 nations allows verifiers to review progress

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107. See Wettestad, *Monitoring and Verification*, *supra* note 71, at 992 (explaining how monitoring and verification will work under the Kyoto global emissions trading regime); BREIDENICH & BODANSKY, *supra* note 38, at 11 (noting that Annex 1 parties must submit detailed GHG inventories, which are subject to annual review by expert teams); SCHMIDT, *supra* note 9, at 8–9 (comparing commitments between Annex 1 and Non-Annex 1 parties).

108. See BREIDENICH & BODANSKY, *supra* note 38, at 15 (“Annex 1 parties are required to provide detailed information on the policies and measures they are implementing to meet their Convention obligations and their Kyoto targets.”); see also Kyoto Protocol to the United Nations Framework Convention on Climate Change art. 7, Dec. 11, 1997, 2303 U.N.T.S. 148; Existing Requirements for Reporting and Review for Annex 1 Parties under the Convention and the Kyoto Protocol, UNFCCC, [http://unfccc.int/national\\_reports/reporting\\_and\\_review\\_for\\_annex\\_i\\_parties/items/5689.php](http://unfccc.int/national_reports/reporting_and_review_for_annex_i_parties/items/5689.php) (last visited Apr. 20, 2013); CoP to the UNFCCC Dec. 13/CMP.1, Modalities for the Accounting of Assigned Amounts Under Article 7, Paragraph 4, of the Kyoto Protocol, 1st Sess., Nov. 28–Dec. 10, 2005, U.N. Doc. FCCC/KP/CMP/2005/8/Add.2 (Nov. 30, 2005); CoP to the UNFCCC Dec. 15/CMP.1, Guidelines for the Preparation of the Information Required Under Article 7 of the Kyoto Protocol, 1st Sess., Nov. 28–Dec. 10, 2005, U.N. Doc. FCCC/KP/CMP/2005/8/Add.2, ¶ 1–3, Annex I(D)(5) (Mar. 30, 2006); CoP to the UNFCCC Dec. 16/CMP.1, Decisions Adopted by the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol: Land Use, Land Use Change and Forestry, 1st Sess., Nov. 28–Dec. 10, 2005, U.N. Doc. FCCC/KP/CMP/2005/8/Add.3, at 3 (Mar. 30, 2006); CoP to the UNFCCC Dec. 19/CMP.1, Guidelines for National Systems Under Article 5, Paragraph 1 of the Kyoto Protocol, Nov. 28–Dec. 10, 2005, U.N. Doc. FCCC/KP/CMP/2005/8/Add.3, pmb1., Annex I (Mar. 30, 2006); UNFCCC, Guidelines for the Preparation of National Communications by Parties Included in Annex 1 to the Convention, Part II: UNFCCC Reporting Guidelines on National Communications, U.N. Doc. A/RES/FCCC/CP/1999/7, at 82 (Feb. 16, 2000).

109. BREIDENICH & BODANSKY, *supra* note 38, at 14.

110. Niederberger & Kimble, *supra* note 51, at 51.

111. See, e.g., SCHMIDT, *supra* note 9, at 3–4 (suggesting improvements to the national communication process for developing countries).

112. BREIDENICH & BODANSKY, *supra* note 38, at 14.

113. *Id.* at 15.

towards GHG reduction goals, MMRV for non-Annex 1 nations is largely meant as advisory and serves to identify where the international community might assist in capacity building.<sup>114</sup> According to Breidenich & Bodansky, currently the developing nations' MMRV requirements are "not adequate to produce accurate, complete, comparable, and transparent GHG inventories."<sup>115</sup> Under the principle of Common but Differentiated Responsibilities (see Part III below), Southern nations may either continue to have light, and perhaps not particularly meaningful, MMRV regimes or, with adequate Northern financial support, may have rigorous, meaningful MMRV requirements.<sup>116</sup>

The South is looking for more rigorous MMRV to ensure that the Northern nations are reducing as they say they are.<sup>117</sup> GHG accounting methodologies, particularly under market-based mechanisms (for example, cap and trade) may be opaque—that is, difficult to fully MMRV.<sup>118</sup> At the same time, the North is insisting that Southern nations also make emissions reduction pledges and that they are monitored and verified.<sup>119</sup> If the current negotiating track continues, developing nations' GHG inventories will be limited to Nationally Appropriate Mitigation Actions (NAMAs), and the actual mitigation actions will be heavily weighted towards forest cover. Thus, the MMRV for emissions reductions (or reversals) will be governed by the parameters I discussed above.

For Southern nations, accurate and adequate baseline GHG emissions would be required—with adequate MMRV—against which to measure future reductions. Northern nations may want to assess not just developing nation *actions* as a proxy for actual reductions, but the *results* of those actions—do they actually result in GHG emissions reductions?<sup>120</sup> How

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114. *Id.* at 12–13.

115. *Id.* at 13.

116. See SCHMIDT, *supra* note 9, at 4 (arguing that developed countries should help developing countries build robust, transparent monitoring systems to track progress in reducing emissions).

117. Southern voices, of course, are not monolithic. There is a perverse incentive for some in the South to desire that the North *not* reduce so that the North will keep paying the South to balance the GHG books.

118. See, e.g., *MRV and the Virtues of Clarity*, CLIMATE ACTION NETWORK INT'L (Dec. 7, 2011), <http://www.climatenetwork.org/blog/mrv-and-virtues-clarity> (arguing for greater transparency in MMRV).

119. See Broder, *supra* note 45 (noting China's insistence on being treated differently from "rich countries" under the UNCCC); Walsh, *supra* note 75 (noting that the U.S. insists that developing countries shoulder the burden of emissions reductions); Todd Stern, Special Envoy for Climate Change, Remarks at University of Michigan Law School: A New Paradigm: Climate Change Negotiations in the Post-Copenhagen Era (Oct. 8, 2011), *available at* <http://www.state.gov/e/oes/rls/remarks/2010/149429.htm> (noting that "developing countries agreed that their implementation would be subject to some measure of international transparency").

120. This is a topic of debate. See REDD-NET, MONITORING, REPORTING AND VERIFICATION OF GREENHOUSE GAS EMISSIONS 2 (2010), *available at* <http://redd-net.org/files/MRV%20of%20GHG.pdf>.

these nations would report their results, who would verify them, and what the results of verification would be (merely consultative and supportive, or with some strictures for failing to meet named targets?) is contentious.<sup>121</sup>

*F. Northern Financial and Technology Pledges*

It is not simply that Northern nations are imposing a set of norms with MMRV strings attached, but that Northern nations are possibly governing Southern citizens without their consent.<sup>122</sup> Southern nations are demanding MMRV for Northern financial and technical pledges, which they would then link to concomitant mitigation actions of their own.<sup>123</sup> The Bali Action Plan brought this to the fore in its call for “[n]ationally appropriate mitigation actions . . . supported and enabled by technology, financing and capacity-building, in a measurable reportable and verifiable manner.”<sup>124</sup> In recent negotiations, India and other developing nations officially submitted requests that MMRV apply not just to GHG reduction actions, but to financial and technological support for such actions.<sup>125</sup> For example, Tuvalu submitted a comment noting that:

[w]ith respect to the provision of financing it is our view that current measures for reporting financial contributions by Annex I Parties are inadequate and haphazard . . . . Tuvalu believes that a process needs to be established to develop specific reporting guidelines for financial support. . . . Tuvalu believes that all financial contributions made by Annex I Parties need to be reported in a consistent, transparent and verifiable manner.<sup>126</sup>

The Copenhagen Accord agreed on \$30 billion in “new and additional” fast start finance between 2010–2012 (much of which has not yet been forthcoming), and for \$100 billion per year of finance by 2020.<sup>127</sup> However,

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121. *See id.*

122. *See* Gregory Shaffer & Daniel Bodansky, *Transnationalism, Unilateralism, and International Law*, 1 *TRANSNAT'L ENVTL. L.* 31, 38 (2012) (explaining that “multilateral decision-making not based on consensus would be illegitimate”).

123. BREIDENICH & BODANSKY, *supra* note 38, at 1.

124. UNFCCC Decision 1/CP.13, *supra* note 41, ¶ 1(b)(ii).

125. *See* World Resources Institute, *supra* note 39, at 16.

126. UNFCCC Ad Hoc Working Group on Long-term Cooperative Action, *Work Programme on Enhanced Measurement, Reporting and Verification for Parties Included in Annex I to the Convention*, U.N. Doc. FCCC/AWGLCA/2011/MISC.6/Add.1 (Apr. 4, 2011), available at <http://unfccc.int/resource/docs/2011/awglca14/eng/misc06a01.pdf>.

127. Copenhagen Accord, *supra* note 15, ¶ 8.

negotiators did not define “new and additional.”<sup>128</sup> This means both that a clear baseline must be established (so one can verify what is “new” and “additional”), and the finance data must be available to all interested parties.<sup>129</sup>

Currently, developed nations are required to report financial resources they dedicate to helping developing nations mitigate their GHG reductions, adapt to climate change, and fulfill their UNFCCC/Kyoto Protocol requirements (including their MMRV requirements).<sup>130</sup> But reporting parameters are inconsistent, and developing nations allege that some Northern nations have repeatedly pledged aid that was never delivered.<sup>131</sup> While compliance with financing for other multilateral environmental agreements has been good, those commitments were a pittance compared to what Southern nations are asking for,<sup>132</sup> and Northern nations are proposing, in a Kyoto successor.<sup>133</sup> This prospective transfer of wealth partially explains why Southern entities would accept intrusive MMRV.

Furthermore, some of what is reported or proposed as new climate change aid may not genuinely be additional. It may have been pledged anyway and later counted as new sources of funding, or it was pledged for a related development goal (e.g., “sustainable forestry”) and got redirected or double counted as “new” climate change aid.<sup>134</sup> Stadelmann proposes that

128. Martin Stadelmann, J. Timmons Roberts & Axel Michaelowa, *Keeping a Big Promise: Options for Baselines to Assess “New and Additional” Climate Finance 2* (Ctr. for Comparative & Int’l Studies, Working Paper Nr. 66, 2010), available at [http://www.cis.ethz.ch/publications/publications/2010\\_WP66\\_Stadelmann\\_Michaelowa.pdf](http://www.cis.ethz.ch/publications/publications/2010_WP66_Stadelmann_Michaelowa.pdf).

129. *Id.* at 8.

130. BREIDENICH & BODANSKY, *supra* note 38, at 16.

131. See Benito Müller, *Is There Room for Compromise? The Debate on Institutional Arrangements for Climate Finance*, OXFORD INST. FOR ENERGY STUDIES 1, 8 (Oct. 2009), [http://www.oxfordclimatepolicy.org/publications/documents/comment\\_01\\_10\\_09.pdf](http://www.oxfordclimatepolicy.org/publications/documents/comment_01_10_09.pdf); Stadelmann et al., *supra* note 128, at 2 (observing that the “new and additional” requirements are not clearly defined).

132. For example, China asks that rich nations contribute 1% of GDP to help poor countries adapt to climate change. Amy Sinden, *Allocating the Costs of the Climate Crisis: Efficiency Versus Justice*, 85 WASH. L. REV. 293, 295 & n. 1 (2010). Bolivia demands \$400 billion for fast track funding as well as MMRVed 1% of GDP of developed nations; Ghana asks for 1.5% of GDP totaling \$100 billion per year by 2020. See World Resources Institute, *supra* note 39, at 15 (noting that Bolivia has argued for fast-track funding for REDD+ to the tune of \$400 billion).

133. Stadelmann, *supra* note 128, at 3.

134. See Hunter, *supra* note 51, at 13 (explaining that a recurring issue in climate financial architecture is how to ensure that funds earmarked for climate financing are “new and additional”); Int’l Ctr. for Trade & Sustainable Dev., *Tianjin Climate Meeting Delivers Little, Overshadowed by US-China Spat*, 14 BRIDGES WEEKLY TRADE NEWS DIGEST 3, <http://ictsd.org/downloads/bridgesweekly/bridgesweekly14-35.pdf> (“Concerns persist about whether climate finance would be ‘additional’ to planned flows of development aid.”); World Resources Institute, *supra* note 39, at 17 (noting that a number of Annex I countries are “planning to repackage Overseas Development Assistance rather than provide new and additional financing required by the UNFCCC”); BREIDENICH & BODANSKY, *supra* note 38, at 16–17, 26 (noting that there is no common standard for determining what climate change-related aid constitutes “new and additional financing”); Ward, *supra* note 6, at 2 (noting that there could be a verification process to track financing for climate change).

“climate finance is additional if it leads to an increase both compared to present and projected future development assistance.”<sup>135</sup> It is difficult to track private investments, or to figure out if these should be included in developed nations’ financial pledges.<sup>136</sup> Developing nations (e.g., official submissions from India, Argentina, Bolivia, and Venezuela) request that financing not come from the capricious (and difficult to MMRV) carbon markets, but from consistent government coffers.<sup>137</sup>

### G. Biodiversity Protection and Social Development Benefits

In his analysis of the shifting ground of how political power is wielded internationally, Nikolas Rose writes that a “new ethical politics has taken shape . . . [w]hich refuses the idea that politics is a matter of state, parliament, election and party programme.”<sup>138</sup> Activists work across international borders and in multiple fora to effect specific kinds of change they desire—to preserve biodiversity, sustain indigenous peoples’ livelihoods, and/or improve poor peoples’ prospects through fairer land tenure and economic development. Voices in both North and South seek MMRV for biodiversity protection and social development benefits.

REDD+, when done right, portends large benefits to poor people living near forests, and to the forest ecosystems upon which they depend.<sup>139</sup> However, some early REDD+ projects, touted as salvation for biodiversity and the poor, nonetheless diminished biodiversity (allowing for monoculture plantations and non-native species)<sup>140</sup> or locked up forests upon which local communities depended, thus dispossessing poor people of their land or denying them their livelihoods.<sup>141</sup>

MMRV is a tool to ensure that both the livelihoods of poor people—and the biodiversity and ecosystem services that form the basis of those

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135. Stadelmann, *supra* note 128, at 4.

136. Ward, *supra* note 6, at 2 (questioning the feasibility of tracking various sources of funding).

137. See World Resources Inst., *supra* note 39, at 12–13, 16, 19 (noting that India, Argentina, Bolivia, and Venezuela prefer public over private financing).

138. NIKOLAS ROSE, POWERS OF FREEDOM: REFRAMING POLITICAL THOUGHT 2 (1999).

139. Takacs, *A Deep Equity Legal Analysis*, *supra* note 13, at 557; Takacs, *Carbon Into Gold*, *supra* note 26, at 85; TAKACS, FOREST CARBON, *supra* note 16, at 5.

140. See Nophea Sasaki & Francis E. Putz, *Critical Need for New Definitions of “Forest” and “Forest Degradation” in Global Climate Change Agreements*, 2 CONSERVATION LETTERS 226, 229 (2009) (noting one study, which found that carbon and biodiversity loss resulted when a REDD+ agreement was implemented); Wilson, *supra* note 25, at 1013.

141. Takacs, *A Deep Equity Legal Analysis*, *supra* note 13, at 556, 561 (discussing how projects may deny employment opportunities or dispossess people of land); TAKACS, FOREST CARBON, *supra* note 16, at 23, 51; Takacs, *Carbon Into Gold*, *supra* note 26, at 85; Densham et al., *supra* note 25, at ii; REDD-MONITOR, *supra* note 26; Wilson, *supra* note 25, at 1012–14.



livelihoods—are enhanced through REDD+.<sup>142</sup> Thus conservation and pro-poor groups in both the North and South call for MMRV of social and ecological safeguards for REDD+. If investors are going to appropriate (even with compensation) Southern forests, they will need to be accountable for protecting and ameliorating the livelihoods and basic rights of forest dependent communities, and for protecting and enhancing the diverse species that live in tropical forests. Northern government leaders (and pro-poor and conservation NGOs) want assurances that funds for REDD+ genuinely reduce emissions, preserve biodiversity, and alleviate poverty (and will continue to do so for the contracted duration of a project).<sup>143</sup>

So, for example, the Climate, Community & Biodiversity Alliance (CCBA) has put together “REDD+ Social & Environmental Standards” for individual REDD+ projects, albeit with an eye towards having nations or subnational entities adopt these as uniform standards for all REDD+ projects in their jurisdiction.<sup>144</sup> These standards safeguard local peoples’ rights, ensure that local peoples (especially indigenous peoples) are full and equal participants and beneficiaries in REDD+ projects, and that REDD+ projects maintain and enhance biodiversity and ecosystem services.<sup>145</sup> The Standards contain criteria and indicators that would allow results to be measured, monitored, reported, and verified. Of particular focus in the standards is a set of MMRV criteria for stakeholder participation in all phases of project management.<sup>146</sup> And CCBA and other NGOs have put together a comprehensive “Manual for Social Impact Assessment of Land-Based Carbon Projects,” resulting in “REDD+ SES (Social and Environmental Safeguards)” to guarantee community and ecological co-

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142. John Costenbader and I have each provided a full accounting of what a maximally equitable REDD+ project would comprise. See JOHN COSTENBADER, UN-REDD+ PROGRAMME, *REDD+ BENEFIT SHARING: A COMPARATIVE ASSESSMENT OF THREE NATIONAL POLICY APPROACHES* 10 (2010) (defining “equity” in the context of REDD+ programs); Takacs, *A Deep Equity Analysis*, *supra* note 13, *passim* (analyzing forest carbon projects and introducing “deep equity”).

143. See, e.g., INT’L INST. FOR ENV’T. & DEV., CARBON RIGHTEOUSNESS: HOW TO LEVER PRO-POOR BENEFITS FROM REDD+ 1 (July 2011), available at [www.iied.org/pubs/display.php?o=1709711ED](http://www.iied.org/pubs/display.php?o=1709711ED) (arguing that REDD+ projects must bestow social, economic and environmental benefit on a variety of forest-dependent peoples and communities).

144. See REDD+ SES, *supra* note 22, at 2–3 (establishing a set of standards that can be tailored to each specific country, but that can be consistently applied through an international review process). CCBA is itself a coalition of NGOs (e.g., Conservation International and CARE), international institutions (e.g., CIFOR), and business interests (e.g., Weyerhaeuser). *Id.*

145. See *id.* at 3, 8, 10; see also Takacs, *A Deep Equity Analysis*, *supra* note 13, at 536 (describing the goal of the Climate, Community & Biodiversity Alliance).

146. See NICHOLAS MOSS & RUTH NUSSBAUM, UN-REDD PROGRAMME, A REVIEW OF THREE REDD+ SAFEGUARD INITIATIVES 15–16 (2011), available at <http://www.forestcarbonasia.org/other-publications/a-review-of-three-redd-safeguard-initiatives/>.

benefits from REDD+ through naming measurable indicators and exploring how to monitor and verify that these indicators have been achieved.<sup>147</sup>

Sovereignty, as we shall see below, is likely to be a sticking point in international agreements for MMRV for social and biodiversity issues.<sup>148</sup> For Clean Development Mechanism projects under the Kyoto Protocol, a host nation's "Designated National Authority," or "DNA," approves or disapproves a given project according to sustainable development criteria designed by each nation.<sup>149</sup> As Chilean attorney Marcos Orellana puts it, the

CDM regards this determination as an expression of the sovereignty of the host State, and it does not provide for international scrutiny of it. Therefore, the CDM does not require that the DNA establish an open and participatory process when defining sustainable development criteria, or when making determinations regarding the contribution of projects to sustainability.<sup>150</sup>

In the private market, a host nation may have no oversight of social or biodiversity benefits from a project. It may simply be a financial transaction between actors (and actors of unequal bargaining power or legal acuity, at that).<sup>151</sup> Thus activists from within and outside richly forested nations are calling for more rigorous MMRV to ensure that REDD+ aid enhances biodiversity conservation and improves the livelihoods of local communities.

In their submissions to the FCPF, many nations' REDD+ Readiness Preparation Proposals (R-PPs) contemplate extensive MMRV of socioeconomic benefits and safeguards. Argentina proposes that "[s]ocio-economic monitoring will apply poverty reduction and job creation indicators . . . . The Argentine Labour and Environment Program is in process to develop indicators related to climate change and labour."<sup>152</sup> The

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147. See MICHAEL RICHARDS & STEVE PANFIL, MANUAL FOR SOCIAL IMPACT ASSESSMENT OF LAND-BASED CARBON PROJECTS: PART I – CORE GUIDANCE FOR PROJECT PROPONENTS 4–5 (2010), available at [http://www.climate-standards.org/docs/assessment/Social\\_Impact\\_Assessment\\_for\\_Land-based\\_Carbon\\_Projects\\_Part\\_I.pdf](http://www.climate-standards.org/docs/assessment/Social_Impact_Assessment_for_Land-based_Carbon_Projects_Part_I.pdf) (explaining social impacts).

148. REDDNET, MONITORING, REPORTING AND SOCIAL AND DEVELOPMENT ISSUES 2 (2010), available at <http://redd-net.org/files/MMRV%20of%20social%20development.pdf>.

149. Wilson, *supra* note 25, at 1020–21 (exploring how international law can overcome the impediments of sovereignty to allow for "victims" of REDD+ and other offsets to pursue remedies).

150. MARCOS ORELLANA, CTR. FOR INT'L ENVTL. LAW, *Change and the Right to Development: International Cooperation, Financial Arrangements, and the Clean Development Mechanism* 24 (2010), <http://www2.ohchr.org/english/issues/development/right/docs/A-HRC-15-WG-2-TF-CRP-3-Rev1.pdf>.

151. Takacs, *Carbon Into Gold*, *supra* note 26, at 86.

152. ARGENTINA R-PP, *supra* note 105, at 72.

Central African Republic plans development criteria and indicators to include “infrastructure, demographics, level of employment, type of employment, employment of indigenous peoples, local average income,” and human rights indicators to include “[g]ender issues, security measures, [and] labor policy for REDD+ projects.”<sup>153</sup>

Similarly, the R-PPs propose extensive MMRV for biodiversity co-benefits. So, for example, Colombia plans to monitor and report REDD programs’ impacts on:

Number of extinct, endangered, threatened, vulnerable and endemic species per group[;] Absolute and relative abundance, density, basal area and coverage of various species[;] Changes in the period of absolute and relative abundances of species[;] Species richness[;] Species used by local communities[;] Population parameters of

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153. CENTRAL AFRICAN REPUBLIC R-PP, *supra* note 105, at 4; *see also* BURKINA FASO, READINESS PREPARATION PROPOSAL 118 (2012) [hereinafter BURKINA FASO R-PP], *available at* <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/June%202012/R-PP%20Burkina%20English-%20FINAL%20June%202012.pdf>; REPUBLIC OF COLOMBIA, READINESS PREPARATION PROPOSAL 140–144 (2011) [hereinafter COLOMBIA R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct%202011/Colombia\\_R-PP\\_Revised-%20English-%20September%2029%2C%202011.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct%202011/Colombia_R-PP_Revised-%20English-%20September%2029%2C%202011.pdf); CAMBORDIA R-PP, *supra* note 105, at 92–93; GOV’T OF COSTA RICA, READINESS PREPARATION PROPOSAL 89 (2010) [hereinafter COSTA RICA R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Sep2010/R-PP\\_Costa\\_Rica\\_English\\_08-19-10.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Sep2010/R-PP_Costa_Rica_English_08-19-10.pdf); ETHIOPIA R-PP, *supra* note 105, at 141–42; REPUBLIC OF GHANA, READINESS PREPARATION PROPOSAL 70 (2010) [hereinafter GHANA R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Jan2011/Revised\\_Ghana\\_R-PP\\_2\\_Dec-2010.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Jan2011/Revised_Ghana_R-PP_2_Dec-2010.pdf); GUATEMALA R-PP, *supra* note 105, at 104; GOV’T OF KENYA, READINESS PREPARATION PROPOSAL 73–74 (2010) [hereinafter KENYA R-PP], *available at* <http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct2010/Revised%20RPP%20for%20Kenya.pdf>; LAOS R-PP, *supra* note 104, at 60–61, 101; REPUBLIC OF LIBERIA, READINESS PREPARATION PROPOSAL 134–37 (2012) [hereinafter LIBERIA R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Apr2012/Liberia%20R%20PP\\_revised\\_April%202012.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Apr2012/Liberia%20R%20PP_revised_April%202012.pdf); MADAGASCAR R-PP, *supra* note 105, at 84; GOV’T OF MOZAMBIQUE, READINESS PREPARATION PROPOSAL 136–37, 147–49 (2012) [hereinafter MOZAMBIQUE R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar%202012/Mozambique\\_RPP\\_March07\\_2012rev2-FINAL.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Mar%202012/Mozambique_RPP_March07_2012rev2-FINAL.pdf); GOV’T OF NEPAL, NEPAL’S READINESS PREPARATION PROPOSAL REDD 2010-2013 6 (2010) [hereinafter NEPAL R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct%202010/R-PP\\_Nepal\\_revised\\_October.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Oct%202010/R-PP_Nepal_revised_October.pdf); GOV’T OF PANAMA, READINESS PREPARATION PROPOSAL 10–11 (2009) [hereinafter PANAMA R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Feb2010/Panama\\_R-Plan\\_rev\\_05-16-09\\_with\\_disclaimer.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Feb2010/Panama_R-Plan_rev_05-16-09_with_disclaimer.pdf); PERU R-PP, *supra* note 105, at 129–30; TANZANIA R-PP, *supra* note 105, at 58; UGANDA R-PP, *supra* note 105, at 134, 143; SOCIALIST REPUBLIC OF VIETNAM, READINESS PREPARATION PROPOSAL 84 (2011) [hereinafter VIETNAM R-PP], *available at* [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Nov2011/Viet%20Nam%20R-PP\\_Revised%2018%20November2011.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Nov2011/Viet%20Nam%20R-PP_Revised%2018%20November2011.pdf).

functional or indicator species[;] Changes in species composition over time[;] Number and abundance of invasive species[;] Area, length, and number of biological corridors[; and] Relationship between forest cover and flood frequency.<sup>154</sup>

If realized, this degree of external scrutiny has no parallel in international environmental law. For example, the Convention on Biological Diversity (CBD) has some MMRV requirements, but they pale in comparison to REDD+ proposals. In the CBD, parties are required to identify components of biological diversity important for conservation and sustainable use, and monitor these components, particularly those that are threatened; it doesn't stipulate how rigorously this occurs.<sup>155</sup> Article 21 leaves it to the Conference of parties to determine how funding will be monitored, and tasks the CoP to "review the effectiveness" of the funding mechanism "on a regular basis."<sup>156</sup> Parties are to report activities likely to affect biological diversity beyond the country's control (Article 14d), and report to the CBD measures they are taking to implement the Convention. (Article 26).<sup>157</sup> This has not been particularly effective, as "the ability of the Conference of the Parties to fulfill this [reviewing] role has been hampered by the lack of adequate information received from Parties on measures taken to implement the provisions of the Convention and their effectiveness."<sup>158</sup> Current guidelines, for reports due in 2014, ask for updates on biodiversity status, action plans, and progress towards achieving goals, but offer little more than qualitative requests to "describe" or "analyse."<sup>159</sup> Virtually no verification of party monitoring or reporting takes place. Thus, current

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154. COLOMBIA R-PP, *supra* note 153, at 141. Colombia also proposes extensive Environmental Monitoring of other variables. *See id.* at 141–44; *see also* ARGENTINA R-PP, *supra* note 152, at 71–72; COSTA RICA R-PP, *supra* note 153, at 89; DRC R-PP, *supra* note 105, at 114; ETHIOPIA R-PP, *supra* note 105, at 140; GHANA R-PP, *supra* note 153, at 71, 98; KENYA R-PP, *supra* note 153, at 74–75; LIBERIA R-PP, *supra* note 153, at 134; MADAGASCAR R-PP, *supra* note 105, at 84; , *supra* note 153, at 136–37, 149; PANAMA R-PP, *supra* note 153, at 36; PERU R-PP, *supra* note 105, at 102, 129–30; TANZANIA R-PP, *supra* note 105, at 58; UGANDA R-PP, *supra* note 105, at 134, 143; VIETNAM R-PP, *supra* note 153, at 84–87.

155. Convention on Biological Diversity art. 7, June 5, 1992, 1760 U.N.T.S. 79 (entered into force Dec. 29, 1993)

156. *Id.* art. 21.

157. *Id.* art. 14(d), 26.

158. Exec. Sec'y of the Convention on Biological Diversity, *Reporting Mechanisms Under the Convention and Other Conventions*, at 1, U.N. Doc. UNEP/CBD/WG-R1/1/10 (July 27, 2005).

159. CONVENTION ON BIOLOGICAL DIVERSITY, GUIDELINES FOR THE FIFTH NATIONAL REPORT, available at <http://www.cbd.int/doc/nr/nr-05/NR5-guidelines-en.pdf> (fifth national report due to CBD by Mar. 31, 2014).

biodiversity and social impact monitoring for REDD+, if implemented, would take MMRV in Multinational Agreements to a new level.

Why is REDD+ MMRV regime different? It is different because so many different interests are reciprocally seeking verification of so many different things. While surveillance regimes have long existed in arms control, these are limited to a few nations under the auspices of official national inspectors, and the United Nations. The World Bank has long placed conditionalities on its loans to developing nations, with monitoring strings attached to ensure the recipient is doing as it pledges. Similarly, the Global Environmental Facility attaches MMRV-like conditions to its loans to developing nations. But, especially in these latter two cases, we have monolithic organizations, largely controlled by the North, dictating the terms of engagement to disempowered Southern nations.

Forests—especially now, in the age of carbon desperation—are giving way to a different, more comprehensive, more multivocal, more complex, and more equal surveillance regime. A dizzying array of actors—national and subnational leaders, NGOs, industries, private citizens in North and South—are proposing and negotiating the MMRV regime for REDD+, seeking to be part of the experts and benefactors who will control the REDD+ regime and thus benefit from the diverse values diverse stakeholders find in the South’s cherished forests.

## II. THE CURRENT STATUS OF REDD+ MMRV

### A. Copenhagen, 2009

From CoP meetings in Bali (December 2007) to Copenhagen (December 2009), negotiators squabbled over what to measure, how to measure it, and who should have what measured, and by whom. The Copenhagen Accord—a non-binding political (as opposed to legally binding) agreement—calls for “rigorous, robust and transparent” MMRV of developed nations’ emissions reductions as well as MMRV of these nations’ financial pledges to developed nations.<sup>160</sup>

In the Copenhagen Accord, the developed world committed to naming their own enhanced GHG reductions, and agreed that “[d]elivery of reductions and financing . . . will be measured, reported and verified in accordance with existing and any further guidelines adopted by the Conference of the Parties, and will ensure that accounting of such targets and finance is rigorous, robust and transparent.”<sup>161</sup> Currently, under the

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160. Copenhagen Accord, *supra* note 15, ¶ 4.

161. *Id.* ¶ 4.

UNFCCC, developed nations submit National Communications where they are required to report their actual GHG emissions yearly, and emissions reduction actions every four to six years.<sup>162</sup>

What the developing world would do to mitigate GHG reductions, if anything, was significantly more contentious. Eventually, developing nations committed to report on their GHG “nationally appropriate mitigation actions” via National Communications every two years, subject to some form of “international consultations and analysis”—code for MMRV.<sup>163</sup> The compromise MMRV regime for these NAMAs calls for some form of external MMRV for NAMAs supported by international aid. Self-supported NAMAs (i.e. not funded by the North) would be reported biennially in national communications, subject to “international consultations and analysis,” or ICA. ICA modalities remained to be worked out, but the Accord assured “clearly defined guidelines that will ensure that national sovereignty is respected.”<sup>164</sup> This is the first time developing nations agreed to international MMRV for their climate change mitigation and adaptation actions.<sup>165</sup> I will discuss below what this means for “national sovereignty.”

Furthermore, as discussed above, the developed countries pledge to increase funding to \$100 billion per year by 2020 from various sources, but place that aid “[i]n the context of meaningful mitigation actions and transparency on implementation . . . .”<sup>166</sup> Here, this “transparency” is code for a suite of MMRV-able governance reforms to ensure that Northern aid is fairly and efficaciously spent.

Unlike the Kyoto Protocol, the Copenhagen Accord includes REDD+ as a fundamental element, and calls for “the immediate establishment of a mechanism including REDD-plus, to enable the mobilization of financial resources from developed countries.”<sup>167</sup>

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162. SCHMIDT, *supra* note 9, at 2.

163. Copenhagen Accord, *supra* note 15, ¶ 5.

164. *Id.* ¶ 5.

165. Bodansky, *supra* note 45, at 240. *See also* President Barack Obama, Remarks by the President During Press Availability in Copenhagen (Dec. 18, 2009), *available at* <http://www.whitehouse.gov/the-press-office/remarks-president-during-press-availability-copenhagen> (“The challenge here was that for a lot of countries, particularly those emerging countries that are still in different stages of development, this is going to be the first time in which even voluntarily they offered up mitigation targets.”) President Obama added, “I think that it was important to essentially get that shift in orientation moving, that’s what I think will end up being most significant about this accord.” *Id.*

166. Copenhagen Accord, *supra* note 15, ¶ 8.

167. *Id.* ¶ 6.

*B. Cancun, 2010*

Despite doom and gloom skepticism heading into the Cancun CoP, negotiators built on the three-page Copenhagen Accord by turning out a detailed, thirty-page, near unanimous agreement that filled in significant details.<sup>168</sup> The Cancun Agreement reaffirms the Copenhagen Accord's decision for the developed world to provide US\$30 billion in "fast track" aid between 2010 and 2012, and \$100 billion per year by 2020, to be channeled through a "Green Climate Fund." While these provisions are not yet legally binding, they set the stage for a potentially legally binding treaty.

Developed countries would improve their MMRV of emissions reductions, as well as financial support to developing nations. The Agreement calls for "enhance[d] guidelines for the review of information in national communications," particularly in "[p]rogress made in achieving emission reductions" and "[p]rovision of financial, technology and capacity-building support to developing country Parties."<sup>169</sup> In other words, the South received concessions that Northern nations would be subject to stricter oversight to ensure that they lived up to their promises to actually reduce GHG emissions and to actually deliver new, additional aid that they pledge.

On the other hand, the Cancun Agreement expands developing countries' MMRV requirements. First, the agreement gingerly approaches MMRV for the biennial reports and National Communications that Southern nations will be required to submit. The Conference of the Parties:

*Decides* to conduct a process for international consultations and analysis of biennial reports in the Subsidiary Body on Implementation, in a manner that is non-intrusive, non-punitive and respectful of national sovereignty; the international consultations and analysis aim to increase transparency of mitigation actions and their effects, through analysis by technical experts in consultation with the Party

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168. Richard Black, *Cancun: The Chihuahua That Roared*, B.B.C. NEWS (Dec. 11, 2010, 11:29 AM), [http://www.bbc.co.uk/blogs/thereporters/richardblack/2010/12/cancun\\_the\\_chihuahua\\_that\\_roar.html](http://www.bbc.co.uk/blogs/thereporters/richardblack/2010/12/cancun_the_chihuahua_that_roar.html). Only Bolivia's President Evo Morales objected, and meeting chair (Mexican Secretary for Foreign Affairs) Patricia Espinosa Figueroa noted that and moved right along. Louise Gray, *Cancun Climate Change Summit: Bolivians Dance to a Different Beat, But Fail to Derail the Talks*, THE TELEGRAPH (Dec. 12, 2010, 4:36 PM), <http://www.telegraph.co.uk/earth/environment/climatechange/8197539/Cancun-climate-change-summit-Bolivians-dance-to-a-different-beat-but-fail-to-derail-the-talks.html>.

169. Cancun Agreements, *supra* note 28, ¶¶ 40, 42.

concerned, and through a facilitative sharing of views, and will result in a summary report.<sup>170</sup>

In addition to these biennial updates, developing nations will be required to submit full National Communications every four years, according to guidelines yet to be developed. These will be subject to “international consultation and analysis” (ICA), including a “facilitative sharing of views”—a gentle MMRV regime, but an MMRV regime nonetheless.<sup>171</sup>

The Agreement builds on the NAMAs first named in the Copenhagen Accord, with the provisos that these NAMAs depend on financial and technology contributions from the North and that sustainable development is the first priority of the South.<sup>172</sup> The Agreement sets up a registry for the South to ask for funds to support NAMAs.<sup>173</sup> Most importantly for our purposes, the Agreement sets up a two-track system for MMRV for developing country NAMAs. First, “internationally supported mitigation actions will be measured, reported and verified domestically and will be subject to international measurement, reporting and verification in accordance with guidelines to be developed under the Convention.”<sup>174</sup> Self-funded NAMAs, however, will face domestic MMRV requirements according to guidelines to be developed.<sup>175</sup>

The Cancun Agreement emphasizes the importance of including REDD+ in future binding agreements, and requests “[a] robust and transparent national forest monitoring system for the monitoring and reporting of” REDD+ activities.<sup>176</sup> And, importantly, the Agreement requests a “system for providing information on how the safeguards referred to in appendix I to this decision are being addressed and respected throughout the implementation of [REDD+], while respecting sovereignty.”<sup>177</sup> Annex I specifies that REDD+ must include “safeguards” that protect natural forests and functioning ecosystems, enhance sustainable development and poverty reduction, enhance forest government “taking into account national legislation and sovereignty,” and respect knowledge and rights of local communities and indigenous peoples, including full

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170. *Id.* ¶ 63.

171. *Id.*

172. *See id.* pt. III(B) pmb1., ¶ 52.

173. *Id.* ¶¶ 53–59.

174. *Id.* ¶ 61.

175. *Id.* ¶ 62.

176. *Id.* ¶ 71(c).

177. *Id.* ¶ 71(d).



participation rights.<sup>178</sup> While the Agreement discusses the goal of positive “economic and social consequences of response measures,”<sup>179</sup> it doesn’t discuss MMRV of these consequences, except in the context of REDD+. Furthermore, even in the context of REDD+, the Agreement calls only for a “system for providing information on how the safeguards . . . are being addressed and respected throughout the implementation of the activities . . . while respecting sovereignty.”<sup>180</sup> Thus, there are no specifics yet for MMRV, and the “while respecting sovereignty” language suggests opposition from developing nations to intrusive MMRV.<sup>181</sup>

### C. Durban, 2011

The CoP in Durban in December 2011 largely kicked the can down the road, aiming for “an agreed outcome with legal force” in 2015 to go into effect by 2020.<sup>182</sup> Daniel Bodansky describes it as “an empty vessel that can be filled with whatever content the parties choose.”<sup>183</sup>

REDD+ did advance in Durban. Although the exact financing and precise safeguards (with MMRV for both) remain to be negotiated, the final documents require that countries receiving “results-based finance” to implement REDD+ engage in actions that are “fully measured, reported and verified.”<sup>184</sup> The committees settled on a REDD+ measuring and reporting system to be measured in more easily verifiable carbon emissions (as opposed to hectares). The report did not conclude how the actual verification would work.

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178. *Id.* app. 1 at ¶ 2(b).

179. *Id.* pt. III(E).

180. *Id.* ¶ 71(d).

181. KATE DOOLEY, FERN, FOREST WATCH SPECIAL REPORT—UNFCCC CLIMATE TALKS, CANCUN, DECEMBER 2010 (2011), available at <http://www.fern.org/sites/fern.org/files/Cancun%20update.pdf> (suggesting that Brazil, Papua New Guinea, Malaysia, and Costa Rica weakened MMRV language here).

182. CoP to the UNFCCC Dec. 1/CP.17, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action, 17th Sess., Nov. 28–Dec. 11, 2011, U.N. Doc. FCCC/CP/2011/9/Add. 1, ¶ 2 (Dec. 11, 2011).

183. Daniel Bodansky, *The Durban Platform Negotiations: Goals and Options*, HARVARD PROJECT ON CLIMATE AGREEMENTS, at 3 (July 10, 2012), [http://papers.ssrn.com/sol3/Delivery.cfm/SSRN\\_ID2109588\\_code366811.pdf?abstractid=2102994&mirid=5](http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2109588_code366811.pdf?abstractid=2102994&mirid=5).

184. UNFCCC Dec. 2/CP.17, *supra* note 11, at 15; Cancun Agreements, *supra* note 29, ¶ 73. *But see* Leony Aurora, *REDD+ Draft Texts Postpone Financing Decision to 2012, Water Down Safeguards*, *FORESTS NEWS* (Dec. 4, 2011), <http://blog.cifor.org/5655/redd-draft-texts-postpone-financing-decision-to-2012-water-down-safeguards/> (noting that, in Durban, there were “very weak” MMRV safeguards, requiring countries only to submit “qualitative information on how safeguards were implemented”).

Beyond REDD+, the Durban Platform requires that developing nations must submit annual GHG inventories, and biennial reports on progress towards achieving their NAMAs.<sup>185</sup> The Platform requests further MMRV development for developing nation NAMAs<sup>186</sup> that is “non-intrusive, non-punitive and respectful of national sovereignty.”<sup>187</sup> The agreements also reaffirmed commitments for Northern nation donations to the Green Climate Fund, including donations that would specifically support REDD+.<sup>188</sup>

The legal details of MMRV will not be colored in before the current Kyoto Protocol—and concomitant GHG reducing commitment period—expires in 2012.<sup>189</sup> But the system of MMRV: a) will be a portion of any successor to the Kyoto Protocol, should one occur; b) may well be a model for REDD+ and other components of regional or bilateral climate change deals; c) pose a model for voluntary market REDD+ deals; and d) present a way forward for any parties looking to realize the synergistic effects of REDD+ (or any other climate change solutions) while clamoring over the berm of mistrust that has come to characterize international environmental law in the climate change era.

#### D. Doha, 2012

The underwhelming “Doha Climate Gateway” commits many nations (Canada, Russia, Japan, and New Zealand opted out; some nations took on new commitments) to extend the Kyoto Protocol until 2020.<sup>190</sup> No decisions about REDD+ were made in Doha, with negotiations foundering over MMRV. In particular, objections by Brazil and Norway concerned the

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185. UNFCCC Dec. 2/CP.17, *supra* note 11, at 40; Cancun Agreements, *supra* note 28, ¶ 60(c).

186. *Id.* ¶ 63.

187. *Id.*

188. See Jake Schmidt, *Important Progress at Global Warming Negotiations in Durban; Major Work Ahead*, NATURAL RES. DEF. COUNCIL (Dec. 11, 2011), [http://switchboard.nrdc.org/blogs/jschmidt/important\\_progress\\_at\\_global\\_w.html](http://switchboard.nrdc.org/blogs/jschmidt/important_progress_at_global_w.html) (describing the launch of the Green Climate Fund); see also Cancun Agreements, *supra* note 28, ¶¶ 100, 102 (establishing the Green Climate Fund).

189. See Antonio G.M. La Vina et al., Found. for Int’l Law & Dev., *The UNFCCC After Durban: Recognizing Limitations and Calling for a Multi-Track Approach to Climate Multilateralism and Action 4*, 10 (May 2012), available at [http://www.field.org.uk/files/unfccc\\_after\\_durban\\_lavina\\_may\\_2012.pdf](http://www.field.org.uk/files/unfccc_after_durban_lavina_may_2012.pdf) (noting that the details surrounding a market-based approach to REDD under the UNFCCC are still being ironed out, but that policy makers are striving to mobilize private finance for REDD programs in the future).

190. See JESSICA BOYLE, INT’L INST. FOR SUSTAINABLE DEV., *A MIRAGE IN THE DESERTS OF DOHA? ASSESSING THE OUTCOMES OF COP 18* at 2–3 (2012), available at [http://www.iisd.org/pdf/2012/com\\_mirage\\_desert\\_doha\\_cop18.pdf](http://www.iisd.org/pdf/2012/com_mirage_desert_doha_cop18.pdf) (noting that Canada, Russia, New Zealand, and Japan will not participate in the “Doha Climate Gateway”).

verification of emission reductions from forests cover.<sup>191</sup> Norway was requesting that future REDD+ aid be tied to independent, international, “results-based” verification; Brazil and other Southern nations wanted no such verification commitments.<sup>192</sup> As international multilateral negotiations continue under the UN’s auspices, the future of REDD+ will continue to focus on MMRV.

### III. MMRV FOR REDD+, COOPERATIVE SOVEREIGNTY, AND REALIGNMENTS IN INTERNATIONAL ENVIRONMENTAL LAW

Taking action to mitigate GHG buildup and help communities adapt to global climate change—while simultaneously reducing poverty, and staunching deforestation—will take an unprecedented degree of cooperation among nations; between nations and emerging, diverse non-state actors; and among those actors themselves. The urgent need to cooperate occurs at a time of marked mistrust not only between nations, but between these nations and diverse interest groups staking their claims to power. The current debates around MMRV for REDD+, and the resolutions emerging from these debates, present a possible roadmap for how international law is changing and must change if we are to confront the harsh realities that climate change holds for current and future generations of humans and nonhumans. Disparate actors promoting MMRV for REDD+ are negotiating a new model of reciprocal, cooperative, mutually beneficial, contractual sovereignty. This model not only can help realize the synergistic effects of REDD+, but provides a roadmap for cooperation towards equitable resolutions to other pressing international problems.

As more actors come to cherish forests for more reasons, those who possess them—disproportionately, communities and nations in the global South—acquire more power, more leverage, and more bargaining chips in international relations. Forests help bring “sovereign equality” among nations closer to reality, as Southern nations put their forests up for bids to fulfill their “common but differentiated responsibilities,” and gain cash, clout, and ecological resilience in the process. As forests increasingly

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191. Chris Lang, *REDD at COP18, Doha: At A Crossroads or Stuck in Neoliberalism’s Dead End?*, REDD-MONITOR (Dec. 14, 2012), [http://www.redd-monitor.org/2012/12/14/redd-at-cop18-doha-at-a-crossroads-or-stuck-in-neoliberalisms-dead-end/?utm\\_source=feedburner&utm\\_medium=email&utm\\_campaign=Feed%3A+Redd-monitor+%28REDD-Monitor%29](http://www.redd-monitor.org/2012/12/14/redd-at-cop18-doha-at-a-crossroads-or-stuck-in-neoliberalisms-dead-end/?utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+Redd-monitor+%28REDD-Monitor%29).

192. *REDD+ Negotiations in Doha at Impasse, Potentially Delaying Decisions on Safeguards Another Year*, MONGA BAY (Dec. 3, 2012), <http://news.mongabay.com/2012/1203-redd-doha-update.html>; Steve Zwick, *REDD+ Sidelined in Dispute Over Verification*, ECOSYSTEM MARKETPLACE (Dec. 2, 2012), [http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page\\_id=9466&section=news\\_articles&eod=1](http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=9466&section=news_articles&eod=1).

become a contested negotiating site for who has what sovereign rights to control the Earth's ecological systems, mutual insistence on reciprocal, *quid pro quo* MMRV for REDD+ provides a paradigmatic example for how "sovereignty" is being reconstructed to forge contractual cooperation among nations and between nations and emerging powerful actors.

A. *A Very Brief Introduction to "Sovereignty"*

"Sovereignty" is the "most fundamental principle"<sup>193</sup> and "the cornerstone of international law."<sup>194</sup> Despite its centrality, what comprises "sovereignty" remains contentious and unfocused. Different scholars define it in different ways and different nations assert its meanings in different ways, depending upon context and goals.<sup>195</sup>

Franz Perrez calls it "one of the most often used, defended, and contested terms of international law,"<sup>196</sup> and thus the various definitions of sovereignty are worth parsing, particularly when such parsing can lead to a more just world and a more sustainable system of interrelationships among nations, and between national leaders and their own citizens. Sovereignty, like other legal memes, evolves—but not in a blind way. It evolves as human actors and human needs push it to evolve. In the instant case, it evolves as the natural world's demands require us to rethink how our most cherished or even ossified legal institutions function, and what work they do, and should do, for us.

Teasing out what sovereignty means in the global climate change era—and how a reciprocal MMRV scheme for REDD+ may hold a key to understanding—is important in three ways.

*Practically*, the parameters of an MMRV regime are one of the major stumbling blocks in negotiations over cooperation to succeed the Kyoto Protocol, and are now obligatory for any REDD+ regime. The South, complaining that the North violates its sovereignty through environmental destruction from GHG pollution, similarly resists further sovereignty violations that would accrue when MMRV is the price to pay for REDD+ funding.<sup>197</sup> The North argues that the South's forests are crucial to climate

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193. French, *supra* note 12, at 377.

194. Royal C. Gardner, *Taking the Principle of Just Compensation Abroad: Private Property Rights, National Sovereignty, and the Cost of Environmental Protection*, 65 U. CIN. L. REV. 539, 540 (1997).

195. See, e.g., FRANZ XAVER PERREZ, COOPERATIVE SOVEREIGNTY: FROM INDEPENDENCE TO INTERDEPENDENCE IN THE STRUCTURE OF INTERNATIONAL ENVIRONMENTAL LAW 14–15 (2000) (comparing different definitions of sovereignty).

196. *Id.* at 1.

197. See HARALD WINKLER ET AL., BASIC EXPERTS, EQUITABLE ACCESS TO SUSTAINABLE DEVELOPMENT: CONTRIBUTION TO THE BODY OF SCIENTIFIC KNOWLEDGE 7 (2011), available at

change mitigation and biodiversity conservation, both actions and values whose importance transcend national boundaries.<sup>198</sup> Finding an MMRV system that transforms competing priorities into cooperative goals means multiple (possibly enormous) benefits to North and South, and to human and nonhuman communities alike.

*Legally*, if the meaning of sovereignty is evolving—if it can be violated at will by the actions of the North, if it can be sold to the highest bidder and divided into quanta, if non-State actors are gaining control of forests through cross-boundary REDD+ deals, how do we understand sovereignty?<sup>199</sup> Can a nation auction off enough of its sovereignty, or lose enough through GHG pollution, so that it has nothing left? Do we need a new vision of what this concept means to contend with pressing, transnational environmental problems? I contend that an equitable, reciprocal MMRV system helps remake sovereignty (for the better) for the global climate change era.

*Ethically*, global climate change portends drastic changes in ecological conditions that will be predominantly borne by the poorest of the poor in the global South, whose citizens have done little to create the catastrophe.<sup>200</sup> As their sovereign rights to ecological sustenance are violated and leaders' sovereign responsibility to care for their peoples' needs is impaired, can we derive a new idea of sovereignty that accounts for ecological destruction where some entities pay to maintain the sovereignty of others? Furthermore, global climate change threatens individuals and ecosystems everywhere: Where survival on an interdependent, ecologically connected planet is at stake, ensuring that sovereignty and arguments on its behalf do not hinder, and in fact facilitate, global cooperation to ward off ecological disaster, is a crucial project for international environmental law.<sup>201</sup>

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[http://www.erc.uct.ac.za/Basic\\_Experts\\_Paper.pdf](http://www.erc.uct.ac.za/Basic_Experts_Paper.pdf) (explaining the inequality of GHG pollution between the North and the South); Gardner, *supra* note 194, at 590 (noting that a state may be unwilling to accept conditional aid because “such aid is an affront to its sovereignty”).

198. See Thilo Marauhn, *Changing Role of the State*, in THE OXFORD HANDBOOK OF INTERNATIONAL LAW 728, 730 (Bodansky et al. eds., 2007) (noting that the environment and natural resources “do not necessarily conform to the territorial boundaries agreed upon between sovereign states”).

199. See Tyler Welti, *Market Sovereignty: Managing the Commodity of Sovereign Rights*, 21 GEO. INT'L ENVTL. L. REV. 337, 343 (2009) (describing changes in how the modern world understands state sovereignty).

200. See Burkett, *supra* note 5, at 513–14; WINKLER, *supra* note 197, at 4.

201. See, e.g., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT 62 (2007), available at [http://www.ipcc.ch/publications\\_and\\_data/publications\\_ipcc\\_fourth\\_assessment\\_report\\_synthesis\\_report.htm](http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm) (noting that there is a great deal of agreement that international and regional cooperation have been effective in addressing climate change, and that the international community should continue with such cooperative efforts); Joe Romm, *New Study of Greenland Under “More Realistic Forcings” Concludes “Collapse of the Ice-Sheet Was Found to Occur Between 400 and 560 PPM” of CO<sub>2</sub>*, THINKPROGRESS (Mar. 23, 2010, 6:01 PM),

As greenhouse gas pollution creates ever-greater threats to human communities and ecological integrity, and as forests and their multiple benefits diminish, the MMRV regimes proposed for REDD+ climate change mitigation and adaptation show how treaty negotiators, political leaders, and social and environmental activists are (wittingly or not) constructing a new version of sovereignty that is more cooperative, more reciprocal, more equitable, and more likely to result in outcomes that preserve rather than impinge upon sovereignty.

*B. Sovereignty as Social Construct*

Biersteker and Weber declare that sovereignty is “an ambiguous concept. Attention to sovereignty tends to raise more questions about international relations than it answers.”<sup>202</sup> What an entity says in the name of sovereignty may say more about them than it does about the precise legal parameters of the term. As leaders, scholars, and jurists make claims about sovereignty, they are, in fact, making sovereignty, nudging its precise legal boundaries in one direction or another.

While various parties may attempt to impose their own definitions on sovereignty, “[d]isputes over fundamentally contested concepts cannot be brought to closure by means of a definition.”<sup>203</sup> Sovereignty has been and continues to be socially constructed.<sup>204</sup> Sovereignty has:

evolved through negotiations over the centuries . . . . [It is] a historical relative notion, variable in time and responding to new situations and exigencies . . . . [Sovereignty is] dynamic and variable . . . [and should be] examined in relation with . . . the needs and requirements of its time.<sup>205</sup>

According to Biersteker and Weber, “[t]he modern state system is not based on some timeless principle of sovereignty, but on the production of a normative conception that links authority, territory, population (society, nation), and recognition in a unique way and in a particular place (the state).”<sup>206</sup> Sovereignty has no timeless feature, but is continually being

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<http://thinkprogress.org/romm/2010/03/23/205696/greenland-ice-sheet-collapse-global-warming-science/> (warning of possible climate change impacts).

202. Thomas J. Biersteker & Cynthia Weber, *The Social Construction of State Sovereignty*, in STATE SOVEREIGNTY AS SOCIAL CONSTRUCT 2 (Thomas J. Biersteker & Cynthia Weber eds., 1996).

203. *Id.*

204. *Id.* at 3.

205. PERREZ, *supra* note 195, at 245.

206. Biersteker & Weber, *supra* note 202, at 3.

negotiated and renegotiated, with various actors pushing those negotiations according to changing social needs.<sup>207</sup>

International environmental law in general, and the physical realities of climate change and deforestation in particular, exert additional pressure in “sovereignty” negotiations. Those exigencies are exigent because ecological systems do not bow before human institutional constructions; law must eventually bend to the demands of the natural world, or the natural world will eventually render that law (and the humans who composed it) obsolete. Global climate change is exerting a kind of natural selection that world leaders and legal scholars might prefer to ignore, but cannot: Change the law (and enforce it), or many people will suffer, and (not coincidentally) many species will go extinct.

Actors constructing an MMRV regime show this negotiation in action. They are constructing sovereignty. They are, consciously or not, remaking the bounds of what sovereignty means in an era when nations of the world must cooperate or face unprecedented pollution, unprecedented cost to mitigate that pollution, or worse.

Not all legal scholars are enamored of the concept of sovereignty. Louis Henkin, for example, exhorted the legal world to “extirpate the term . . . and forbid its uses in polite political or intellectual company or in international law.”<sup>208</sup> My goal here, however, is not to extirpate the term: That’s a quixotic task. Rather, I wish to trace how it is being molded—and participate in that molding—so that sovereignty better reflects current and future ecological and geopolitical realities.

Perrez urges a “functional analysis” to investigate whether a particular understanding of sovereignty is “functional,”—that is, “whether it serves and promotes the goals and purposes to which sovereignty pertains.”<sup>209</sup> In his book *Cooperative Sovereignty*, Perrez asserts that international cooperation is not only normatively desirable, but it is the cornerstone of the only rational legal understanding of “sovereignty,” particularly when environmental threats know no national boundaries and can only be rationally countered through interdependent cooperation.<sup>210</sup>

While Perrez urges a rational or self-interested approach to finding purpose in international law, I am looking for something that combines self-

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207. *Id.* at 11, 18.

208. Louis Henkin, *Notes from the President*, AM. SOC’Y OF INT’L LAW NEWSLETTER, Mar. 1993.

209. PERREZ, *supra* note 195, at 177.

210. *Id.* at 241–42; *see also* Frank Biermann & Klaus Dingwerth, *Global Environmental Change and the Nation State*, 4 GLOBAL ENVTL. POL. 1, 4–5 (2004) (noting that a state’s environmental quality depends not only on its actions, but the actions of its neighbors as well; therefore, international cooperation is essential to resolving transboundary environmental problems).

interested proclamations with a normative approach. How nations *do* shape sovereignty to serve their own ends should not be divorced from how nations and individual actors within those nations *should* shape sovereignty—not merely to advance their own self interests, but to act on behalf of neighboring nations and their citizens; distant nations and their citizens; future generations; and the oft-forgotten non-human individuals, species, ecosystem processes, and the perpetuation of the ongoing pageant of evolution. I have written before about “deep equity”—laws and policies that simultaneously and synergistically promote the health and potential of individuals, communities, and ecosystems.<sup>211</sup> That, I believe, is an interlocking system of normative goals to which a functional construction of “sovereignty” should aim. Furthermore, I believe that negotiations over MMRV for REDD+ do, in fact, aim towards these interlocking goals.

To put it another way, survival of the planet’s life systems, and the life systems of numerous local communities, is at stake. If we are looking to construct and buttress a definition of sovereignty and looking for a goal that definition would serve, survival of the human species and the millions of species with which we share the planet seems like a reasonable target. And the only way we can get there is through an understanding of “sovereignty” that foregrounds cooperation. MMRV for REDD+ symbolizes that cooperation. But it’s not altruistic cooperation: It’s tit for tat, everyone-wins cooperation that shows us a way forward for other pressing international issues that do not recognize or respect national borders.

Herein I trace how actors in the REDD+ MMRV debate are nudging the construction of sovereignty in a particular, cooperative, and reciprocal direction, and I assist in nudging the construction of sovereignty in that direction. MMRV negotiations are about righting the balance between independence and interdependence, isolation and cooperation. Debates over MMRV are debates over sovereignty, whether or not they’re framed in those terms. They are debates between Northern nations with traditional hegemonic power imposing conditions on nations with less power, and those nations in turn resisting and making counter demands, based on their growing clout as guardians of the world’s increasingly valuable forests. Nations of North and South each have resources prized by the other, and each exercise their sovereignty in attempting to exact some demands while deflecting others. By balancing what nations (and non-national stakeholders) have to do—and who gets to ensure that they have done what they say they have done—nations protect their sovereignty, and enhance survival of human and nonhuman communities in the process.

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211. See Takacs, *A Deep Equity Legal Analysis*, *supra* note 13, at 526 (defining “deep equity”).



*E. Definitions of Sovereignty: Traditional and Not so Much*

The contours of sovereignty form and reform depending on context, speaker, era, and need. Traditionally, sovereignty connoted that a government controls its own political and ecological affairs within a defined geographical area.<sup>212</sup> In Europe in 1648, the Treaty of Westphalia replaced a hierarchical ruling structure (with the Pope and the Holy Roman Emperor at the top of the hierarchy) with a horizontal structure of independent sovereign states that each possessed equal and legitimate authority.<sup>213</sup> “Control” threads through modern definitions of sovereignty, both in terms of how authority is constituted within a sovereign nation and whether outside forces have authority over the inner workings of a sovereign nation.<sup>214</sup>

Three elements pervade textbook definitions of the contours of sovereignty: First, states may freely determine their relations with other states. Second, states may determine the character of their own institutions. Third, states exercise control over the activities that occur within their territory.<sup>215</sup> With these parameters, all nations (hypothetically) respect “the principle of sovereign equality” of all other nations. Thus, all nations are (hypothetically) equally empowered to assert the privileges of sovereignty within their boundaries.<sup>216</sup>

When taken to an extreme—or when asserted by nations as a shield against foreign impositions, including REDD+ and MMRV safeguards<sup>217</sup>—states assert that these parameters are absolute. That is, states have total, unlimited autonomy to determine their own relations, institutions, and

212. SIGRUN SKOGLY, *BEYOND NATIONAL BORDERS; STATES’ OBLIGATIONS IN INTERNATIONAL COOPERATION* 23–24 (2006).

213. See R.R. PALMER & JOEL COLTON, *A HISTORY OF THE MODERN WORLD* 144–45 (6th ed. 1984); Winston P. Nagan & Craig Hammer, *The Changing Character of Sovereignty in International Law and International Relations*, 43 COLUM. J. TRANSNAT’L L. 141, 148 n.26 (2004).

214. See Nagan & Hammer, *supra* note 213, at 149–50 (noting that sovereign states have the power to control their populations, and to represent those populations in the international arena); Biersteker & Weber, *supra* note 202, at 2 (noting that the leaders of a sovereign, territorial state have “ultimate political authority” within their domain).

215. French, *supra* note 12, at 378.

216. U.N. Charter art. 2, para.1; see also Antony Anghie, *Colonialism and the Birth of International Institutions: Sovereignty, Economy, and the Mandate System of the League of Nations*, 34 NYU J. INT’L L & POLITICS 513, 513–14 (2002) (exploring the problematic underpinnings of “sovereign equality”).

217. Wilson, *supra* note 25, at 1021 (“[Sovereignty] is merely a concept that is used to legitimize their objection. Arguing that the recommendations in this Article [for access to justice for victims of offsetting] cannot be implemented because they infringe upon state sovereignty obfuscates the political and economic reality surrounding developing states’ unwillingness to risk a reduction in foreign investment.”).

activities.<sup>218</sup> However, as Judge Weeramantry of the International Court of Justice (ICJ) expresses it:

The doctrine that the sovereign is free to do whatever statute does not expressly prohibit is a long-exploded doctrine. Such extreme positivism in legal doctrine has led humanity to some of its worst excesses. History has demonstrated that power, unrestrained by principle, becomes power abused. Black-letter formulations have their value, but by no stretch of the imagination can they represent the totality of the law.<sup>219</sup>

Such complete independence has never occurred. Sovereignty has always made room for cooperation and interdependence.<sup>220</sup> As Perrez points out, cooperation is both a legal requirement and a constitutive element of sovereignty.<sup>221</sup> Even hegemonic states of the global North require cooperation (and in turn must cooperate) to achieve their goals. Smaller states, mostly in the global South, depend upon the good will and the obligations imposed by international law to continue to function and provide basic security and other needs for their citizens.<sup>222</sup> Furthermore, the legal principle that states are free to chart their own affairs has the complimentary principle that states cannot then decide the internal affairs of other states.<sup>223</sup>

International human rights law breaches the berm of absolute sovereignty, imposing external limits on what power leaders can wield with respect to their own citizens and institutions.<sup>224</sup> Sovereignty *has* always included a necessary element of cooperation; I advocate that sovereignty *should* evolve to require increasing cooperation in a world that will need interdependent solutions to environmental problems that threaten all the traditional hallmarks of sovereignty.

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218. See CHAYES, *supra* note 54, at 26-27; LORI F. DAMROSCH, LOUIS HENKIN, SEAN D. MURPHY, & HANS SMIT, *INTERNATIONAL LAW: CASES AND MATERIALS* 24 (5th 2009); PERREZ, *supra* note 195, at 3. See generally PERREZ, *supra* note 195, at 69-71 (providing a history of the concept of "sovereignty as independence"); Royal C. Gardner, *What is the Most Compelling Environmental Issue Facing the World on the Brink of the Twenty-First Century? Respecting Sovereignty*, 8 *FORDHAM ENVTL. L.J.* 133, 134-35 (1996).

219. Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, 494 (July 8) (Weeramantry, J., dissenting).

220. Marauhn, *supra* note 198, at 729-30; Javier Solana, *Whose Sovereignty?*, PROJECT SYNDICATE (Mar. 12, 2012), <http://www.project-syndicate.org/commentary/whose-sovereignty->.

221. PERREZ, *supra* note 195, at 247.

222. CHAYES, *supra* note 54, at 26-27.

223. See, e.g., PERREZ, *supra* note 195, at 134.

224. French, *supra* note 12, at 376; DAMROSCH, *supra* note 218, at 376; Anghie, *supra* note 216, at 536-45.

*F. Permanent Sovereignty Over Natural Resources*

Sovereignty met international environmental law in the 1960s and 1970s when the international community established the legal principle of “Permanent Sovereignty Over Natural Resources” (PSNR). PSNR arose as colonial powers divested power to new states seeking greater equity in the international order.<sup>225</sup> PSNR proposes that nations may do what they wish with natural resources within their borders, as long as the use does not interfere with other nations’ abilities to use their natural resources; a principle of fair and equitable resource sharing is implied.<sup>226</sup> Numerous UN General Assembly Resolutions proclaimed PSNR, summarized in Principle 21 of the 1972 Stockholm Declaration, which provides that:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”<sup>227</sup>

The Principle has been reaffirmed at UN-sponsored conferences in Rio and

225. See Declaration of Permanent Sovereignty Over Natural Resources, G.A. Res. 1803 (XVII), pmb., U.N. Doc. A/RES/5217 (Dec. 14, 1962); see also Convention on Biological Diversity, *supra* note 156, at pmb., ¶ 4, art. 3; United Nations Conference on the Human Environment, Stockholm, Swed., June 5–16, 1972, *Stockholm Declaration on the Human Environment*, ¶ 21, U.N. Doc. A/Conf.48/14/Rev. 1 (1973) [hereinafter Stockholm Declaration], available at <http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503>; PATRICIA BIRNIE, ALAN BOYLE, & CATHERINE REDGWELL, *INTERNATIONAL LAW & THE ENVIRONMENT* 191 (3d ed. 2009); Kamal Hossain, *Introduction to PERMANENT SOVERIEGNTY OVER NATURAL RESOURCES IN INTERNATIONAL LAW: PRINCIPLE & PRACTICE* ix (Kamal Hossain & Subrata Roy Chowdhury eds., 1984); Nico J. Schrijver, *Permanent Sovereignty Over Natural Resources Versus the Common Heritage of Mankind*, in *INT’L LAW AND DEVELOPMENT* 87 (1988).

226. PERREZ, *supra* note 195, at 69–70 n. 1 (2000); G.A. Res. 2158 (XXI), ¶ 1, 5, U.N. Doc. A/RES/2158 (Nov. 28, 1966). Principle 21 of the Stockholm Declaration provides:

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Stockholm Declaration, *supra* note 225.

227. Stockholm Declaration, *supra* note 225, ¶ 21; see also G.A. Res. 1803 (XVII), at 15, U.N. Doc. A/RES/1803 (Jan. 1, 1963) (noting that states have the right to permanent sovereignty over their natural resources and wealth for the benefit of their national development and people); G.A. Res. 2158 (XXI), *supra* note 226, at ¶ 1 (reaffirming “the inalienable right of all countries to exercise permanent sovereignty over their natural resources”); French, *supra* note 12, at 381 (arguing that the Stockholm Declaration’s “no harm” rule is the “most fundamental rule of modern international environmental law”).

Johannesburg, in the Preamble to the Convention on Biological Diversity, and elsewhere.<sup>228</sup> The UNFCCC reaffirms that States possess “the sovereign right to exploit their own resources pursuant to their own environmental and development policies,” while linking that to the “no harm” principle that such actions may not damage areas outside their national jurisdiction.<sup>229</sup> The general contours of sovereignty pertain to the legal idea as used in PSNR, as well.

Under the aegis of PSNR, some developing nations originally argued for nationalization of resources, especially oil.<sup>230</sup> These nations now may use PSNR to argue against environmental obligation to protect natural resources under their exclusive sovereign control.<sup>231</sup> Perrez notes that:

[A] typical argument against international obligations to protect and preserve the environment and natural resources is that such obligations are subterfuges designed to maintain the economic dominance of the industrialized world, that they are a new form of “eco-colonialism” or “environmental imperialism,” and that they impede the state’s control over its natural resources and thus violate the principle of permanent sovereignty over natural resources.<sup>232</sup>

In climate change negotiations, China and other nations wield claims of sovereignty to buffer their objections on intrusive MMRV protections, including protections for indigenous populations and third-party verifiers for various parameters.<sup>233</sup>

Simply because forests fall within the bounds of a nation does not necessarily put those forests beyond the reach of international environmental law. Once intact forests are deemed essential to mitigating GHG buildup, they inch closer to an international resource that states no longer control. REDD+ moves to internationalize intact forests by making

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228. See, e.g., United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, ¶ 2, U.N. Doc. A/CONF.151/26 (Vol. I); Jutta Brunné, *Common Areas, Common Heritage, and Common Concern*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 550, 565 (Bodansky et al. eds., 2007).

229. UNFCCC pmb., May 9, 1992, 1771 U.N.T.S. 169.

230. BIRNIE ET AL., *supra* note 225, at 191; PERREZ, *supra* note 195, at 108.

231. PERREZ, *supra* note 195, at 108.

232. *Id.* at 95.

233. See e.g., Niederberger & Kimble, *supra* note 51, at 48; Leo Peskett & Maria Brockhaus, *When REDD+ Goes National: A Review of Realities, Opportunities and Challenges*, in REALISING REDD+: NATIONAL STRATEGY AND POLICY OPTIONS 28 (Arild Angelsen ed., 2009).

them fungible carbon storage devices, yet another object to trade, with deals flying below the radar of national leaders. Once forests are internationalized as part of efforts to mitigate global GHG buildups, the concomitant MMRV regime further threatens the PSNR: The resource is no longer under the exclusive control of the nation that ensconces it, and efforts to conserve that resource include explicit intrusions into a nation's traditional sovereign prerogatives. On the other hand, Southern nations are exercising traditional sovereign prerogatives both to negotiate conservation of their own resources in exchange for economic gains, and by using the leverage of their forests to negotiate tit-for-tat MMRV regimes.

*G. International Environmental Law and the Challenge to Traditional Sovereignty*

Sovereignty has always existed in a tense space between the assertions of independence and the exigencies of interdependence. International environmental law pushes the goals of the latter, as environmental resources and pollutants do not respect cartographic boundaries resulting from the vagaries of history and the footprints of political expediency.

En route to their decision in the *Nuclear Weapons Case*,<sup>234</sup> the judges of the International Court of Justice state: "The Court recognizes that the environment is under daily threat and that the use of nuclear weapons could constitute a catastrophe for the environment."<sup>235</sup> The Court also recognizes that the physical world must constrain international law, as "[t]he environment is not an abstraction but represents the living space, the quality of life and the very health of human beings, including generations unborn."<sup>236</sup> The Court then affirms that sovereignty has its constraints, as "the existence of the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment."<sup>237</sup>

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234. The Court concluded (7-7 with the presiding judge offering the tiebreaking vote): [T]he threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law; However, in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defense, in which the very survival of a State would be at stake.

Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, 266 (July 8).

235. *Id.* at 241.

236. *Id.*

237. *Id.* at 241-42.

In his dissenting opinion, Judge Shahabuddeen notes that the freedoms granted by sovereignty are limited when those freedoms impinge on other nations' sovereign freedoms.<sup>238</sup> "International law does indeed concern relations between sovereign States. However, as it has been remarked, sovereignty does not mean that those relations are between billiard balls which collide but do not cooperate. There is at work a process of cohesion-building."<sup>239</sup> Explicitly,

[t]he framework shuts out the right of a State to embark on a course of action which would dismantle the basis of the framework by putting an end to civilization and annihilating mankind. It is not that a State is prohibited from exercising a right which, but for the prohibition, it would have; a State can have no such right to begin with . . . . It is difficult for the Court to uphold a proposition that, absent a prohibition, a State has a right in law to act in ways which could deprive the sovereignty of all other States of meaning . . . . If it finds, as it should, that both the Charter and the Statute posit the continued existence of civilization and of mankind, it is difficult to see how it can avoid a course of action which could ensure in the destruction of civilization and the annihilation of mankind.<sup>240</sup>

I follow Judge Shahabuddeen in the legal and ethical perspective I take on the boundaries of sovereignty. Sovereignty is constrained—and reimagined—by the need to cooperate to fill international duties. States have no graver duty than to avoid imperiling life on Earth, and have an affirmative duty to mitigate any such threats. Sovereignty's borders are porous; a country's liberties and duties are not unlimited even within national boundaries, and affirmative duties do not stop at national boundaries. States do not possess the right to act in ways that could destroy the framework upon which such rights are based. Unfettered GHG pollution—coupled with massive forest destruction—poses enormous threats requiring that sovereignty must be re-imagined to avoid further imperiling human and nonhuman communities today and into the future.

Human legal constructions—like "sovereignty"—ineluctably bend before the physical reality of shared environmental resources and invading pollution. Environmental resources often do not respect political

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238. *Id.* at 393.

239. *Id.* at 425.

240. *Id.* at 393–94, 397.

boundaries; pollution does not stop at border crossings.<sup>241</sup> Thus, numerous international courts have elaborated on the “no harm” rule, as international environmental law increasingly imposes a limitation on absolute sovereignty by imposing an obligation to prevent transboundary pollution.<sup>242</sup> This is widely seen as a principle of customary international environmental law.<sup>243</sup> The Preamble to the UNFCCC itself strikes this sovereignty balance:

*Recalling also that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction, Reaffirming the principle of sovereignty of States in international cooperation to address climate change.*<sup>244</sup>

According to French, “the unique features of environmental issues and the challenge they pose to the international community mean that international environmental law is actually affecting the very nature of international law itself.”<sup>245</sup> To take this a step further: International environmental law is affecting nature itself. Leaders and lawyers are engaged in a complex dialectic between the rapidly changing natural world and our legal constructs that facilitate manipulation, destruction, or stewardship of the natural world. As other environmental threats have done in the past, a rapidly changing climate leads us to change our legal notions of the bedrock principle of sovereignty. The natural world itself will be

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241. See Maruhn, *supra* note 198, at 730.; Michael J. Glennon, *Has International Law Failed the Elephant?*, 84 AM. J. INT’L L. 1, 30 (1990); Gardner, *supra* note 194, at 539–40 n.5.

242. See United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes art. 2, Mar. 17, 1992, 1936 U.N.T.S. 269; PERREZ *supra* note 195, at 3, 124; David Takacs, *Water Sector Reforms and Principles of International Environmental Law*, in WATER LAW FOR THE TWENTY-FIRST CENTURY 260, 283 (Philippe Cullet et al. eds., 2010); Christoph Schwarte & Ruth Byrne, Found. For Int’l Env’tl. Law & Dev., International Climate Change Litigation and the Negotiation Process 7 (Oct. 2010) (working paper), available at [http://www.field.org.uk/files/FIELD\\_cclit\\_long\\_Oct.pdf](http://www.field.org.uk/files/FIELD_cclit_long_Oct.pdf); Trail Smelter; Lac Lanoux, Argentina/Uruguay Pulp Mills, Gabčíkovo-Nagymaros, etc.

243. See Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay), 2008 I.C.J. 301–302, ¶ 5.52 (July 29); SUMUDU A. ATAPATTU, EMERGING PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 60–61 (2006); French, *supra* note 12, at 381; Schwarte & Byrne, *supra* note 242, at 6.

244. UNFCCC, *supra* note 229, pmb1.

245. French, *supra* note 12, at 377.

shaped by this legal principle.

Dan Tarlock laments that “[t]ransnational ecosystems are studied and mapped more than they are protected because there is little formal recognition of ecosystems as distinct objects of legal protection in international law.”<sup>246</sup> Tarlock notes that “[t]here are few explicit treaty-based ecosystem protection duties in international environmental law, likely due to respect paid to national sovereignty.”<sup>247</sup> Tarlock is looking for a vision of sovereignty as flexible as the ecosystems that transcend national borders. He opines:

Over time, ecosystem protection may also benefit from the efforts of international environmental and human rights law to modify the traditional concept of exclusive and unlimited national territorial sovereignty . . . modern conceptions of sovereign rights could be modified by *erga omnes* duties to require more sustainable use of national territories such as tropical rainforests and wetland systems. The legal rationale is that the potential adverse global impacts of ecosystem modification may make them part of the common heritage of mankind or a matter of common concern or common interest.<sup>248</sup>

Similarly, greenhouse gas pollution knows no political boundaries, and does not limit itself to territories adjacent to where the pollution is emitted.<sup>249</sup> The atmosphere cannot be divided into discrete quanta to be allocated to different nations. Ecological reality simply refuses to bow to cartographers’ or lawyers’ wishes.<sup>250</sup> While a certain amount of transboundary environmental harm is legally acceptable (although how much is not clear<sup>251</sup>), we’ve reached an age where GHG pollution threatens to fundamentally and irrevocably change human and nonhuman life as we know it. However much transboundary harm is acceptable, we’ve passed that threshold.

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246. Dan Tarlock, *Ecosystems*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 574, 576 (Bodansky et al. eds., 2007).

247. *Id.* at 586.

248. *Id.* at 587.

249. Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay), 2008 I.C.J. 301–302, ¶ 5.52 (July 29).

250. Marauhn, *supra* note 198, at 730.

251. See French, *supra* note 12, at 386.



*C. Forests: Whose Sovereign Property?*

But is the answer state-based, *erga omnes* obligations or other international legal strictures that undermine PSNR by mandating that nations must preserve their forests in the name of climate change mitigation or biodiversity preservation? When forests exist within the boundary of a nation, whose sovereign properties are they? Are forests part of the common heritage of humankind, or are they locally bounded resources whose fate is to be decided by national sovereigns or local people? National leaders will assert that our traditional notion of sovereignty, buttressed by the movement for PSNR, means that forests are simply the sovereign property of the State, and the State is free to do with those forests what it wishes.

But negotiations over REDD+—and over MMRV to make REDD+ projects possible—show that this common understanding is not always so common. The emerging MMRV for REDD+ regime seeks a different route. It finds multiple actors—both within and beyond forest nations—jockeying for control of a resource whose resource-meaning is evolving, and whose clear legal identity as a resource under exclusive sovereign control of a nation state is eroding.

As they construct a legal regime around MMRV for REDD+, various non-state parties are accruing power domestically and internationally, undermining the traditional borders of “sovereignty.” Global climate change erodes state sovereignty as it threatens the ecological viability of a nation’s resources, threatens the livelihoods of citizens who depend upon those resources, and undermines a nation’s ability to steward resources for its citizens’ welfare. Efforts to cope with externally imposed ecological change also drain resources from other goals an economically challenged, sovereign nation may wish to pursue on behalf of its citizens.<sup>252</sup> Climate change may cause island states to disappear completely,<sup>253</sup> in the context of REDD+, changing climates lead to changing ecological patterns to which

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252. Bierman & Dingwerth, *supra* note 210, at 5.

253. See Kristin Choo, *Washed Away: As Sea Levels Rise, Island Nations Look to the Law to Fend off Extinction*, A.B.A. J. (Mar. 1, 2012), [http://www.abajournal.com/magazine/article/washed\\_away\\_as\\_sea\\_levels\\_rise\\_island\\_nations\\_look\\_to\\_the\\_law](http://www.abajournal.com/magazine/article/washed_away_as_sea_levels_rise_island_nations_look_to_the_law) (“If climate change advances the way most scientists predict, the citizens of many of the world’s small island nations may face a catastrophe of mythic proportions sometime during this century.”); Mark Limon, *Human Rights and Climate Change: Constructing a Case for Political Action*, 33 HARV. ENVTL. L. REV. 439, 455 (2009) (examining how a human rights-based approach to climate change addresses the displacement of people when their island nations are inundated). Entire conferences are dedicated to this proposition. See, e.g., *Thousand Island Nations Conference Materials*, Center for Climate Change Law, COLUMBIA LAW SCHOOL, <http://web.law.columbia.edu/climate-change/resources/threatened-island-nations/conference-materials> (last visited Apr. 20, 2013).

forests may not be able to adapt. Heat, drought, and storms lead to more frequent fires, storm destruction, pest invasion, and species extinction.<sup>254</sup> Disruptions in agricultural patterns may lead farmers to destroy more forests than they otherwise would in a quest to survive. Sovereignty over natural resources is not “permanent”—or even temporary—if forests degrade or disappear due to changing ecological conditions.

PSNR arose to counter Northern control over former colonies’ natural resources; Southern nations now worry about diminished sovereignty if Northern interests appropriate Southern forests as REDD+ carbon repositories without adequate notification, due process, or compensation. As a solution to global climate change (*inter alia*), REDD+ threatens to further erode state sovereignty as manifold foreign and domestic actors attempt to gain control of forests to achieve various cherished goals. As a compliance device that ensures this dizzying array of actors in the REDD+ negotiations all fulfill their stated promises, MMRV may further erode sovereignty in both South and North by allowing these actors to reach into realms of domestic governance that were hitherto out of reach.

In the instant case, we see multiple actors, harmed in multiple ways by GHG pollution and deforestation, making multiple MMRV demands of multiple State and non-State actors. These voices from below and above the State level in the REDD+ debates are all eroding the traditional sovereign prerogatives of the State, with MMRV showing how mistrust necessitates a system that rebuilds trust.

As the State recedes as the main focus and driver of international law, it loses its hegemony to dictate what law is, and should be. Globalization renders international law increasingly fragmented, multi-jurisdictional, non-hierarchical, and chaotic, undercutting the sacrosanct notion of state sovereignty over internal regulation of resources, natural and otherwise.<sup>255</sup> That is not a bad thing, if concerned citizens can steer the reins of a legally pluralistic world towards a more deeply equitable world.<sup>256</sup> Traditional state sovereignty may be undermined by the “new world order,” described by Slaughter as “a system of global governance that institutionalizes cooperation and sufficiently contains conflict such that all nations and their peoples may achieve greater peace and prosperity, improve their stewardship of the earth, and reach minimum standards of human dignity.”<sup>257</sup> According to Slaughter, “[w]e need more government on a

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254. Gillis, *supra* note 19 (detailing the devastation that is occurring from a warming climate).

255. Boyd, *supra* note 74, at 549.

256. See, e.g., ROSE, *supra* note 138, at 3 (expressing the author’s goal of introducing “new options into our current political imagination”).

257. ANNE-MARIE SLAUGHTER, A NEW WORLD ORDER 15 (2004).

global and regional scale, but we don't want the centralization of decision-making power and coercive authority so far from the people actually to be governed."<sup>258</sup> MMRV for REDD+ may—if done well—present a paradigmatic example of a synergistic, deeply equitable, transnational democratic legal regime, a new emerging reciprocal contractual sovereignty where the role of the State is to hold the legal reins to ensure that MMRV rules get followed, and human and ecological communities are protected in the rush to internationalize and commodify the world's forests as carbon repositories.

Debates over forests are not just about what sovereign rights a national government possesses vis-à-vis other nations. REDD+ proposals highlight internal sovereignty struggles, notably legal wrangling between different levels of government over who controls forests, and who can negotiate their uses. REDD+ brings this into stark relief, as wealth will accrue to those who successfully claim sovereignty over a given forest. While many Southern nations have traditionally claimed that forests are the sovereign property of the national government, in 2008, the governors of California, Wisconsin, and Illinois signed a memorandum of understanding (MOU) with the governors of four Brazilian states and two Indonesian provinces to cooperate on REDD; this has been extended to additional subnational governments in Mexico, Peru, and Nigeria.<sup>259</sup> This MOU is the first agreement that links REDD+ initiatives in developing countries to U.S. greenhouse gas compliance laws and policies, and it was signed between subnational government actors.

If REDD+ leads nations to relinquish sovereign control over forests to subnational actors, devolution of law and policymaking from national to subnational or local level may mean greater respect for local legal traditions and community needs. Local people may have easier access to local government officials, and may be better able to hold them accountable for enforcing property law, thus potentially making for more stable and equitable REDD+ investments. On the other hand, subnational government leaders may also be more accessible to corporate or elite capture, or may need or wish to raise more revenues through resource exploitation.<sup>260</sup> Subnational governments may also be more buffered from international customary law or treaty norms that have helped reform forest management

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258. *Id.* at 8.

259. TAKACS, FOREST CARBON, *supra* note 16, at 23; GOVERNORS' CLIMATE & FOREST TASKFORCE, *supra* note 30. Wisconsin has since withdrawn. *Id.*; see also *About GCF*, *supra* note 30.

260. Witness feuds in land use policy in the US between governors of western states and the environmental policies of the federal government.

and human rights, and which may be the target of MMRV demands.<sup>261</sup>

Project actors need to know that the government or community entity with whom they're negotiating is actually the entity legally empowered to own carbon property, broker deals, or issue carbon credits. Any actors seeking to operate under subnational law must clarify the relationship between national, subnational, and local layers of law; any system of MMRV for social and economic protections will need to negotiate these relationships as well. Are state or provincial governments able to negotiate forest carbon-as-property legal rights and responsibilities absent national government approval? Do these subnational entities have the capacity to legislate, implement, and enforce forest carbon property laws and contractual obligations?<sup>262</sup> When the central State no longer maintains legal centrality, to whom do local people turn for redress if the MMRV contract terms are broken?<sup>263</sup>

For example, in large, forest-rich nations like Brazil or Indonesia, where some power over forests devolves to state, provincial, or district governments, forest carbon property legal rights and responsibilities of central and peripheral governments are still not clearly delineated in law. In Brazil, state Governors are entering into forest carbon deals, with benefits to accrue to federally recognized indigenous groups. Despite legal analyses suggesting that Brazilian law supports decentralized forest sovereignty, it is not crystal clear who has the legal right to control and allocate forest resources, and formal land tenure is often unclear.<sup>264</sup> Similarly, in Indonesia, the national government, provincial governments, and traditional *adat* communities struggle for sovereignty over forests.<sup>265</sup>

MMRV regimes that seek safeguards for socio-economic and biodiversity benefits will have to negotiate these internal sovereignty struggles, and will end up shaping the contours of sovereignty in the process. MMRV regimes' ground-truthing satellite data or policing

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261. See CHRISTY ET AL., *supra* note 99, at 90–93; David Edmunds et al., *Introduction to LOCAL FOREST MANAGEMENT: THE IMPACTS OF DEVOLUTION POLICIES 3* (David Edmunds & Eva Wollenberg eds., 2003); Anne M. Larson, Pablo Pacheco, Fabiano Toni, & Mario Vallejo, *The Effects of Forestry Decentralization on Access to Livelihood Assets*, 16(3) J. ENVT & DEV. 251, 252 (2007); SUNDERLIN ET AL., *supra* note 23, at 22, 26.

262. See TAKACS, FOREST CARBON, *supra* note 16, at 23.

263. See *id.*; Jody Freeman, *The Contracting State*, 28 FLA. ST. U. L. REV. 155, 156 (2000) (identifying problems posed by the government increasingly using contracts to deliver public services).

264. See TAKACS, FOREST CARBON, *supra* note 16, at 35–38; *Who Owns Carbon Trading Rights in the Amazon?*, BAKER & MCKENZIE (Dec. 11, 2009), <http://www.bakermckenzie.com/amazon/> (noting that, although the Brazilian government owns Indian lands, the Sururi Indians have the right to use and benefit from their land).

265. TAKACS, FOREST CARBON, *supra* note 16, at 49–51.

governance reforms will similarly have to account for who has sovereignty to control forests.

Indigenous peoples make their own sovereignty claims over forests. MMRV regimes protecting social and economic benefits are partially designed to protect these rights; all forms of MMRV must account for whom, in fact, controls access to, and who benefits from the forest.<sup>266</sup> Protection of indigenous and tribal peoples' ability to control their own resources is a principle of both treaty law and of customary international law.<sup>267</sup> The right of all "peoples" to "self determination"—that is, the right to "freely determine their political status and freely pursue their economic, social, and cultural development"—is the first right enshrined in the two most prominent human rights treaties: the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social, and Cultural Rights.<sup>268</sup> The Convention on Biological Diversity, the Convention on the Elimination of all forms of Racial Discrimination, ILO Convention No. 169, Rio Agenda 21, and the United Nations Non-legally Binding Instrument on All Types of Forests all require signatory nations to protect traditional use of biological resources and traditional knowledge of those resources.<sup>269</sup> In 2007, the UN General Assembly passed a declaration on the Rights of Indigenous Peoples; while non-binding, the Declaration

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266. See UN-REDD Programme, UN-REDD Programme Social and Environmental Principles and Criteria, 8th Policy Bd. Mtg., March 25–26, 2012, at 5, U.N. Doc. UNREDD/PB8/2012/v/1 (2012); Raygorodetsky, *supra* note 18; MATT SOMMERVILLE, USAID, LAND TENURE AND REDD+: ISSUES BRIEF 3–4 (2011), available at [http://usaidlandtenure.net/sites/default/files/USAID\\_Land\\_Tenure\\_Land\\_Tenure\\_and\\_REDD%2B\\_Issue\\_Brief\\_0.pdf](http://usaidlandtenure.net/sites/default/files/USAID_Land_Tenure_Land_Tenure_and_REDD%2B_Issue_Brief_0.pdf); CLIMATE, CMTY. & BIODIVERSITY ALLIANCE, CLIMATE, COMMUNITY AND BIODIVERSITY PROJECT DESIGN STANDARDS 20 nn.32–34, 25 (2d ed. 2008), available at [https://s3.amazonaws.com/CCBA/Upload/ccb\\_standards\\_second\\_edition\\_december\\_2008+%281%29.pdf](https://s3.amazonaws.com/CCBA/Upload/ccb_standards_second_edition_december_2008+%281%29.pdf).

267. Convention Concerning Indigenous and Tribal Peoples in Independent Countries, Jun. 27, 1989, 28 I.L.M. 1382, 1384 (entered into force Sept. 5, 1991); United Nations Declaration on the Rights of Indigenous Peoples, G.A. Res. 61/295, pmbl., U.N. Doc. A/RES/61/295 (Sept. 13, 2007); Russell Lawrence Barsh, *Indigenous Peoples*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 829, 845 (Daniel Bodansky et al. eds., 2007).

268. International Covenant on Civil and Political Rights art. 1.1, Mar. 3, 1976, 999 U.N.T.S. 171; International Covenant on Economic, Social, and Cultural Rights, Dec. 16, 1966, pt. I, art. 1.1, 993 U.N.T.S. 3. at Art 1.1; see also DAVID HUMPHREYS, LOGJAM: DEFORESTATION AND THE CRISIS OF GLOBAL GOVERNANCE 106 (2006) (noting that, under international law, "the word 'peoples' carries legal connotations of self-determination, namely the right of peoples to determine the conditions under which they live.").

269. See Convention Concerning Indigenous and Tribal Peoples in Independent Countries, *supra* note 268, arts. 7(1), 15(1) 16(1), 17(1), 17(2) (entered into force Sept. 5, 1991); Convention on Biological Diversity, *supra* note 155, art. 8(j), 10(c); Rio Declaration on Environment and Development, G.A. Res. 47/190, U.N. Doc. A/RES/E/CN.17/1997/8, (Dec. 22, 1992); U.N. Secretariat, *Non-legally Binding Instrument on All Types of Forests* 6–7, U.N. Doc. A/C.2/62/L.5, Annex (Oct. 22, 2007) (advising member states to manage forests with the approval and involvement of local communities, and to enhance these communities' access to forest resources to support livelihoods); GRIFFITHS, *supra* note 25, at 16, 33 (noting that, under the Anchorage Convention on Indigenous Peoples and Climate Change, all REDD initiatives should recognize and implement the rights of indigenous peoples).

nonetheless recognizes that “Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination.”<sup>270</sup> While this stops short of saying that indigenous and tribal peoples have complete sovereign control over their lands, it does bolster their case that REDD+ programs should enhance and not hinder conservation of, and access to, traditional indigenous lands.<sup>271</sup> Thus, sovereignty does not mean that State leaders are entirely free to conduct their internal affairs as they wish,<sup>272</sup> in negotiating REDD+ in general and REDD+ in particular, indigenous peoples advocate for legal control of forests.

Southern nations that claim forests as their sovereign patrimony also face challenges from external actors who would “internationalize” these forests.<sup>273</sup> Even prior to efforts to bring tropical forests into the international climate regime (with attendant MMRV demands to make sure they stay there), various scholars and activists claimed that forests (particularly Southern, biodiversity-rich forests) were the “common concern” or “common heritage” of humankind, and thus could not be exclusively controlled by the nations in which they were found. Ecosystem services arguments buttressing the need for REDD+ mean that the water-purifying, soil-stabilizing, biodiversity-preserving, evolution-protecting character of forests serve not just local or international populations, but the global good that transcends national boundaries. Were arguments for forests as “common heritage” to prevail, it would mean these forests are considered the public trust of future generations—much as Antarctica, or the climate are considered<sup>274</sup>—and thus national sovereignty would be significantly constrained. This legal concept has not been effectively applied to forests—

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270. United Nations Declaration on the Rights of Indigenous Peoples, *supra* note 267, art. 29(1). The United States, New Zealand, Australia and Canada voted against this resolution. *See Declaration on the Rights of Indigenous Peoples*, UNITED NATIONS PERMANENT FORUM ON INDIGENOUS ISSUES, <http://social.un.org/index/IndigenousPeoples/DeclarationontheRightsofIndigenousPeoples.aspx> (last visited Apr. 20, 2013).

271. Note also that the Convention on Biological Diversity does *not* refer to “rights” or “peoples” and does not reaffirm the role that indigenous peoples play in biodiversity conservation. *See BIRNIE ET AL.*, *supra* note 225, at 627–28.

272. Anghie, *supra* note 217, at 536–37.

273. *See* PHILLIPE SANDS, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* 495–96 (2003) (discussing the various International Tropical Timber Agreements).

274. *See, e.g.*, G.A. Res. 43/53, pmbl., ¶ 1, U.N. Doc. A/RES/43/53 (Dec. 6, 1988) (observing that the climate must be conserved and protected for the benefit of future generations).

yet.<sup>275</sup>

Southern nations' calls for the right to develop their natural resources (whether sustainably or not) have long been in tension with any calls for binding international conventions on forest protection, or for reconceiving forests as a subject of "common concern."<sup>276</sup> According to Birnie and Boyle, to argue that ecological resources are the "common concern of humankind . . . places them on the international agenda and declares them to be a legitimate object of international regulation and supervision, thus overriding the domain of domestic jurisdiction."<sup>277</sup> As Hunter expresses it, the "story of international forest policy has largely been one of national economic interests triumphing over international environmental issues, of State sovereignty triumphing over common concern."<sup>278</sup> To see forests as a legal object of "common concern," according to French, would make forests subject to the "emerging obligation on states to protect their own environment" not only for their own people, but for the good of the global whole.<sup>279</sup> REDD+—with apposite MMRV—could put this "emerging obligation" under contractual terms, albeit with suitable financial aid to enable success.

#### D. MMRV for REDD+ as Multijurisdictional, Multiparty Legal Pluralism

William Boyd believes "our extraordinary ability to see and understand global environmental problems such as climate change has facilitated an unrealistic view that the path to solving such problems must lead to global institutions capable of governing the Earth system in a comprehensive manner."<sup>280</sup> And so we should move away from our unfortunate, "unrealistic penchant for *globalism* in environmental law and governance."<sup>281</sup> Furthermore, as distinct, disparate voices stand at various rungs of (and away from) the traditional, formal legal hierarchy, even "[t]he state now appears simply as one element . . . in multiple circuits of power, connecting a diversity of authorities and forces, within a whole variety of

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275. See, e.g., Brunnée, *Common Areas, Common Heritage, and Common Concern*, *supra* note 225, at 563 ("[T]he common heritage concept has not found application beyond the LOSC and the Moon Treaty.")

276. DAVID HUNTER, JAMES SALZMAN & DURWOOD ZAEKE, *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* 1145 (4th ed. 2011).

277. Dan Tarlock, *Ecosystems*, *supra* note 246, at 588 n.29 (quoting P.W. BIRNIE ET AL., *INTERNATIONAL LAW AND THE ENVIRONMENT* 100 (2009)).

278. HUNTER ET AL., *supra* note 276, at 1145.

279. French, *supra* note 12, at 392.

280. Boyd, *supra* note 74, at 465.

281. *Id.* (emphasis omitted).

complex assemblages.”<sup>282</sup>

The emergence of REDD+, coupled with MMRV strings to make it functional, erode the State’s control of forests; a dizzying array of non-State actors foment private party contracts and externally imposed legal standards. MMRV for REDD+ in many ways exemplifies the central elements of “new governance,” which Bradley Karkkainen explains “breaks with fixity, state-centrism, hierarchy, excessive reliance on bureaucratic expertise, and intrusive prescription” and instead is “more open-textured, participatory, bottom-up, consensus-oriented, contextual, flexible, integrative, and pragmatic.”<sup>283</sup> Rather than the State as command and control imposer of law, new governance substitutes “state orchestration” of a complex legal program whose strictures and actors come from non-State loci. As in REDD+ and the MMRV that enables it, the law derives from a public-private partnership of forces within and outside the State; it is often soft law (many of the standards come from norm entrepreneurs including NGO consortiums or UN-affiliated organs) rather than “hard” mandatory rules coming from national legislatures or leaders.<sup>284</sup> The State, if it stepped up, would play traffic cop, attempting to regulate the various forces eyeing the forest to ensure that its citizens—and the ecosystem services upon which they depend—are, indeed, protected.<sup>285</sup>

But MMRV for REDD+ is not all new governance. As State control erodes—as it “disaggregates,”<sup>286</sup>—numerous actors are struggling to fill what Abbott & Snidal call an “orchestration deficit”<sup>287</sup> to control the various MMRV procedures and thus control the resources MMRV seeks to protect or promote. While disparate stakeholders seeking control over the world’s forest resources etch the parameters of MMRV for REDD+, the result nonetheless intrusively prescribes a set of algorithms that require bureaucratic expertise to calculate. The soft law of voluntary standards eventually will or must harden as law.<sup>288</sup> Karkkainen describes this hybrid as a consensual (as opposed to top down) process that nonetheless leads to

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282. ROSE, *supra* note 138, at 5.

283. Bradley C. Karkkainen, “New Governance” in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471, 474 (2004).

284. Kenneth W. Abbott & Duncan Snidal, *Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit*, 42 VAND. J. TRANSNAT’L L. 501, 509, 520 (2009).

285. SLAUGHTER, *supra* note 257, at 8 (“This is the globalization paradox. We need more government on a global and regional scale, but we don’t want the centralization of decision-making power and coercive authority so far from the people actually to be governed.”).

286. *Id.* at 31.

287. Abbott & Snidal, *supra* note 284, at 545.

288. *See id.* at 543 (explaining that some voluntary standards are soon embodied in legally binding instruments).



“fixed, definite, formal, ultimately coercive, enforceable and enforced—regulatory rules.”<sup>289</sup>

Describing “global legal pluralism,” Paul Berman writes that “spheres of complex overlapping legal authority are, not surprisingly, sites of conflict and confusion,” and advises we “create or preserve spaces for productive interaction among multiple, overlapping legal systems by developing procedural mechanisms, institutions, and practices that aim to manage, without eliminating, the legal pluralism we see around us.”<sup>290</sup> Osofsky contends that “the nature of climate change regulation necessitates multiscalar legal approaches . . . . Our demarcation of law into distinct levels of governance and the overlapping sovereignty that accompanies it make engagement of multiple scales simultaneously very challenging.”<sup>291</sup> A tit-for-tat MMRV for REDD+ seeks to manage—to make productive and functional—these overlapping legal systems, operating at multiple scales. The State need not disappear; it becomes a crucial actor holding some or all of the oversight reins, ensuring that stakeholders respect the laws and fulfill their legal responsibilities.

A bit of hybrid legal entropy can be a good thing if it enables effective management of dwindling natural resources, and maximizes stakeholder gains in a deeply equitable way. Boyd suggests that “it is clear that we need a fresh vocabulary, an expanded set of concepts, alternative ways of framing the challenges, but more importantly, new ways of understanding the conditions of possibility for climate governance that build upon past efforts without sliding back into the worn grooves of prior thinking.”<sup>292</sup> Carlarne and Farber describe emerging “transnational environmental law” as a “way of looking at environmental law as an interconnected and interactive global network in response to interconnected, and often global, challenges.”<sup>293</sup> It extends beyond the traditional purview of international environmental law (comprised of treaties, customary and general principles of international law, and the work of jurists<sup>294</sup>) to include domestic legislation that has influence across national boundaries and (as in the

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289. Karkkainen, *supra* note 283, at 487.

290. PAUL SCHIFF BERMAN, GLOBAL LEGAL PLURALISM 9–10 (2012).

291. Hari M. Osofsky, *Is Climate Change “International”? Litigation’s Diagonal Regulatory Role*, 49 VA. J. INT’L L. 585, 587, 589–90 (2009).

292. Boyd, *supra* note 74, at 466.

293. Cinnamon Carlarne & Daniel Farber, *Law Beyond Borders: Transnational Responses to Global Environmental Issues*, 1 TRANSNAT’L ENVTL. L. 13, 13 (2012).

294. See, e.g., Statute of the International Court of Justice art. 38, para. 1, available at [http://www.icj-cij.org/documents/index.php?p1=4&p2=2&p3=0#CHAPTER\\_II](http://www.icj-cij.org/documents/index.php?p1=4&p2=2&p3=0#CHAPTER_II) (requiring the ICJ to apply international conventions, prior judicial decisions, and international custom when deciding disputes).

instant case) private standards that operate at multiple levels.<sup>295</sup>

How does globalization's "plural, fragmented legal order" manifest itself tangibly?<sup>296</sup> Yang and Percival describe an increasingly "global environmental law" where international environmental legal regimes (à la the UNFCCC and Kyoto Protocol) increasingly intertwine with domestic, subnational, and local regulation.<sup>297</sup> The norms are not merely legal "transplants," where nations (particularly in the South) adapt pre-existing legal norms (particularly from the North) to jumpstart their own underdeveloped legal systems.<sup>298</sup> Instead, Yang and Percival describe "harmonization" efforts to mutually standardize particular norms for cross-border parallel regulatory regimes, particularly to cope with parallel environmental stressors.<sup>299</sup> Global environmental law, thus, is a "communal endeavor" that does "not remain the responsibility, or sovereign prerogative, of individual national legal systems or the specialized province of international lawyers and diplomats."<sup>300</sup> As a result, we see in the rush to REDD+ and negotiations for rules to facilitate it, certain "legal principles have become part of the global commons" and thus "are at home everywhere."<sup>301</sup>

Can this unruliness in the global legal order nonetheless effectively and equitably staunch huge problems such as climate change and deforestation? Nikolas Rose calls for "investigations of government [that]...try to track force relations at the molecular level, as they flow through a multitude of human technologies, in all the practices, arenas and spaces where programmes for the administration of others intersect with techniques for the administration of ourselves."<sup>302</sup> MMRV (particularly for REDD+) is, potentially a way forward—both towards governing and harmonizing messy, disparate variables and actors who seek to measure and control those variables, but also for tracking and modeling a reciprocal, multijurisdictional, pluralistic environmental governance. On one hand, MMRV for REDD+ is an essential element of any successor to the Kyoto Protocol—the kind of overarching, overweening global institution that

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295. Shaffer & Bodansky, *supra* note 122, at 32–34.

296. Boyd, *supra* note 74, at 498.

297. Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 *ECOLOGY L. Q.* 615, 616 (2009).

298. See ALAN WATSON, *LEGAL TRANSPLANTS: AN APPROACH TO COMPARATIVE LAW* 29–30 (2d. ed. 1993) (noting that legal "transplants"—that is, when "an entire legal system or a large portion of it is moved into a new sphere"—occur when people move into new territories, or when they adopt the large part of another peoples' system).

299. Yang & Percival, *supra* note 297, at 627.

300. *Id.* at 653.

301. *Id.* at 664.

302. ROSE, *supra* note 138, at 5.

Boyd and others<sup>303</sup> suggest we might discourage, lest it overly discourage us and lead us down fruitless pathways that neither mitigate GHG buildup nor protect forests. If there is to be a grand multilateral successor to the Kyoto Protocol, both REDD+ and the MMRV that permits it, will be prominently featured. No global, unifying treaty to mitigate climate change will occur without REDD+ or without MMRV.

Gus Speth notes that major international agreements on climate and biodiversity have done little to help climate or biodiversity, and forests have eluded such agreements; treaty goals are largely aspirational, and “not followed by clear requirements, targets, and timetables.”<sup>304</sup> Thus even if the fusty, UNFCCC, 190+ nation, and potentially moribund Grand Guignol process is put out of its misery, REDD+ will continue to be one of the new and messy legal architectures for coordinating multi-stakeholder efforts across multiple jurisdictions.<sup>305</sup> This architecture includes rules to govern bilateral REDD+ deals, with significant private sector participation.<sup>306</sup>

REDD+—with apt MMRV—if done correctly, builds on the “worn grooves of prior thinking.”<sup>307</sup> Previous efforts to curb deforestation have scarcely worked; traditional models of development, even with the “sustainable” moniker, often fail.<sup>308</sup> MMRV for REDD+ arises, in part, as an alternative to such actions—to build something new that could possibly work for synergistic benefits. The REDD+ participants seek to fulfill cherished goals whose loci lie in the world’s imperiled forests; MMRV maximizes all parties’ goals. Reciprocal MMRV for REDD+ balances control in multiple, disparate stakeholders’ hands. Mutualistic MMRV is necessary not just for Green Fund or other Northern financing of Southern REDD+ as part of a UN global climate change treaty; it may govern any

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303. See, e.g., JAMES GUSTAVE SPETH, *RED SKY AT MORNING: AMERICA AND THE CRISIS OF THE GLOBAL ENVIRONMENT* 95–97 (2004) (arguing that progress under the Kyoto Protocol is “too little and too slow”).

304. *Id.* at 97.

305. See *Ad Hoc Working Group on Long-Term Cooperative Action Under the Convention, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE*, <http://unfccc.int/bodies/body/6431.php> (explaining that the Ad Hoc Working Group was established “to conduct a comprehensive process to enable the full, effective and sustained implementation of the Convention.”) (last visited Apr. 20, 2013); *Alliance of Small Island States Leaders’ Declaration, 2012*, AOSIS.ORG, <http://aosis.org/wp-content/uploads/2012/10/2012-AOSIS-Leaders-Declaration.pdf> (expressing concern that climate change threatens its members’ “territorial integrity, viability and survival”) (last visited Apr. 20, 2013).

306. See PAUL SCHIFF BERMAN, *GLOBAL LEGAL PLURALISM* 108–09 (2012); DAVID DIAZ ET AL., *STATE OF FOREST CARBON MARKETS 2011*, at 13 (2011) (providing an overview of private market participation in REDD+); Volcovici, *supra* note 18 (noting that a handful of financial institutions are working with NGOs to invest in REDD+ projects).

307. Boyd, *supra* note 74, at 466.

308. Speth, *supra* note 303, at 96.

kind of deeply equitable system that both treats forest carbon as a fungible asset in the global value chain but also treats human dignity and species survival as objects of global—and local—concern. States *qua* states are only part of the answer—maintaining their pivotal role in formal international law, acting as orchestrators in a legally pluralistic system of ever expanding layers of norms and actors, and intersecting to forge regulation that might overcome global mistrust in time to save some robust remnants of a gorgeous planet.

*E. Paradigm Power Struggles, Common but Differentiated Responsibilities, and Sovereign Equality*

Dueling MMRV rhetoric underscores the different paradigms in which Northern and Southern nations operate as they consider climate change and the aid that Northern nations proffer to help Southern nations adapt. The aspects of those paradigms that prevail help define the responsibilities sovereignty requires in this century. MMRV for REDD+ moves towards compromise between seemingly incommensurate paradigms.

Countries (or subnational entities) incur considerable expense fulfilling objectives of multilateral environmental treaties—or implementing their own domestic environmental laws. Environmental protection doesn't come cheap, particularly for developing nations that face opportunity costs when they prioritize long-term environmental sustainability over short-term resource development.<sup>309</sup>

All aspects of MMRV, in particular, may be expensive.<sup>310</sup> A survey of ninety nine developing nations found that only China, India, and Mexico had the MMRV resources necessary to monitor forests comprehensively.<sup>311</sup> More demanding MMRV procedures—satellite monitoring, forest patrols, biodiversity surveying, stakeholder participation, grievance procedures, comprehensive legal reform, governance housecleaning—require more technical equipment, more training, and/or more hours of expert time.<sup>312</sup>

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309. See WAGGE ET AL., *supra* note 23, at 44 (noting that the sellers of forest resources face significant transaction costs).

310. See, e.g., BREIDENICH & BODANSKY, *supra* note 38, at 12 (acknowledging that the implementation of MMRV is resource-intensive); Niederberger & Kimble, *supra* note 51, at 47 (noting that measuring, reporting, and verifying of emissions reductions must be done through a “rigorous, robust, and transparent” system).

311. MARTIN HEROLD, AN ASSESSMENT OF NATIONAL FOREST MONITORING CAPABILITIES IN TROPICAL NON-ANNEX 1 COUNTRIES: RECOMMENDATIONS FOR CAPACITY BUILDING 27–28 (2009), available at [http://princes.3cdn.net/8453c17981d0ae3cc8\\_q0m6vsqxd.pdf](http://princes.3cdn.net/8453c17981d0ae3cc8_q0m6vsqxd.pdf).

312. See Wettestad, *Monitoring and Verification*, *supra* note 71, at 994 (noting that high verification costs are apparent in trading systems in the United States and United Kingdom); REDD-NET, *supra* note 120, at 3 (noting that recent estimates put monitoring and capacity-building costs at \$2

Furthermore, a thin line separates facilitating compliance through cooperation (with technical and financial aid to assist compliance) and demanding compliance through a more rigorous and even punitive system—which would increase the costs.<sup>313</sup> Thus, developing nations demand financial assistance if they are to implement robust MMRV systems, with advocacy groups supporting these demands.<sup>314</sup> Indeed, some portion of the billions of dollars pledged for fast track and long-term climate assistance would go towards “REDD+ Readiness,” including building a transparent system of MMRV.<sup>315</sup>

Northern nations, however, are asking for a guaranteed return on their REDD+ investments—even though they have been primarily responsible for creating the problems that necessitate MMRV. Benito Müller of the Oxford Institute for Energy Studies discusses the two purposes of climate change aid. Northern leaders see climate change aid as standard, official development assistance (ODA): No legal obligation requires giving this aid, and no recipient is legally entitled to receive such aid.<sup>316</sup> Southern leaders, on the other hand, see climate change aid as restitution, that is, as payment to help nations adapt to the harmful impacts of climate change, which have been caused by the North. They believe that both restorative justice and international law oblige Northern nations to defray the costs of environmental harms that they have caused, are causing, and most ominously, will cause.<sup>317</sup>

International law scholars may be forgiven for reacting skeptically when the term “emerging obligation” is applied to any legal responsibility, and for thinking that such a term may say more about the author’s normative desires than any actual reality.

Common but Differentiated Responsibilities (CBDR) may (or may not) be an emerging principle of customary international environmental law,<sup>318</sup>

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to \$25 per kilometer of forest; \$10,000 to \$30,000 per month for expert support; and \$100,000 to \$140,000 per year for training).

313. Niederberger & Kimble, *supra* note 51, at 47–48.

314. SCHMIDT, *supra* note 9, at 2.

315. Tim Boyle & Josep Gari, *Supporting REDD+ Readiness in UN-REDD Partner Countries*, UN-REDD PROGRAMME, available at [http://www.un-redd.org/Newsletter9\\_Support\\_to\\_partner\\_countries/tabid/4670/language/en-US/Default.aspx](http://www.un-redd.org/Newsletter9_Support_to_partner_countries/tabid/4670/language/en-US/Default.aspx) (last visited Apr. 20, 2013).

316. Müller, *supra* note 131, at 2.

317. *Id.*; WINKLER ET AL., *supra* note 197, at 7. This paper avoids discussing formal legal state responsibility for the harms they have caused through fomenting climate change. See Sinden, *supra* note 132, and Daniel A. Farber, *Climate Justice*, 110 MICH. L. REV. 985, 994–996, 1001 (2012), for an extensive discussion on how one might conceptualize and calculate such damage remedies. *But see id.* at 1001 (“If climate change results in a drastic global threat to society, increasing the rate of savings is not likely to be a workable form of compensation to future generations.”).

318. See ATAPATTU, *supra* note 243, at 424 (contending that CBDR is not yet a customary principle, and has no application outside of express language in various MEAs); CULLET, *supra* note 25,

but certainly is the foundational legal and ethical principle under UNFCCC/Kyoto Protocol, and prevailed in the Cancun agreements.<sup>319</sup> (It may, however, have met an untimely demise in Durban.<sup>320</sup>)

As described in the UNFCCC's Art. 3(1):

The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.<sup>321</sup>

CBDR would require that all nations mitigate greenhouse gas emissions and contribute to adaptation efforts, but requires more significant contributions from Northern nations.<sup>322</sup> The climate change conventions' legal requirements combine pragmatism with ethics. Pragmatically, some nations, predominantly in the global North, have greater financial resources to mitigate GHG buildup and help other nations adapt; those nations gained these resources from industrial development whose excesses continue to pollute the global atmospheric commons. Thus the North bears the primary responsibility to reduce emissions and help the South adapt to the pollution the North has emitted en route to economic prosperity.<sup>323</sup> So, for example, a

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at 88–89 (contending that CBDR is not now, but may soon be, a customary principle); Ulrich Beyerlin, *Policies, Principles, and Rules*, in *THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW* 425, 442 (Bodansky et al. eds., 2007) (arguing that CBDR is not a part of today's customary international law, because states have been ambivalent about adopting it as such); Christopher D. Stone, *Common But Differentiated Responsibilities in International Law*, 98 AM. J. INT'L L. 276, 276 (2004) (noting that CBDR is receiving increased attention in international law); Takacs, *A Deep Equity Legal Analysis*, *supra* note 13, at 538–41 (noting that CBDR is an emerging principle of international law).

319. See, e.g., UNFCCC, *supra* note 229, pmb1., (“[T]he global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their Common but Differentiated Responsibilities and respective capabilities and their social and economic conditions.”).

320. Cara Horowitz, *The Durban Outcome: End of CBDR?*, LEGAL PLANET BLOG (Dec. 13, 2011), <http://legalplanet.wordpress.com/2011/12/13/the-durban-outcome-end-of-cbdr/#more-12846>.

321. UNFCCC, *supra* note 229, art. 3(1); see also Kyoto Protocol, *supra* note 108, art. 10(c) (imposing obligations on the parties based on CBDR); Lavanya Rajamani, *The Nature, Promise, and Limits of Differential Treatment in the Climate Regime*, 16 Y.B. INT'L ENVTL. L. 81, 93 (Ole Kristian Fauchald et al. eds., 2007) (noting that both Kyoto and the UNFCCC have “as their ethical anchor the principle of Common but Differentiated responsibilities”).

322. CULLET, *supra* note 25, at 87.

323. See Philippe Cullet & Annie Patricia Kameri-Mbote, *Activities Implemented Jointly in the Forestry Sector: Conceptual and Operational Fallacies*, 10 GEO. INT'L ENVTL. L. REV. 97, 102–03 (1997) (noting the calls “for developed countries to take the lead in solving existing global environmental problems, on the basis of different historical (and present) contributions of developed and developing countries to the creation of these problems.”); Anita M. Halvorsen, *Common, But Differentiated Commitments in the Future Climate Change Regime - Amending the Kyoto Protocol to*

group of experts from Brazil, South Africa, India, and China assert the “overoccupation of the atmosphere by Annex-1 countries GHG emissions” should lead to a “sustainable future with equity.” To compensate for their impermissible “overuse of carbon space,” developed countries must dramatically reduce their GHG emissions to allow for sustainable (and, regrettably, carbon emitting) development in developing countries.<sup>324</sup>

To the extent that CBDR remains an explicit plank of climate change legal agreements, a principle of customary international environmental law, or a moral norm guiding stakeholder behavior in explicit or implicit ways, it buttresses the requirement for a two-tiered MMRV system: If Northern nations are subject to stricter MMRV, it is because of the normative basis underlying CBDR—they created the problem in the first place and thus should face heavier compliance responsibilities. If Southern nations must take action based upon their “common” responsibilities, those actions should prove less onerous, and be subject to MMRV only if they receive aid to conduct the necessary and expensive MMRV measures.<sup>325</sup> By their willingness to foot the MMRV bill, Northern nations are, at least, assuming enhanced responsibilities towards mitigating a shared problem.

CBDR remains controversial, particularly in the U.S. and Canada, where the age of “differentiated” is over (if it ever existed), and we are now in the age of “common.”<sup>326</sup> U.S. Special Envoy for Climate Change Todd Stern finds “no textual support” for the idea that in the climate change regime, “developed countries have legally binding obligations while developing countries are asked only to act voluntarily.”<sup>327</sup> Stern continues, “the old ‘Kyoto’ paradigm is wrong as a matter of textual exegesis. But, more important, this paradigm is unworkable as a matter of both substance and politics.”<sup>328</sup> The U.S. thus refuses to act unilaterally or with its developed world allies; the South must be included in provisions exacting mandatory GHG reductions.<sup>329</sup>

In 2010, leading up to the Cancun negotiations, Stern explicitly tied the

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*Include Annex C and the Annex C Mitigation Fund*, 18 COLO. J. INT’L ENVTL. L. & POL’Y 247, 254 (2007) (asserting that “it is not equitable for developing countries to equally share the burden of controlling GHG emissions when, until recently, developed countries have done most of the polluting”); Rajamani, *supra* note 321, at 89, 93 (noting the UNFCCC and the Kyoto Protocol’s recognition of different “responsibilities” and “obligations” of developing versus developed countries).

324. WINKLER ET AL., *supra* note 197, at 6, 19.

325. This is the framework emerging from the Copenhagen Accord and Cancun Agreements.

326. See Bodansky, *supra* note 45, at 240 (noting the shift in breaking “the so-called firewall between developed and developing countries”).

327. Stern, *supra* note 119.

328. *Id.*

329. See, e.g., Goldenburg, *supra* note 52 (noting America’s all or nothing position on climate change).

\$100 billion per year pledged by developed countries to the new Green Fund to both explicit mitigation commitments from the South, and to “transparency”—operationalized in a strict MMRV agreement.<sup>330</sup> Stern stressed emphatically that this aid does not fall under the aegis of CBDR.<sup>331</sup> In Durban in 2011, Canada took up the charge to rid the climate change agreements of any whiff of CBDR. Canada’s Environmental Minister Peter Kent insisted that:

Emerging and developing countries need to stop “wielding the historical guilty card” and asking for a free pass on emissions reductions just because in the past, industrialized countries had more emissions than the rest of the world . . . . There is a fairly widely held perception in the developing world of the need for guilt payment to be built into any international deal on climate.<sup>332</sup>

Some in the North believe that the South is using MMRV demands as a way to have issues decided in their favor.<sup>333</sup> They see rapidly developing Southern nations like China and India as carbon polluters who should not be profiting from Northern aid while they, too, contribute to climate change without having to take legally binding steps to address their own burgeoning carbon emissions. U.S. and Canadian diplomats see climate change aid as a form of charity, part of a beneficent commitment to provide ODA. As voluntary aid givers, Northern nations get to set the terms of the aid. A rigorous MMRV is part of those terms, ensuring that nations in the South do what they pledge to do—and ensures Northern legislators and citizens that their money is not going up in smoke.<sup>334</sup> As such, the shift away from CBDR further buttresses U.S. and allies’ claims for MMRV for GHG reductions, forest cover change, and governance: If Northern nations are not required to provide climate change aid by any legal or political exigencies, then those nations are freer to attach MMRV strings to whatever aid they do choose to give out of the goodness of their collective hearts.

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330. Stern, *supra* note 119.

331. *Id.*; *United States Announces \$1 Billion to Reduce Forest Emissions*, U.S. DEP’T OF AGRIC., (Dec. 16, 2009), <http://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2009/12/0618.xml&printable=true&contentidonly=true>; Goldenburg, *supra* note 52.

332. Rhead Enion, *Fossil of the Day: Canada Takes a Commanding Lead*, LEGAL PLANET BLOG (Dec. 1, 2011), <http://legalplanet.wordpress.com/2011/12/01/12606/>. A group of NGOs awarded a daily “Fossil of the day” at Durban “for the country doing its best to impede, stall or otherwise oppose progress in climate negotiations.” Canada won the overall competition, with the United States finishing a close second.

333. Stern, *supra* note 119.

334. *See* Ward, *supra* note 6, at 1 (describing the role of the United States in shaping the language of the Bali Action Plan).



While the North speaks the language of charity, the South sees pledged aid as repayment on a debt, as a form of restitution and reparation.<sup>335</sup> Climate change will disproportionately harm the South, and disproportionately harm the poorest of the poor in the South—that is, climate change will most harm those who did least to create the problem.<sup>336</sup> Thus for many in the global South, to discuss climate change is to discuss global injustice.<sup>337</sup> To view the MMRV debate through a Southern lens means seeing that Northern citizens have used the atmosphere as a carbon dump for the byproducts of industrial excess generated as they gluttonously overconsume the Earth's resources; as a consequence, Northern citizens have become wealthy without paying for the damaging externalities of their development. If we view the atmosphere as a divisible carbon dump, the U.S. and other Northern nations exceed their entitlement, and Southern nations do not come close to their entitlement.<sup>338</sup>

Thus both distributive justice (fair allocation of burdens and benefits of ecological pollution and amenities) and corrective justice (fair compensation for the harms of past, present, and future pollution) demand restitution, and provide Southern nations the ethical bases for their MMRV demands.<sup>339</sup> Embodied in the principle of CBDR, this is the factual and ethical underpinning for their MMRV demands that financial contributions be generous, transparent and genuinely additional, and that these donations and GHG emissions reduction pledges be aggressive and subject to MMRV scrutiny. Were the United States to pay its “carbon debt” to the developing world at the European Union’s emissions trading prices, as China and

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335. See, e.g., Bodansky, *supra* note 45, at 237 (explaining that developing countries regard the financial assistance as payment of a “carbon debt” that they owe for their emissions). For a thorough treatment of climate reparations, see Burkett, *supra* note 5, at 521–36.

336. See HUMAN DEVELOPMENT REPORT, *supra* note 5, at 8 (noting the vulnerability of the poor to “climate shocks” and that “climate disasters are heavily concentrated in poor countries”); VERHEYEN, *supra* note 5, at 34 (explaining that “[d]eveloping economies rely more heavily on climate-sensitive activities” and will be affected by climate change “more severely”); Nelson, *supra* note 5, at 615–16, 619 (noting that African countries and other “less developed areas” will feel a “disproportionate share of [the] side effects of industrialization”); Revkin, *supra* note 5 (noting the “growing climate divide” between wealthy and poor nations); MACE, *supra* note 5, at 1 (explaining that countries with “the least historical responsibility for GHG emissions now find themselves the most vulnerable to the impacts of climate change”).

337. See, e.g., Sinden, *supra* note 132, at 296 (“The developed world is speaking the language of economics, while the developing world speaks the language of justice.”); WINKLER ET AL., *supra* note 197, at 9 (explaining that parties should protect the climate system in order to benefit inter-generational justice).

338. Sinden, *supra* note 132, at 297, 343.

339. Gonzalez, *supra* note 5, at 78–79.

Bolivia have asked, the United States would pay around \$100 billion, or about 1% of its GDP.<sup>340</sup>

The potential emerging consensus around REDD+, and the MMRV that enables it nudges the paradigm somewhere towards the center of the axis, away from the poles of charity and restitution. MMRV for REDD+ helps level an unequal playing field. Although “sovereign equality” of nations is a fundamental principle of international law, Southern nations have depended on Northern largesse, subordinated in many ways to the hegemonic economic and political power of the North. Former colonies have long had trouble breaking free from their colonial masters, their land still marshaled by Northern forces for export crops, minerals, and other commodities, their budgets dependent upon foreign aid and the strings attached to that aid. Past “aid” proffered by the World Bank and other Northern-dominated institutions have come with controlling, sometimes harsh strings attached.<sup>341</sup> Their sovereign ability both to conduct internal affairs robustly and to conduct relations with foreign states freely has thus long been impaired, and “sovereign equality” of North and South nations has remained elusive. Ecological disruptions wrought by climate change lead to social disruptions, further undermining Southern nations’ ability to conduct their internal affairs as effectively as Northern nations can.

Forests help bring the international legal myth of “sovereign equality” among nations closer to reality. In this global climate change century, trees give the South a new bargaining chip to move towards sovereign equality. The planet’s vast, gorgeous tropical forests are not only the planet’s lungs and cradle of biological splendor, but also an alluring resource that holds the key to overcoming the crisis of mistrust that pervades international law. We all need repositories for newly problematic excess greenhouse gases, and thus Southern nations have what Northerners want: Lush forests that may disappear tomorrow and former forests that could once again rise. A small but vigorous subset of concerned Northerners have long prized Southern forests for the biodiversity they contain and the role they serve in sustaining Southern livelihoods and sheltering endangered indigenous peoples. But resources are not similarly prized; they may become so through the machinations of international law. For Northern entities suddenly compelled by conscience or law to seek cost-efficient repositories

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340. Sinden, *supra* note 132, at 297, 343. The Stern Review set a “social cost” of carbon of \$85/metric ton, which would require 3% of US GDP. NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE: THE STERN REVIEW 322 (2006). *See also* Bodansky, *supra* note 45, at 237 (noting that the Copenhagen Accord creates a collective commitment of \$30 billion between 2010–2012, and sets a collective goal of \$100 billion per year by 2020).

341. Anghie, *supra* note 216, at 629; Gonzalez, *supra* note 5, at 79.

for their industrial carbon pollution, the South's forests become an even more alluring, economically valuable resource.

REDD+ can exacerbate, or pose a way out of, the morass of dueling actors with conflicting agendas. REDD+, with apposite MMRV, allows the South to maintain some vestiges of their magnificent forests, and thus provide ecological resiliency to help local communities adapt to climate change. Southern nations are better able both to preserve these forests and to acquire funds that allow them to pursue ecological and sustainable social development (and not to have to divert funds to deal with the social exigencies of changing ecosystems). We see also in MMRV negotiations that Southern nations are not merely kowtowing to the conditionalities imposed by Northern donors, but are countering demands in a reciprocal MMRV regime. In its forests, the South has what the North wants; as this resource becomes ever more prized, we move ever closer to the reality of sovereign equality.

The developing world's forests, perhaps the most valuable resource for their countries' development—and their most precious bargaining chip—allow them to meet the demands for “common” contributions to solving the climate change crisis, provided they submit to the requisite MMRV regime.<sup>342</sup> By pledging reductions in deforestation and forest degradation, developing nations can make meaningful contributions to curbing climate change and fulfill the developed nations' growing demands for “common” responsibility for addressing the climate change crisis. By pledging aid to help developing nations preserve their forests, pledging further reductions in GHG emissions, and agreeing to the MMRV terms for both, developed nations meet their “common” responsibility as well.

The MMRV-attached strings discussed above blur the charity/restitution paradigms. The donors still make intrusive MMRV demands, and the recipients agree to meet some of those demands; but the recipients make their own demands, to which the donors are likely to acquiesce. Forests are the pivot, and reciprocal MMRV the price all nations will pay to achieve the mutually beneficial goals REDD+ promises. Forests allow the “common” in CBDR, financial and technology transfer make sovereign equality more real, and mitigated climate change makes long term sovereignty over natural resources more possible.

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342. Boyd, *Ways of Seeing in Environmental Law*, *supra* note 77, at 872, 877.

*F. MMRV and the Quest for Quantifiability*

In the past decade or so, forests have acquired new roles in international law: They have become carbon repositories, with legal structures rapidly developing to regulate this new identity for an old entity.<sup>343</sup> Climate change activists and Northern business interests—looking for a cheap way to offset their required GHG emissions reductions that their domestic legal regimes impose, or looking to capitalize on the offsetting business<sup>344</sup>—have promoted this new vision of trees as carbon storage units. Forests thus house a measurable, fungible commodity suitable for trading on international financial markets.<sup>345</sup> Cherished anew as receptacles for industrial carbon, this effort to repurpose forests is abetted by conservationists who see in this new quantification regime their best hope of massive conservation financing, and pro-poor advocates who eye the prospect of billions of dollars of cash transfer from North to South, and by all stakeholders who see in REDD+ a way to promote long term ecological sustainability by realizing new value from intact forests.<sup>346</sup>

To quantify is to more easily govern and control.<sup>347</sup> As Nikolas Rose expresses it, numbers “actually constitute the domains they appear to represent; they render them representable in a docile form.”<sup>348</sup> To turn complex phenomena into numbers means attempting to depoliticize (and thus more easily control) complicated political decisions. Particularly where a crisis of “mistrust” exists, the “allure of numbers increases”: “Expert” professionals “justify their judgments on the grounds of objectivity,” and frequently situate “this objectivity in numerical form.”<sup>349</sup> By transforming trees into abstruse calculations about past, present, and future tons of carbon a storage unit may deliver through contractual schemes, various actors seek to control the fate of tropical forests. Seen through one lens, a tree is a mass of tons of carbon, and MMRV helps a set of (often) extraterritorial “experts” measure those tons, monitor their changing volumes, report those tons in a uniform way, and verify the results.

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343. See generally TAKACS, *FOREST CARBON*, *supra* note 16 (discussing several nations’ efforts to define forest carbon property rights).

344. Takacs, *Carbon Into Gold*, *supra* note 26, at 87.

345. Boyd, *Ways of Seeing in Environmental Law*, *supra* note 77, at 856.

346. For example, there is a diverse coalition of forces underwriting the CCBA standards. See Takacs, *Carbon Into Gold*, *supra* note 26, at 87 (“The legal principles we need—preventative, polluter pays, environmental democracy and a host of environmental human rights, CDR—are there, as are some strong codes of voluntary standards that provide a starting point for formal lawmaking.”).

347. ROSE, *supra* note 138, at 197 (“Numbers have achieved an unmistakable political power...[.]”).

348. *Id.* at 198.

349. *Id.* at 208.

William Boyd writes that “the very act of rendering something objective and calculable is a way of making it technical, thereby taking it out of the world of politics and social institutions.”<sup>350</sup> But with REDD+, the worlds of politics and social institutions are pushing back. Although some interested participants object to this new vision of forests as quantified carbon storage devices,<sup>351</sup> others are hopping on the quantification bandwagon, with a twist. Forests are a kaleidoscopic resource for a swirling mass of interests, each hoping to make their own cherished object—the gene pool available for evolution, the secure land tenure that supports indigenous people, the corruption of mid-level bureaucrats, the dollars flowing from financial capitals, the smoke rising from burning fossil fuel to make electricity—an equally quantifiable, compliance-able commodity capable of external uniform comparison. If quantification facilitates control, the interested parties doing the quantifying hope to be the experts controlling the cherished resource. Sometimes these experts are exerting control from afar, even if a few short years ago they had no authority or claim to control the resource. Sometimes those claiming expertise are quite close—the subnational governmental entities negotiating REDD+ cooperation with California, local communities looking for MMRV-related employment, or indigenous people asserting rights over their traditional lands. All see a route to controlling forests through proclaiming new categories that can be quantified and thus MMRVed, composing the MMRV criteria, designing the MMRV regime, and conducting the MMRV procedures.

In the MMRV debates, we see a drive to render everything as objective and calculable units, to convert messy social institutions and decisions into technical calculations. Various MMRV demands shine a light back on these social and political institutions, but do it by inverting the social into the technical, by converting the political into a spreadsheet of calculations. Diverse bundles of elements can be divvied up, quantified, scaled, calculated, made more of or less of—can be MMRVed—and thus subjected to competing power plays over who will control the objects of calculation. Rendered more docile through quantification, the resource can potentially be more easily governed, more capable of legal control from authorities within and without a nation’s traditional sovereign borders. But now many stakeholders are jockeying for control of REDD+; once the resource is quantifiable, fractious parties will jockey for control of the MMRV reins.

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350. Boyd, *Ways of Seeing in Environmental Law*, *supra* note 77, at 910.

351. *See* sources cited *supra* note 26.

If the MMRV regime is balanced and reciprocal, an increasing and diverse array of players can meet their cherished goals vis-à-vis (and favorable for) the world's forests and climate. A stable and sustainable MMRV regime would balance control among stakeholders who will get what they cherish from the world's forests. The parties that master the quantification regime may challenge the traditional role of the state in maintaining sovereign control over a nation's forests. Quantification makes reciprocal, contractual sovereignty possible.

### G. Reciprocal Contract Sovereignty

REDD+ amounts to an alchemy that separates the carbon from the trees, the trees from the forests, and the forests from the nation states where those forests grow. Trees become carbon storage repositories, and international legal regimes emerge to regulate who may own what quanta of these repositories. As William Boyd puts it:

By de-coupling forest carbon from the forest ecosystem, REDD de-couples territory and accountability from their traditional instantiations in the state. Understanding what is gained and what is lost in this process with respect to existing practices of forest use and governance will require moving beyond the predominantly technical focus on carbon accounting and MRV that dominates much of the contemporary REDD policy discussion.<sup>352</sup>

Here, though, the MMRV discussion *is* the discussion of multiple, mutual accountabilities, facilitated through the quantification of multiple variables. MMRV may decouple accountability from state control, but it also may decentralize and democratize—or not, depending on how the MMRV regime is structured; how *quid pro quo* it is; how the MMRV regime measures and protects local rights and economic and noneconomic values; whether or not local people derive expertise and economic benefit not just from carbon offsets but from MMRV-based employment; and a host of other parameters an MMRV regime will have to negotiate.

Southern nations that accept the legal limits MMRV for REDD+ places on their sovereignty also assert a corollary that poor nations, possessing biological resources that are of “common concern,” *require* Northern aid to

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352. Boyd, *supra* note 74, at 543–44.

fulfill those legal responsibilities.<sup>353</sup> It's tit-for-tat, and MMRV spells out the reciprocal duties where all sides limit their sovereign rights. With REDD+ and MMRV, Southern nations who wish to protect their own environment—and cooperate in protecting the planet from transboundary ecological disaster—find both a legal mechanism and a revenue stream. The attendant contractual obligations may or may not necessarily flow from a customary principle of international law, but they do attain status as consideration in a consensual bargained-for exchange. Nonetheless, what emerges is an obligation of an aid-receiving State, province, or community to protect its own environment and its own people—with an attendant obligation of a GHG-polluting State to reimburse the receiving State for opportunity costs incurred as it restricts its sovereignty—while simultaneously taking on the responsibility to reduce its own GHG pollution, the impacts of which further weaken and threaten the Southern nation's forests, and thus its sovereign control over its resources.

The Convention on Biological Diversity presages this. The Convention stresses that conservation is a common concern, but reinforces PSNR, and does not have intrusive provisions on biodiversity, *per se*, as an object of common concern.<sup>354</sup> The Convention promotes access to genetic resources, but stipulates that such access is dependent upon “mutually agreed terms.”<sup>355</sup> While REDD+ does not access forests for their genetic resources, the CBD still presents a rudimentary analog for the *quid pro quo* MMRV-for-REDD+ scheme being contemplated.

Sovereignty has a price: The share of the enormous amounts of money pledged for Kyoto follow-up aid (some of which goes to REDD+), not to mention the funds available from Norway, the voluntary market, California's REDD+ program, etc. Tyler Welti writes of “market sovereignty”: Sovereignty is less an indivisible, inalienable entitlement, and more accurately a commodity that a nation can divide into quanta and put up portions for bid; provided a nation doesn't give up too many quanta of sovereignty, international efficiency and cooperation can improve through sovereignty commodity trading.<sup>356</sup> As REDD+ stakeholders quantify the various parameters, and make them MMRV-able, they facilitate sovereignty commodity trading. REDD+ funding might set a price high enough to entice Southern nations to give up more of their PSNR legal rights and trade

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353. See French, *supra* note 12, at 397 (arguing that issues of common concern to the international community require that community to provide assistance regarding those issues).

354. See Jutta Brunnée, *Common Areas, Common Heritage, and Common Concern*, *supra* note 228, at 563, 565 (“Proposals to extend the reach of the common heritage concept beyond common areas and their resources have also stalled.”).

355. French, *supra* note 12, at 396.

356. Welti, *supra* note 199, at 340, 366.

away just a bit of their governance rights, thereby allowing international observers to police their forests from satellite and up close. The increasing and disparate quantified values of trees may entice Northern entities to open up their GHG emissions and financial accounting books. MMRV is part of this price.

On one hand, this may be seen as a form of bribery, revealing the fiction of “sovereign equality” of nations. Everyone may get one vote at the UN General Assembly, but some nations are more equal than others. The United Kingdom can determine its own political institutions more definitively than can any of its former colonies; the United States can pursue its sovereign goals—territorial integrity, determination of political institutions, domestic resource use—more robustly than Tuvalu can.

But it’s not simply that the South is putting its forests up for sale to the highest bidder, caving under Northern pressure or domestic need. It’s not so much market sovereignty as sovereignty by contract. Both sides of the North/South axis are bargaining for what they want, as sovereign nations are wont to do. They are in part driven by the terms of international law—both treaty obligations and the exigencies of principle that exert their force, whether the principles do or don’t amount to custom.

Demands for MMRV are interconnected, and if fulfilled as part of a post-Kyoto deal, bring the ideal of sovereign equality closer to reality. One set of parties fulfills sovereign responsibilities under international law to pay for the pollution they created while reducing the pollution so as not to further impinge on other parties’ sovereignty. In so doing, they acquire access to forests they covet for multiple reasons. The other parties acquire more sovereignty (less GHGs to impair their territory; more funds to be able to manage their domestic and international affairs) by giving up some sovereignty. MMRV for REDD+ is a sovereignty battle fought to a draw.

D.A. French writes that we must not treat sovereignty

as a static, immovable fact, but rather as a flexible tool through which states can more effectively act in an increasingly interdependent global society. Sovereignty is not the antithesis to environmental protection, far from it. It is through a nation state being sovereign – namely being in a position to regulate internal matters and negotiate at an external level – that it can most appropriately seek to conserve both its own and the global environment.<sup>357</sup>

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357. French, *supra* note 12, at 399.



Northern nations, by and large, have created the climate change crisis; Southern nations, by and large, will pay the price. Southern nations have a magnificent resource—their forests—that Northerners prize, historically as a source of timber products, and now, increasingly, as a harbor for biodiversity, a haven for indigenous people, and a repository for the North's industrial carbon excess. Environmental protection is, one hopes, better achieved through a program of MMRV for REDD+ that reconceives the boundaries of sovereignty to strengthen sovereignty.

More fundamentally, the laws of ecology that cannot be countermanded by human decrees present an empirical force to which international law must yield. To re-envision and reconstruct "sovereignty" is to acknowledge the challenge of the biophysical environment to international law: Ecological processes know no natural boundaries, and failing to acknowledge this by neglecting to adapt our legal regimes to the exigencies of the physical world is a paragon of human hubris.

To negotiate reciprocal MMRV demands is both to relinquish and to gain some degree of sovereignty over prized resources; to protect the rights and sustain the resources of citizens, for whom national leaders serve as trustees and whose rights "sovereignty" exists to protect; to assert sovereignty in controlling one's relations with other nations by trading valuable resources *quid pro quo*; and to nudge sovereignty towards reciprocal cooperation for shared, essential goals. In making reciprocal MMRV demands for a REDD+ program, all actors are negotiating the boundaries of sovereignty for a mistrustful, imperiled, increasingly interconnected world.

#### CONCLUSION

Global climate change may be the greatest threat we face, but it leads the parade of other daunting challenges humans and nonhumans face in the twenty-first century. We need a robust, multilateral, transparent international legal system to help see us through.

Law constrains and enables society. Law dissuades us from bending to our basest desires, but also allows us to fulfill the best ends of our lives, providing we do not harm others in the process. *International* law has largely sought to constrain and enable what *nations* may and may not do vis-à-vis other nations; more recently, international law has extended its reach to regulate, in some contexts, how national leaders may treat their own citizens and the citizens of other nations. In the international law ecosystem, legal institutions must adapt as the world evolves, or these institutions must go extinct. In the emerging MMRV for REDD+ regime I

discuss here, global climate change is shaping how we conceive of and structure our legal ecosystems. If we fail to adapt our laws to a changing climate, we may abet unimaginable suffering.

Professor Daniel Bodansky discusses three models of international law as applied to the Durban Platform specifically, and climate change mitigation and adaptation generally. In the *contractual* model, a nation will negotiate and obey agreements as long as it benefits and the treaty “contract” ensures that all sides comply.<sup>358</sup> Bodansky avers that this fails in current climate change treaty negotiations because many of the parties—especially the US and China—are unwilling to enter into a contract where they perceive they would lose more than they would gain. Similarly, the *prescriptive* model—where explicit rules or customary norms dictate the “correct” rules for what parties must and should do—fails because not everyone agrees what the correct rules are, and because no means of compliance exists to make the parties do what they ought to do.<sup>359</sup> This leaves us with the *facilitative* model, where international law catalyzes what nations, subnational governments, communities, and private businesses and individuals are already inclined to do. Thus the “Copenhagen Accord and Cancun Agreements reflect a facilitative model by seeking to encourage national pledges, establishing reporting and assessment mechanisms to promote transparency, and creating the Green Climate Fund to assist developing countries with mitigation and adaptation.”<sup>360</sup>

Certainly the MMRV for REDD+ system I portray here reflects a facilitative model of international law: Memorialized in individual contracts, in domestic legal systems, in World Bank and other donor standards and codes for REDD+, this system facilitates and promotes participation and compliance in a global (or simply two-party) REDD+ agreement. But surely international law can do more than this.

The emerging MMRV for REDD+ regime blends all three of these models, ultimately prescribing (in domestic legislation, private standards, and multiparty contracts) a set of rules that entities comply with because they are all left better off, and facilitating compliance with these rules through the system of mutually beneficial MMRV. MMRV for REDD+ shows how a contractual model of international law can work. Forests acquire new value, because the prescriptive nature of the Kyoto Protocol and domestic law that operationalizes the treaty (or otherwise imposes GHG emission reductions) is creating a market for inexpensive offsets; even where REDD+ offsets are not formally permitted, various stakeholders

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358. Bodansky, *supra* note 183, at 7.

359. *Id.* at 10.

360. *Id.* at 11.

recognize the value in preserving the carbon absorptive capacity of forests. Thus, many parties make “Pareto gains”—not just social justice and human rights advocates, or biodiversity proponents, or local citizens concerned about protecting their ecological sources of livelihood, but also Northern domestic leaders worried about cumbersome environmental laws and the businesses and citizens they burden.<sup>361</sup> And the MMRV for REDD+ regime follows a *prescribed* model of international law. The prescriptions are memorialized in individual contracts and codes of standards and, eventually, in binding domestic law and international agreements. They also carry a normative weight that combines seemingly disparate paradigms, as Northern nations’ (and, perhaps, corporations’) “charitable” contributions are nonetheless founded on an underlying notion of Common but Differentiated Responsibilities: Having created the problem of global climate change, they are the primary funders of efforts to compensate the primary victims of current and incipient environmental change, albeit with MMRV strings they attach to ensure a safe return on investment.

Although it springs from mistrust, the reciprocal, contractual sovereignty model posed by MMRV for REDD+ brings parties together through mutually beneficial give-and-take for an increasingly interconnected future. A suitable MMRV regime—where all stakeholders ensure that their interests and resources are appropriately valued—brings us closer to a world where sovereign equality of nations is reality, and thus brings us closer to a world of Common but Differentiated Responsibilities where all parties’ interests are satisfied. Even if climate change turns out to be the Y2K of global environmental disasters, the goals of REDD+ (preserving biodiversity, improving ecosystem services, alleviating poverty, redistributing wealth from North to South), if realized, still contribute to a world of deep equity. That is to say, in this author’s value hierarchy, these are all good outcomes. The model of proposed MMRV, if implemented, is a similar good in itself, providing a model of reciprocal, non-hierarchical cooperation to solve pressing problems and simultaneously ensure that cooperation works.

Southern nations’ forests are the planet’s lungs, its repository of resplendent biodiversity, and a source of resilience for local communities. They are also, increasingly, cherished carbon storage repositories for the North’s industrial excesses. Southern nations will put their forests under contract, allow them to be surveyed and quantified as carbon storage devices, and accede to MMRV strings attached, if Northern nations pay and pledge to reduce their emissions further—with MMRV attached to those

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361. Takacs, *Carbon Into Gold*, *supra* note 26, at 87.

pledges as well. REDD+ for MMRV comprises a new conception of reciprocal, contractual sovereignty: Bargaining nations (and sub- and supranational parties) are devising a model for how parties can overcome mistrust to move forward towards reciprocal, dialectic goals that simultaneously promote the health and potential of humans, communities, and ecosystems.

All of the proposed MMRV regimes, if implemented for REDD+, could contribute to a world of deep equity. Ensuring that developed and developing nations reduce emissions as they promise blunts the impact of climate change on the poor and non-human through mitigation. Ensuring that developed nations pay what they pledge does the same through facilitating adaptation. Ensuring that benefits reach the intended audiences in the developing world contributes to individual, community, and ecological health and potential. Monitoring that developing nations reduce deforestation as they say does the same. And crosscutting MMRV that tracks social and biodiversity benefits promotes maximum benefits to individual, community, and ecosystem health and potential from REDD+ funding.

An evolved sovereignty could emerge from successful MMRV regimes that fosters greater cooperation, trust, technological developments, and legal changes to tackle other pressing problems.