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## Limiting corrupt incentives in a global REDD regime

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|---------------|---|
| Item Type     | Article   |
| Authors       | Brown, Michael L.   |
| Publisher     | UC Berkeley School of Law   |
| Rights        | With permission of the license/copyright holder   |
| Download date | 2026-07-06 14:08:13   |
| Link to Item  | <a href="http://hdl.handle.net/20.500.12424/175814">http://hdl.handle.net/20.500.12424/175814</a> |

## Limiting Corrupt Incentives in a Global REDD Regime

*Michael L. Brown\**

*This Note addresses the potential for corruption in the emerging program to cut greenhouse gas emissions by averting deforestation. Reducing emissions from deforestation and degradation (REDD) was a main component of the bargain struck between major emitters at Copenhagen in December 2009. REDD has tremendous potential to engage developing nations in making meaningful reductions in greenhouse gas emissions—harvesting the world’s forests generates 20 percent of annual global warming pollution—while simultaneously easing the path for Annex I states to meet their binding emissions commitments. Unfortunately, REDD’s promise could also be derailed by graft and misaligned incentives, issues that have dogged the constituent pieces of a REDD program. The Clean Development Mechanism (CDM), the major existing emissions offsets market, has come under fire for failing to promote real reductions in aggregate emissions while facilitating massive wealth transfers. Further, forestry management in the developing world has long been fraught with corruption. This Note takes up the challenges the CDM and forest agencies have faced, both to uncover the sobering difficulties awaiting REDD and to discern possible solutions to those vexing problems. It concludes by suggesting institutional design and enforcement measures to craft a system that is both corruption resistant and effective at delivering the significant climate and political benefits that REDD promises.*

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\* J.D. expected 2011, Yale Law School. The author would like to thank Professors Susan Rose-Ackerman and Douglas Kysar for their insights and encouragement during the development of this Note.

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#### INTRODUCTION

The December 2009 U.N. Conference in Copenhagen reaffirmed that a major premise of the climate change regime to follow the Kyoto Protocol will be REDD,<sup>1</sup> which stands for reducing emissions from deforestation and degradation.<sup>2</sup> REDD's emergence as a climate change mitigation strategy stems from the confluence of a number of potential benefits in tackling deforestation.<sup>3</sup>

1. Copenhagen Accord, Dec. 18, 2009, ¶¶ 6, 8, 10, Decision -/CP.15 (advanced unedited version) [hereinafter Copenhagen Accord], available at <http://unfccc.int/resource/docs/2009/cop15/eng/107.pdf>. REDD had clearly gained steam as a major climate change mitigation tool in the lead-up to Copenhagen as well. See, e.g., U.N. Framework Convention on Climate Change (UNFCCC), Conference of the Parties Thirteenth Session, Dec. 3–15, 2007, *Report of the Conference of the Parties on its Thirteenth Session*, ¶ 1, U.N. Doc. FCCC/CP/2007/6/Add.1, 1/1/CP.13 (Mar. 14, 2008) [hereinafter Bali Action Plan], available at [http://unfccc.int/documentation/documents/advanced\\_search/items/3594.php?rec=j&preref=600004671#beg](http://unfccc.int/documentation/documents/advanced_search/items/3594.php?rec=j&preref=600004671#beg); JADE SAUNDERS ET AL., PROFORST, REDUCED EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION: LESSONS FROM A FOREST GOVERNANCE PERSPECTIVE 4 (2008), available at <http://www.proforest.net/publication-objects/REDD%20and%20Governance.pdf>; FLORENCE DAVIET, WORLD RESOURCES INSTITUTE, BEYOND CARBON FINANCING: THE ROLE OF SUSTAINABLE DEVELOPMENT POLICIES AND MEASURES IN REDD 4 (2009), available at <http://www.wri.org/publication/beyond-carbon-financing>.

2. Deforestation is defined by the UNFCCC as “the direct human-induced conversion of forested land to non-forested land.” UNFCCC Secretariat, *Background Paper for the Workshop on Reducing Emissions From Deforestation in Developing Countries* 12 (U.N. Working Paper No. 1(a), 2006) [hereinafter REDD Workshop] (quoting Annex to decision 16/CMP.1 (see FCCC/KP/CMP/2005/8/Add.3)), available at [http://unfccc.int/files/methods\\_and\\_science/lulucf/application/pdf/part\\_i\\_scientific\\_issues.pdf](http://unfccc.int/files/methods_and_science/lulucf/application/pdf/part_i_scientific_issues.pdf). Although it lacks a precise definition by the UNFCCC, degradation typically describes forest cover loss that falls short of deforestation. *Id.* Conscious of the potential to obscure the differences in meaning between the two terms, in the service of simplicity this Note will nonetheless only use the word “deforestation” in referring to the combined problem of deforestation and degradation.

3. In fact, REDD could even be deployed to address problems broader than deforestation. The Copenhagen Accord uses the term “REDD-plus,” rather than “REDD” in describing its preferred forest carbon mechanism. Copenhagen Accord, *supra* note 1, at ¶¶ 6, 8, 10. “REDD-plus” has been a term of art in the climate negotiations, referring to crediting reforestation and afforestation programs in addition to those that avert destruction of existing forests. See REDD Monitor, REDD: An Introduction, <http://www.redd-monitor.org/redd-an-introduction> (last visited Feb. 1, 2010). As such, a REDD program

For one, REDD would cover an expansive swath of global greenhouse gas emissions. Forest ecosystems—including trees and other plants, soil, and decaying organic matter—are a giant stock of potential greenhouse gases, storing an estimated 50 percent more carbon than the entire amount contained in the earth's atmosphere.<sup>4</sup> While the data are uncertain, emissions from deforestation and degradation account for approximately 20 percent of the annual global, anthropogenic total, with two-thirds of that amount coming from tropical forest destruction.<sup>5</sup> Managing the enormous stock of potential emissions from deforestation largely falls outside the scope of the Kyoto Protocol.<sup>6</sup> The 2002 rate of forest loss in Brazil and Indonesia alone, however, produced four-fifths as many greenhouse gases as the Annex I countries<sup>7</sup> committed to reduce that year under the Kyoto Protocol.<sup>8</sup> As such, ignoring REDD may upset efforts to keep global average temperatures below the threshold likely to trigger the worst impacts of climate change.

From the perspective of Annex I states, including deforestation and degradation in the international climate regime could create a €45 billion market in REDD credits,<sup>9</sup> affording purchasing nations greater flexibility in setting stringent emissions targets by making compliance more cost effective. The British government's exhaustive study of climate change economics found reducing deforestation to be a key low-cost option for lowering global

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that includes reforestation and afforestation is a possible outgrowth of the Copenhagen Accord. This Note will largely avoid discussion of projects to expand forest stocks, however, for four reasons. First, the Copenhagen Accord does not define the scope of the "plus" in REDD-plus, leaving it unclear what type of forest enhancement programs it envisions. Second, REDD-plus would require straying into debates of program design exogenous to the purposes of this Note, such as whether to mandate that newly planted tree stocks mimic local species diversity. Third, reforestation and afforestation projects, though largely untapped, already exist under the Kyoto Protocol's Clean Development Mechanism. *See infra* note 133 and accompanying text. Programs aimed at preventing deforestation, on the other hand, present challenges not yet confronted in the international offsets market. Last, much of the incentive for corruption in REDD activities, and the means to prevent them, apply equally well to reforestation and afforestation. Thus, the Note's focus on deforestation will inform discussion of any "plus" components of REDD.

4. DAVIET, *supra* note 1, at 4.

5. MICHAEL DUTSCHKE & REINHARD WOLF, DEUTSCHE GESELLSCHAFT FÜR TECHNISCHE ZUSAMMENARBEIT (GTZ) GMBH, REDUCING EMISSIONS FROM DEFORESTATION AND DEGRADATION IN DEVELOPING COUNTRIES: THE WAY FORWARD 7 (2007), available at <http://www.gtz.de/de/dokumente/en-climate-reducing-emissions.pdf>. While the 20 percent figure comes from Intergovernmental Panel on Climate Change estimates, a new study has found that deforestation could account for anywhere between 6 and 17 percent of global emissions. Chris Lang, *20% of CO2 Emissions from Deforestation? Make that 12%*, REDD MONITOR, Nov. 4, 2009, <http://www.redd-monitor.org/2009/11/04/20-of-co2-emissions-from-deforestation-make-that-12/#more-3179>.

6. Márcio Santilli et al., *Tropical Deforestation and the Kyoto Protocol*, 71 CLIMATIC CHANGE 267, 269 (2005), available at [www.edf.org/documents/4867\\_Santillietal\\_ClimaticChange.pdf](http://www.edf.org/documents/4867_Santillietal_ClimaticChange.pdf).

7. Under the UNFCCC, the developed and transition states parties listed in Annex I are asked to take the lead in emissions reductions. *See* United Nations Framework Convention on Climate Change, art. 4(2), May 9, 1992, S. Treaty Doc. No. 102-38, 1771 U.N.T.S. 107 [hereinafter UNFCCC].

8. Santilli et al., *supra* note 6, at 268.

9. SAUNDERS, *supra* note 1, at 4.

emissions.<sup>10</sup> A study recently published in the journal *Science* concluded that a full halt in deforestation of the Brazilian Amazon is well within reach by 2020, requiring an estimated \$7–18 billion in additional financing.<sup>11</sup> Such an outcome would reduce projected global carbon emissions between 2 and 5 percent.<sup>12</sup>

The West is poised to play a big role in financing REDD. At Copenhagen, six industrialized countries pledged \$3.5 billion, including a promise of \$1 billion from the United States, over the next three years to jumpstart REDD.<sup>13</sup> Before Copenhagen, Norway committed to supply up to \$1 billion for Brazil's Amazon Fund, which is aimed at cutting deforestation rates in the Brazilian Amazon by 70 percent.<sup>14</sup> In addition, it pledged \$90 million to United Nations and World Bank REDD projects, as well as over \$170 million to preserve forests in Tanzania, the Congo Basin countries, and Guyana.<sup>15</sup> While earlier European Union (E.U.) climate directives have sought to minimize reliance on credits from land use and forestry offsets,<sup>16</sup> the European Parliament and Council have approved spending some of the future auction proceeds from the continent-wide carbon market to reduce deforestation abroad.<sup>17</sup> The American Clean Energy and Security Act, known as the Waxman-Markey bill, was approved by the U.S. House of Representatives to impose comprehensive greenhouse gas regulation.<sup>18</sup> Waxman-Markey contemplates heavy use of emissions offsets in general,<sup>19</sup> and offers support for REDD projects in particular.<sup>20</sup> The World Bank's Forest Carbon Partnership Facility, a forum to

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10. NICHOLAS STERN, STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE 543 (2006) (commissioned by the British government), available at [http://www.hm-treasury.gov.uk/stern\\_review\\_report.htm](http://www.hm-treasury.gov.uk/stern_review_report.htm) (pre-publication edition).

11. Daniel Nepstad et al., *The End of Deforestation in the Brazilian Amazon*, 326 SCI. 1350, 1351 (2009).

12. *Id.* at 1350.

13. *REDD Funding Pledge Aims to Spur a Wider Deal*, CARBONPOSITIVE, Dec. 17, 2009, <http://www.carbonpositive.net/viewarticle.aspx?articleID=1782>.

14. Rhett A. Butler, *Norway Emerges as Champion of Rainforest Conservation*, MONGABAY.COM, Mar. 19, 2009, [http://news.mongabay.com/2009/0319-norway\\_forests.html](http://news.mongabay.com/2009/0319-norway_forests.html).

15. *Id.*

16. See European Parliament and Council Directive 2004/10/EC, art. 1.7 O.J. (L388) 18 (amending Directive 2003/87/EC) (noting the limit of 1 percent applied by the E.U. to use of land use and forestry credits and highlighting some of the technical issues with those projects that remain to be worked out).

17. See *Commission Proposal for a Directive of the European Parliament and of the Council of Europe Amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading System of the Community*, at 4, COM (2008) 16 final (Jan. 1, 2008), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0818:FIN:EN:PDF>.

18. American Clean Energy and Security Act of 2009 (Waxman-Markey), H.R. 2454, 111th Cong. (2009) (stating the purpose of the act is “[t]o create clean energy jobs, achieve energy independence, reduce global warming pollution and transition to a clean energy economy”).

19. *Id.* §722(d)(1) (allowing the use of domestic and international offsets by capped American firms up to a national total of two billion metric tons).

20. *Id.* §§ 704, 726(g), 753–754 (requiring EPA to dedicate a portion of cap and trade system auction proceeds toward purchasing REDD emissions reductions, and to provide technical support and capacity building to developing country forest agencies).

develop and field test potential REDD policies that went online in June 2008, has raised around \$160 million thus far and has exceeded expectations with thirty-seven developing country and thirteen donor participants.<sup>21</sup>

Further, REDD promises to be an opportunity for the developed world to assist in the climate-friendly economic growth of the global South. The large pending market in REDD credits could underwrite sustainable development in supply countries.<sup>22</sup> Tropical forests store 50 percent more carbon per unit area than forests elsewhere,<sup>23</sup> and they are historically the site of some of the highest global rates of deforestation.<sup>24</sup> Thus, the lion's share of REDD credits will likely come from the forest-rich developing countries clustered around the equator—places like Brazil, Indonesia, Cambodia, and the Central African Republic.<sup>25</sup> REDD also furthers a number of non-climate positive externalities, including maintaining the incredible biodiversity of forests and preserving forest-based indigenous groups' ways of life.<sup>26</sup> Because of its promise, REDD has been in the works under the international process to address climate change since 2005, and was given central billing in the Bali Action Plan adopted in December 2007 as a road map for the Copenhagen negotiations.<sup>27</sup>

For all its potential, however, implementing REDD poses a number of vexing problems, not the least of which are built-in perverse incentives for corruption that could undermine REDD's effectiveness in delivering actual emissions reductions and inspiring a vibrant market in REDD credits. A number of observers wonder if the countries most likely to host REDD efforts are capable of open management of the program.<sup>28</sup> In October 2009, an Interpol environmental crime specialist in charge of a World Bank report on illegal forestry issued a stiff warning on the potential for corruption in a REDD

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21. WORLD BANK, FOREST CARBON PARTNERSHIP FACILITY: FY 2009 ANNUAL REPORT 1, 4 (2009), available at [http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/FCPF\\_FY09\\_Annual\\_Report\\_10-22-09.pdf](http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/FCPF_FY09_Annual_Report_10-22-09.pdf).

22. See SAUNDERS, *supra* note 2, at 4.

23. REDD Workshop, *supra* note 2, at 7.

24. See Mongabay.com, World Deforestation Rates, [http://www.mongabay.com/deforestation\\_rate.htm](http://www.mongabay.com/deforestation_rate.htm) (last visited Oct. 21, 2009).

25. Cf. World Resources Institute, Map of the World's Forests, [http://www.wri.org/image/view/10640/\\_original](http://www.wri.org/image/view/10640/_original) (last viewed May 6, 2009) (depicting the current state of the world's forests).

26. E.g., STERN, *supra* note 10, at 538.

27. Bali Action Plan, *supra* note 1 at 3; UNFCCC, Conference of the Parties Eleventh Session, Montréal, Can., Nov. 28–Dec. 10, 2005, *Report of the Conference of the Parties on its Eleventh Session*, ¶¶ 76–84, U.N. Doc. FCCC/CP/2005/5 (Mar. 30, 2006), available at <http://unfccc.int/resource/docs/2005/cop11/eng/05.pdf>.

28. See, e.g., John Vidal, *UN's Forest Protection Scheme at Risk from Organized Crime, Experts Warn*, THE GUARDIAN, Oct. 5, 2009, at 22, available at <http://www.guardian.co.uk/environment/2009/oct/05/un-forest-protection>; Gary LaMoshi, *Seeing REDD Over Deforestation*, ASIA TIMES, Dec. 11, 2007, available at [http://www.atimes.com/atimes/Southeast\\_Asia/IL11Ae01.html](http://www.atimes.com/atimes/Southeast_Asia/IL11Ae01.html); Rhett A. Butler, *REDD in Indonesia Could Evict Forest People from their Lands, Warns UN Committee*, MONGABAY.COM, Mar. 23, 2009, [http://news.mongabay.com/2009/0323-redd\\_indonesia.html](http://news.mongabay.com/2009/0323-redd_indonesia.html).

system.<sup>29</sup> Indeed, the countries with the highest rates of deforestation, and hence the prime candidates to supply credits in a REDD program, are among the world's most corrupt.<sup>30</sup> Using the classic definition of corruption as "misuse of public office for private gain,"<sup>31</sup> this Note will examine the incentives for developing country environment and forest officials to game the REDD system. This Note is particularly concerned with the potential for corruption in developing countries. REDD would entail a massive transfer of wealth, with significant ramifications for sustainable development. Corruption on the receiving end of those funds could deeply undercut their intended purpose. In emphasizing developing nation bureaucrats, however, we should not lose track of the role of government officials, interest groups, and firms from the North in influencing the corrupt motives of non-Annex I state officials.

The graft issues in REDD emerge both from perverse incentives in emissions offsets programs in general, which have become manifest in the Kyoto Protocol's Clean Development Mechanism (CDM), and also in the many inlets for corruption that exist in forestry sector governance. Perhaps for those reasons, less than 1 percent of CDM projects have involved reforestation or afforestation, while the CDM does not credit avoided deforestation.<sup>32</sup> A fledgling REDD regime with an explosive demand for REDD credits could amplify corrupt motives. Only in addressing the corruption issues can the theoretical benefits of REDD translate into practical improvements for the climate.

This Note approaches the problem of REDD corruption first by disaggregating and analyzing its component parts. Thus, Part I focuses on the CDM, highlighting concerns with the international market for emissions offsets and raising potential solutions to those issues. Part II examines the long history of corruption in forestry sector management and reviews the literature that grapples with the problem. Part III first demonstrates how legacy issues from the CDM and forestry could collide in a REDD system, and then makes suggestions for fashioning a REDD program that limits corruption. While

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29. Vidal, *supra* note 28 ("Alarm bells are ringing. It is simply too big to monitor. The potential for criminality is vast and has not been taken into account by the people who set it up.").

30. Nalin Kishor & Richard Damania, *Crime and Justice in the Garden of Eden: Improving Governance and Reducing Corruption in the Forestry Sector*, in *THE MANY FACES OF CORRUPTION: TRACKING VULNERABILITIES AT THE SECTOR LEVEL* 89, 90–91 (J. Edgardo Campos & Sanjay Pradhan eds., 2007).

31. See, e.g., Jakob Svensson, *Eight Questions about Corruption*, 3 J. OF ECON. PERSP. 19, 20 (2005).

32. UNEP Risoe CDM/JI Pipeline Analysis and Database, <http://www.cdmpipeline.org/cdm-projects-type.htm> (last updated Jan. 1, 2010) (last visited Feb. 1, 2010) [hereinafter UNEP Risoe Analysis]; see UNFCCC, Conference of the Parties Seventh Session, Marrakech, Morocco, Oct. 29–Nov. 10, 2001, *Report of the Conference of the Parties: Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol*, ¶ 7(a), U.N. Doc. FCCC/CP/2001/13/Add.2, 17/CP.7 (Jan. 21, 2002) [hereinafter Marrakech Accords], available at <http://www.unfccc.int/resource/docs/cop7/13a02.pdf>.

opportunities for graft abound in REDD, creating a broad-based system that leverages economies of scale, utilizes non-governmental organization (NGO) and international organization monitoring capacity, engages forest communities, and draws on Annex I technical support will limit incentives for corruption. Applying Annex I country anti-corruption laws to carbon markets, moreover, will further trim corruption's siphoning of REDD's climate change mitigating potential.

#### I. THE CDM AND THE DOWNSIDES OF THE EMISSIONS OFFSETS MARKET

The CDM, like REDD, was envisioned both as a flexible means to achieve compliance with Kyoto targets for Annex I countries and as an incentive for developing countries to enter into more carbon-friendly growth trajectories without being subject to emissions caps.<sup>33</sup> The CDM accepted its first project in December 2003—over a year before the Kyoto Protocol fully went in effect—and began issuing offset credits in October 2005.<sup>34</sup> Since then, it has become the “largest ever atmospheric pollution regulatory regime.”<sup>35</sup> The market was valued at €12 billion in 2007, and it will deliver an estimated 2.2 billion Certified Emissions Reduction credits (CERs)—which represent carbon dioxide and other greenhouse gas reductions undertaken by CDM project hosts—by the end of the first Kyoto compliance period in 2012.<sup>36</sup> The value of global CER purchases leapt 34 percent between 2006 and 2007, on vibrant demand,<sup>37</sup> and CER credits have become a virtual carbon currency. Moreover, the CDM has succeeded in engaging large emitting nations in the developing world, whose participation is critical for world-wide emission reductions, in the shift to carbon-friendly growth; it is in these countries where the majority of CDM projects have taken place.<sup>38</sup> On the other hand, it is unclear how much

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33. Kyoto Protocol to the United Nations Framework Convention on Climate Change, art. 12(2), Dec. 10, 1997 [hereinafter Kyoto Protocol], available at <http://unfccc.int/resource/docs/cop3/07a01.pdf>; Michael Wara, *Measuring the Clean Development Mechanism's Performance and Potential*, 55 UCLA L. REV. 1759, 1773 (2008).

34. Wara, *supra* note 33, at 1774–75; United Nations Framework Convention on Climate Change, Kyoto Protocol: Status of Ratification, [http://unfccc.int/kyoto\\_protocol/status\\_of\\_ratification/items/2613.php](http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php) (last visited Feb. 1, 2010).

35. MICHAEL W. WARA, FACT SHEET: MEASURING THE CLEAN DEVELOPMENT MECHANISM'S PERFORMANCE AND POTENTIAL (2006) (presented at Gordon Conference on Science and Technology Policy), available at <http://iis-db.stanford.edu/pubs/21243/Wara.GRC.pdf>.

36. Michael W. Wara & David G. Victor, *A Realistic Policy on International Carbon Offsets* (Program on Energy and Sustainable Development, Freeman Spogli Institute for International Studies, Stanford University Working Paper No. 74, 2008), available at [http://iis-db.stanford.edu/pubs/22157/WP74\\_final\\_final.pdf](http://iis-db.stanford.edu/pubs/22157/WP74_final_final.pdf).

37. KAREN CAPOOR & PHILLIPE AMBROSI, WORLD BANK, STATE AND TRENDS OF THE CARBON MARKET 2008 2 (2008), available at <http://siteresources.worldbank.org/NEWS/Resources/State&Trendsformatted06May10pm.pdf>.

38. Wara, *supra* note 33, at 1764. For most of the CDM's lifespan, Brazil, Mexico, India, and China have together accounted for over 70 percent of the CERs in the CDM pipeline. See UNEP Riseo Analysis, *supra* note 32.

the CDM has actually benefited the climate, a problem that will become clear as we examine its structure and implementation.

### A. *The CDM Process*

The CDM has a complex design meant to ensure genuine emissions reductions. The Kyoto parties, in the Marrakech Accords,<sup>39</sup> gave the CDM a curious command structure, creating a small administrative body with expansive power to oversee a largely decentralized and private system of enforcement. Sitting atop the structure is a ten-member rotating panel—the CDM Executive Board—charged with the final authority to approve projects and issue CER credits.<sup>40</sup> To pass muster, all projects must meet three cardinal requirements: (1) voluntary participation by the parties involved; (2) real and measurable mitigation of emissions; and (3) reductions that are additional to any that would have occurred in the absence of the project.<sup>41</sup> This third requirement, the additionality criterion, requires answering in the negative the question: “But for the financing offered by the CDM, would the contemplated emissions reductions occur?” Additionality demands complex predictive analysis and creates one of the largest stumbling blocks for the effective operation of CDM projects.<sup>42</sup>

The CDM process is a long “pipeline,” through which a project must travel from its conception to the generation of CERs.<sup>43</sup> The pipeline itself ideally would operate as a corruption-impeding device, with its length and many checks cutting down on opportunities for graft and obfuscation. At the pipeline’s head is the Project Design Document (PDD) requirement.<sup>44</sup> Before breaking ground, project hosts—either firms or governments in the developing world—must put forward a PDD to govern the scope of the project.<sup>45</sup> In addition to a general description of the project, the PDD must contain, *inter alia*, the methodology used to calculate the baseline level of emissions for the project site, an explanation of how the proposed activity would cut greenhouse gases from that business-as-usual scenario, the length, crediting period, and boundaries of the project, and an environmental impacts assessment.<sup>46</sup> Project designers are also required to publish the PDD online and solicit comments from local stakeholders.<sup>47</sup> A Designated Operational Entity (DOE)—an

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39. Marrakech Accords, *supra* note 32.

40. *Id.* ¶ 5, Draft decision -/CMP.1; UNFCCC: CDM Executive Board Members, <http://cdm.unfccc.int/EB/Members/index.html> (last visited Feb. 1, 2010).

41. Kyoto Protocol, *supra* note 33, art. 12(5).

42. CAPOOR & AMBROSI, *supra* note 37, at 36.

43. WARA, *supra* note 35.

44. CDM Rulebook, Baker & McKenzie, What is the Project Design Document (CDM-PDD)?, <http://cdmrulebook.org/PageId/405> (last visited Feb. 1, 2010).

45. *Id.*

46. *Id.*; Marrakech Accords, *supra* note 32, App’x. B at 43.

47. CDM Rulebook, *supra* note 44; CDM Rulebook, Baker & McKenzie, Stakeholders, <http://cdmrulebook.org/Pageid/72> (last viewed May 11, 2009).

independent verification firm pre-approved by the CDM Executive Board<sup>48</sup>—is required to review and comment on the PDD to ensure its adequate design.<sup>49</sup> The DOE presents its analysis in a validation report.<sup>50</sup> In addition, the Designated National Authority (DNA), which is usually the host country's environmental ministry, must give its stamp of approval.<sup>51</sup> The DNA approval letter authorizes the project host party to participate, and confirms that the project would enhance the sustainable development of the country.<sup>52</sup>

The project hosts then submit their PDD, validation report, and DNA letter of approval to the CDM Executive Board, which must make a decision whether to accept, and thereby register, the project.<sup>53</sup> Registration triggers the start of the project.<sup>54</sup> During the project period, a DOE<sup>55</sup> is required to independently monitor emissions levels, both periodically over the project lifespan and ex post, to ensure it achieves the desired reductions.<sup>56</sup> At the end of the project's lifecycle, the hosts must obtain a certification report from a DOE, confirming the project was conducted in accordance with its PDD and that it actually achieved the desired emissions reductions.<sup>57</sup> As a matter of course, the CDM Executive Board has fifteen days after the receipt of the certification report to issue CER credits corresponding to the reduced greenhouse gases.<sup>58</sup> A final check on corruption and wrongdoing is built into this last stage of the process. On request of either three members of the CDM Executive Board or any of the parties involved, the Board can initiate a review focused on whether "fraud, malfeasance or incompetence" of a DOE or one of the parties merits withholding CER credits.<sup>59</sup> Once issued, the CER credits can then be purchased and traded on the global market.<sup>60</sup> Without significant resources invested in the CDM Executive Board and centralized enforcement, the CDM

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48. Marrakech Accords, *supra* note 32, ¶ 20, at 31.

49. CDM Rulebook, Baker & McKenzie, Validation Report, <http://cdmrulebook.org/PageId/403> (last viewed May 11, 2009).

50. *Id.*

51. CDM Rulebook, Baker & McKenzie, Designated National Authority, <http://cdmrulebook.org/PageId/64> (last viewed May 11, 2009).

52. *Id.*

53. Marrakech Accords, *supra* note 32, ¶ 36, at 34.

54. CDM Rulebook, Baker & McKenzie, What is Registration?, <http://cdmrulebook.org/PageId/108> (last viewed May 11, 2009).

55. The rules mandate that a different DOE be used for each of the three project phases—validation, verification and certification—unless granted special permission by the CDM Executive Board. Marrakech Accords, *supra* note 32, ¶ 27(e), at 32.

56. Marrakech Accords, *supra* note 32, ¶ 60, at 39.

57. *Id.* ¶¶ 61–63, at 39–40.

58. *Id.* ¶ 65, at 40.

59. *Id.*

60. CDM Rulebook, Baker & McKenzie, Forwarding of CERs, <http://cdmrulebook.org/pageid/146> (last viewed May 11, 2009).

is designed to rely heavily on third-party help, in the form of DOEs, DNAs, and stakeholders, to ensure the quality of its projects.<sup>61</sup>

### B. *The CDM's Structural Flaws*

In spite of its growing use and great promise, the CDM has fallen victim to a number of structural flaws. For one, it creates perverse incentives to manipulate baselines in a way that undercuts the spirit of the additionality requirement.<sup>62</sup> Project hosts behaving strategically may actually increase emissions in the lead-up to a project.<sup>63</sup> The more a host can show to have emitted *ex ante*, the more credits it will be able to sell for reductions *ex post*. In this respect, while the CDM subsidizes emissions reductions, it can also prolong or accelerate the use of environmentally inefficient practices.<sup>64</sup> Highly potent greenhouse gases like HFC-23,<sup>65</sup> which is a refrigerant by-product largely eliminated in the developed world, are prone to this problem.<sup>66</sup> Each increment of reduced HFC-23 creates a comparatively enormous number of CERs, and the cost of abating HFC-23 is low.<sup>67</sup> Many firms that could have stopped emitting the gas a long time ago have found it extremely profitable to extend their emissions, earning a subsidy of €3.42 per kilogram to continue to produce and then capture HFC-23.<sup>68</sup> The bonanza created for suppliers of HFC-23 led these projects to account for 55 percent of the CER credits issued by the start of 2008.<sup>69</sup> The CDM Executive Board and CER credit purchasers soon recognized the HFC-23 problem, and the number of projects in the sector has since tailed considerably,<sup>70</sup> but it exposed the CDM's inability to control

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61. As this applies to DOEs, see, e.g., LAMBERT SCHNEIDER, ÖSKO-INSTITUT, IS THE CDM FULFILLING ITS ENVIRONMENTAL AND SUSTAINABLE DEVELOPMENT OBJECTIVES? AN EVALUATION OF THE CDM AND OPTIONS FOR IMPROVEMENT 20 (2007), available at [http://assets.panda.org/downloads/oeko\\_institut\\_2007\\_\\_\\_is\\_the\\_cdm\\_fulfilling\\_its\\_environmental\\_and\\_sustainable\\_developme.pdf](http://assets.panda.org/downloads/oeko_institut_2007___is_the_cdm_fulfilling_its_environmental_and_sustainable_developme.pdf) (report prepared for the World Wildlife Fund (WWF)) (“DOEs are regarded as the ‘extended arm’ of the CDM Executive Board.”). In the case of DNAs, see *id.* at 46 (“[T]he CDM Executive Board has clarified several times that it is not the task of the Board but that of the host country governments to assess whether CDM projects assist in achieving sustainable development.”). A vibrant and transparent stakeholder consultation likewise would have the effect of airing design flaws or secondary social and environmental impacts of projects that the CDM Executive Board may not otherwise be able to discover in its cursory project review.

62. Wara, *supra* note 33, at 1771–72.

63. See, e.g., WARA, *supra* note 35 (raising this issue in the context of HFC-23 emissions).

64. Cf. Wara, *supra* note 36, at 11–12 (arguing that the CDM can sometimes be a clearly inefficient means of obtaining emissions reductions versus other mitigation mechanisms, making continued emissions and capture of a greenhouse gas more profitable than total abatement).

65. Each ton of HFC-23 has the same global warming impact as 11,700 tons of CO<sub>2</sub>. Wara, *supra* note 33, at 1782.

66. *Id.*

67. *Id.* at 1784; SCHNEIDER, *supra* note 61, at 48.

68. Wara, *supra* note 33, at 1784.

69. *Id.* at 1779.

70. HFC-23's once large share of projects has steeply declined. Wara, *supra* note 36, at 12. The proportion of transacted CERs from clean energy projects, which are seen as safer bets for additional,

manipulation of its system.<sup>71</sup> The HFC-23 situation paints a dramatic example of a more general problem with the CDM:<sup>72</sup> it is possible to actually reward emitters for early accelerations in greenhouse gas production.

The perverse incentives displayed in the HFC-23 context do not merely drive the behavior of the private actors sponsoring industrial gas capture projects, but seep further into the behavior of government officials.<sup>73</sup> A choice not to regulate a greenhouse gas opens a flow of funds to the government in the form of taxes on CER revenue. The Chinese government responded to the surge in HFC-23 projects by levying a 65 percent tax on the proceeds from those credits, generating over \$2 billion earmarked for a national sustainable development fund.<sup>74</sup> While it has not been documented in the China case, such massive tax streams open tremendous temptations for official corruption.<sup>75</sup> At the higher end, top-level bureaucrats can simply siphon large portions of the tax as it enters the government.<sup>76</sup> At a lower level, functionaries can profit from accepting payments from firms to evade the tax.<sup>77</sup> The influx of graft opportunities from CDM projects thus makes command and control regulation less attractive to the bribe-taking official. The offsets market dissuades government from regulating in cases where it may be socially less costly to simply ban or cap emissions of the substance.

Where the domestic government has already imposed some top-down regulation, the CDM encounters a second structural problem. One of the CDM's bedrock principles is the voluntariness of project participation.<sup>78</sup> Project hosts compelled to act by forces external to the incentives offered by the CDM may get credit for cuts in greenhouse gas emissions they would have been forced to undertake anyway.<sup>79</sup> In China, which has been the site of the most CDM projects,<sup>80</sup> recent laws have focused on weaning the country from its deep reliance on coal for electricity generation, calling for investments in

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long-term emissions reductions, has increased from 14 percent in 2005 to 64 percent in 2007. CAPOOR & AMBROSI, *supra* note 37, at 29.

71. Wara, *supra* note 33, at 1789.

72. *Id.*

73. *Id.* at 1772.

74. *Id.* at 1788.

75. See, e.g., Tuan Minh Le, *Combating Corruption in Revenue Administration: An Overview*, in THE MANY FACES OF CORRUPTION: TRACKING VULNERABILITIES AT THE SECTOR LEVEL 335 (J. Edgardo Campos & Sanjay Pradhan eds., 2007) (developing country surveys show tax collection agencies as one of the most corrupt parts of government administration).

76. See Juan Carlos Zuleta et al., *Combating Corruption in Revenue Administration: The Case of VAT Refunds in Bolivia*, in THE MANY FACES OF CORRUPTION: TRACKING VULNERABILITIES AT THE SECTOR LEVEL 339, 341 tbl.10 (J. Edgardo Campos & Sanjay Pradhan eds., 2007) (listing the typologies of corrupt and evasive tax behavior).

77. *Id.*

78. Kyoto Protocol, *supra* note 33, art. 12(5).

79. Wara, *supra* note 33, at 1797.

80. China boasts a 62 percent share of the CERs already supplied to the market, and it is the host for 53 percent of the expected CERs in the pipeline for the first Kyoto commitment period. CAPOOR & AMBROSI, *supra* note 37, at 26.

renewables, nuclear energy, and natural gas.<sup>81</sup> Its Renewable Energy Law, passed in 2005, creates a feed-in tariff for renewable energy,<sup>82</sup> a fund dedicated to research and development of new clean energy projects,<sup>83</sup> and gives the government the authority to set a national target for the amount of power supplied by renewables.<sup>84</sup> The Chinese government has since issued a goal to generate 10 percent of the country's power supply from renewables in 2010, and 16 percent by 2020.<sup>85</sup> In spite of the government support for low carbon energy development, through 2007 nearly all new power projects involving these sources had applied for CER credits.<sup>86</sup> The reason lies in the CDM's project-specific review of additionality and voluntariness.<sup>87</sup> At the local level, most individual wind farms, hydroelectric dams, or natural gas plants can plausibly claim they are not cost-competitive against a coal alternative without CDM funds.<sup>88</sup> In the aggregate, however, the Chinese policy is to ensure more total green energy projects will go into operation than in the absence of regulation.<sup>89</sup> The project-specific analysis of the CDM can thus miss the forest for the trees.<sup>90</sup> While the use of funds from the developed world to subsidize the development of newer, cleaner energy production in China is laudable, the climate improvement of such action is uncertain—a firm in the developed world might continue to emit more than its capped level of greenhouse gases, while purchasing a reduction that possibly could have happened without the CDM.<sup>91</sup>

The CDM's struggles with additionality appear prominently and consistently in the small amount of empirical work done on the subject. One

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81. See, e.g., Wara, *supra* note 36, at 13; Keith Bradsher, *Green Power Takes Root in the Chinese Desert*, N.Y. TIMES, July 2, 2009, at B1, available at <http://www.nytimes.com/2009/07/03/business/energy-environment/03renew.html?em>.

82. The Law of the People's Republic of China on Renewable Energy, art 14 (promulgated by the Standing Comm. Nat'l People's Cong., Feb. 28, 2005, effective Jan. 1, 2006), translated in 29 BEIJING REV. 1 (2005).

83. *Id.* at art. 24.

84. *Id.* at art. 7.

85. BAKER & MCKENZIE ET AL., RELAW ASSIST: RENEWABLE ENERGY LAW IN CHINA – ISSUES PAPER 21 tbl.2 (2007), available at [http://www.bakernet.com/NR/rdonlyres/B06FB192-EF10-4304-B966-FBDF1A076A8C/0/relaw\\_issues\\_paper\\_jun07.pdf](http://www.bakernet.com/NR/rdonlyres/B06FB192-EF10-4304-B966-FBDF1A076A8C/0/relaw_issues_paper_jun07.pdf).

86. Wara, *supra* note 36, at 13 fig.2.

87. Wara, *supra* note 33, at 1796.

88. Wara, *supra* note 36, at 14. It can be very difficult at the individual project level to define and evaluate what would have happened as a result of existing policies and trends. See BARBARA HAYA, INTERNATIONAL RIVERS, FAILED MECHANISM: HOW THE CDM IS SUBSIDIZING HYDRO DEVELOPERS AND HARMING THE KYOTO PROTOCOL 6 (2007), available at [http://www.internationalrivers.org/files/Failed\\_Mechanism\\_3.pdf](http://www.internationalrivers.org/files/Failed_Mechanism_3.pdf).

89. Wara, *supra* note 36, at 14. For a deeper analysis of this concern in case of the Chinese hydropower sector (where a majority of new, large projects are seeking CDM funding even though there is no evidence that China's high baseline level of investment in hydro capacity is weakening), see HAYA, *supra* note 88, at 6.

90. See HAYA, *supra* note 88, at 6 (“[T]he underlying concept of testing for additionality on a project-by-project basis is untenable.”).

91. Wara, *supra* note 33, at 1797.

study of a range of CDM projects registered before July 2007 arrived at the conclusion that 40 percent had either “unlikely or questionable” additionality, even though the CDM is incrementally improving in spotting these issues.<sup>92</sup> It also cited a survey conducted of governments, NGOs, DOEs, and project developers involved in the CDM in which 71 percent of respondents agreed that “many CDM projects would also be implemented without registration under the CDM.”<sup>93</sup> The same survey showed that 86 percent of respondents thought, “in many cases, carbon revenues are the icing on the cake, but are not decisive for the investment decision.”<sup>94</sup> A separate study of fifty-two Indian projects revealed significant flaws in additionality practices, including a finding that only 33 percent of projects had evaluated the availability of sufficient investment capital in the absence of the CDM.<sup>95</sup> A 2007 NGO report on CDM hydropower projects concluded that the “great majority” are not additional,<sup>96</sup> a determination that is particularly troubling given that the researchers found that hydropower comprised 15 percent of expected annual CERs produced.<sup>97</sup>

The malleability of the additionality component has implications for corruption. Theoretically, the DOE, DNA, and public stakeholders consulted in preparation of a PDD would be watchdogs against overly advantageous baseline emissions calculations: a DOE validation report would provide rigorous analysis of the individual project’s assumptions; the DNA, before issuing a letter of approval, would ensure that a project actually furthered sustainable development of the country rather than simply tack onto existing government initiatives; and stakeholders would provide on-the-ground oversight.<sup>98</sup>

In reality, however, DOEs have engaged in a race to the bottom that has hindered independent review of projects.<sup>99</sup> The market for DOE services has become highly competitive, decreasing the revenue per project for DOEs and tipping the relative bargaining power in favor of project hosts.<sup>100</sup> Project hosts seeking to cut costs actively search for DOEs with lower fees and with reputations for making fewer critical comments in validation or verification.<sup>101</sup> Responding to concerns about DOE quality, the CDM Executive Board conducted spot checks of three DOEs in 2006, which uncovered disturbing

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92. SCHNEIDER, *supra* note 61, at 9.

93. *Id.* at 40.

94. *Id.*

95. AXEL MICHAELOWA & PALLAV PUROHIT, ADDITIONALITY DETERMINATION OF INDIAN CDM PROJECTS: CAN INDIAN CDM PROJECT DEVELOPERS OUTWIT THE CDM EXECUTIVE BOARD? 4 (2007) (internal quotation marks omitted), *available at* <http://www.no21.org/docs/Michaelowa-teripress-2007>.

96. HAYA, *supra* note 88, at 5.

97. *Id.* at 4.

98. *See supra* notes 43–61 and accompanying text.

99. SCHNEIDER, *supra* note 61, at 20.

100. *Id.*

101. *Id.* There are even reports of DOEs forming contracts with project developers in which final payment is contingent upon successful registration. *Id.*

failings and resulted in corrective actions against all three.<sup>102</sup> In September 2009, U.N. inspectors suspended the accreditation of the world's largest project verifier, SGS UK.<sup>103</sup> The company was unable to stand behind the quality of project verifications it had overseen, or the qualifications of some of its staff.<sup>104</sup> One study of ninety-three projects' validation processes found significant variation in DOEs' application of CDM standards.<sup>105</sup> Rather than policing corruption as the "extended arm" of the taxed and small CDM Executive Board, DOEs are instead beholden to project developers for business.<sup>106</sup> DOEs thus may do little to frustrate officials' corrupt ends.

The letter of approval required from the host government DNA also may facilitate corruption, since the government has the power to approve or bar the entities participating in the project.<sup>107</sup> As discussed above, the only benchmark for the DNA's decision is whether the project advances sustainable development.<sup>108</sup> In fact, while some developing country DNAs have promulgated sustainable development objectives for CDM projects, there is little evidence to show that the projects actually approved met many of those goals.<sup>109</sup> Further, without guidelines from the CDM Executive Board, DNAs compete to loosen standards to avoid losing valuable projects to other countries.<sup>110</sup> Since DNAs have nearly absolute discretion to accept or reject projects without reliance on hard rules of decision, they are especially susceptible to bribery to approve projects once the project developers select a site.<sup>111</sup>

Last, the stakeholder commenting provision of the CDM is often an empty letter.<sup>112</sup> Only 40 percent of PDDs, in one recent study, clearly showed the project hosts had invited all relevant stakeholders to comment, and many cases revealed shoddy efforts at advertising public comment events.<sup>113</sup> In fact, in a number of Indian PDDs only the local village administration had been solicited

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102. *Id.* at 24.

103. Danny Fortson, *Carbon-Trading Market Hit as UN Suspends Clean-Energy Auditor*, TIMES ONLINE, Sept. 13, 2009, available at [http://business.timesonline.co.uk/tol/business/industry\\_sectors/natural\\_resources/article6832259.ece](http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article6832259.ece).

104. *Id.*

105. SCHNEIDER, *supra* note 61, at 24–25.

106. *Id.*

107. *See supra* notes 51–52 and accompanying text.

108. *Id.* "Currently there is no dependable means for preventing the CDM from registering projects with serious environmental or social impacts." HAYA, *supra* note 88, at 7.

109. SCHNEIDER, *supra* note 61, at 46–48.

110. *See id.* at 47.

111. In situations in which an official is in charge of distributing a good to all those who meet certain qualifications, corruption may result. *See* SUSAN ROSE-ACKERMAN, CORRUPTION AND GOVERNMENT: CAUSES, CONSEQUENCES, AND REFORM 14–15 (1999). Corruption becomes even more likely as the level of discretion to the controlling official increases and the alternative options to firms or individuals decrease. *Id.* at 15.

112. SCHNEIDER, *supra* note 61, at 51–52.

113. *Id.* at 52.

to weigh in on proposed projects.<sup>114</sup> As is the case with DOEs and DNAs, the public stakeholder commenting measures may in reality do little to prevent abuse of the CDM.

The limited oversight capacity of the CDM Executive Board further augments deficits in real enforcement by the DOEs, DNAs, and stakeholders. Satisfying the large demand for CERs often comes at cross-purposes with the lengthy pipeline system of the CDM meant to curb abuses. Lex de Longe, the chair of the CDM Executive Board, noted this tension upon taking office, saying that the Board's extensive review of individual projects has hampered its ability to satisfy the demand for credits and to streamline and extend the CDM's reach.<sup>115</sup> Lack of sufficient initial funding has made this task particularly onerous.<sup>116</sup> Critically, in 2005, the Kyoto parties authorized the CDM Executive Board to collect a portion of CER proceeds to cover administrative expenses, allowing it to set up a Registration and Issuance Team to flag problems with project documents for the Executive Board.<sup>117</sup> Since then, the Executive Board's rate of review and rejection of registration requests has gone up significantly.<sup>118</sup> Still, it is unclear whether the improvements are enough. At its current pace, the CDM is only approving credits at 1 to 2 percent of the rate necessary to convert all the projects in the pipeline to CERs in time for the end of the Kyoto first commitment period.<sup>119</sup> Under pressure from both host and purchasing countries to issue more CERs, it is difficult for the CDM Executive Board to stick to all of its good governance objectives. For instance, the Board does not yet have a process to screen members' conflicts of interest with parties involved in projects.<sup>120</sup>

These issues raise major doubts that the CDM is actually delivering emissions reductions as advertised.<sup>121</sup> Some commentators have proposed scrapping the CDM altogether once the first commitment period of the Kyoto Protocol expires in 2012.<sup>122</sup> Others have called for limiting its application, instead creating a global carbon fund to invest in sustainable development

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114. *Id.*

115. Press Release, UNFCCC Secretariat, International Emissions Offsetting Under Kyoto Protocol has Critical Role in Response to Climate Change, Says New Chair of CDM Executive Board (Feb. 11, 2009) [hereinafter de Jonge Press Release], available at [http://unfccc.int/files/press/releases/application/pdf/090211\\_press\\_release\\_cdm\\_eb.pdf](http://unfccc.int/files/press/releases/application/pdf/090211_press_release_cdm_eb.pdf).

116. See SCHNEIDER, *supra* note 61, at 22–23.

117. *Id.*

118. *Id.*

119. Wara, *supra* note 36, at 16.

120. Nathaniel Gronewald, *Secretive U.N. Board Awards Lucrative Credits with Few Rules Barring Conflicts*, CLIMATEWIRE, April 7, 2009, <http://www.eenews.net/climatewire/2009/04/07/archive/1?terms=secretive+UN+Board> (also published on the website of N.Y. TIMES at <http://www.nytimes.com/cwire/2009/04/07/07climatewire-secretive-un-board-awards-lucrative-credits-10458.html?pagewanted=1>).

121. Wara, *supra* note 36, at 16.

122. *E.g.*, INTERNATIONAL RIVERS, RIP-OFFSETS: THE FAILURE OF THE KYOTO PROTOCOL'S CLEAN DEVELOPMENT MECHANISM (2008), available at [http://www.internationalrivers.org/files/CDM\\_factsheet\\_low-rez.pdf](http://www.internationalrivers.org/files/CDM_factsheet_low-rez.pdf).

projects.<sup>123</sup> While the Copenhagen Accord did not mention the CDM by name, it reiterated the value of market-based approaches to reducing emissions in developing countries.<sup>124</sup> Most likely, the CDM will continue after Kyoto, but with some modifications.<sup>125</sup> The suggested changes include exploiting economies of scale by encouraging sector-wide rather than small-scale projects, forming what is called a “programmatic CDM.”<sup>126</sup> Another proposal is to streamline accounting of baseline emissions scenarios, adopting standard but conservative estimates in cases where doubt exists about the size of future emissions.<sup>127</sup> In order to limit the principal-agent problem posed by DOEs beholden to project hosts rather than to the CDM Executive Board that deputized them, DOEs could work directly for the Executive Board.<sup>128</sup> Under this plan, DOEs would be paid out of funds collected in a small levy on CER credits, rather than by the party establishing the project.<sup>129</sup>

While the CDM Executive Board has voiced support for some of these reforms,<sup>130</sup> it has not tried them yet on a large scale. Market signals may ultimately be the driver of change. There are already signs of price discrimination among CER credits based on the perceived rigor and reliability of the reductions, which has been boosted by certification efforts like the Gold Standard.<sup>131</sup> The future treaty parties with the greatest purchasing power, like the E.U. and the United States, could also backstop the CDM Executive Board in its quality assurance work. The American Clean Energy and Security Act, for instance, contemplates an international offset integrity review process led by EPA, in consultation with the State Department and U.S. Agency for International Development, that would consider sectoral as well as more limited projects.<sup>132</sup>

The CDM is a cautionary tale for the development of REDD. On the one hand, the CDM demonstrates that carbon finance is a powerful incentive for Annex I and developing countries to collaborate to mitigate climate change. On the other hand, its system for rewarding offset credits and policing the integrity of projects is weak. Improving the CDM concept to address the latter issue without stanching the engagement it has created is a difficult but necessary goal for reformers. REDD system designers will face this same balancing problem in ensuring widespread, valid reductions in deforestation emissions. The progress and pitfalls the CDM has encountered so far, and the efforts to reform it for the future, offer valuable lessons for REDD design.

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123. Wara, *supra* note 33, at 1801.

124. Copenhagen Accord, *supra* note 1, ¶ 7, at 2–3.

125. See SCHNEIDER, *supra* note 61, at 72.

126. CAPOOR & AMBROSI, *supra* note 37, at 38; Wara, *supra* note 36, at 15.

127. CAPOOR & AMBROSI, *supra* note 37, at 37.

128. SCHNEIDER, *supra* note 61, at 57.

129. *Id.*

130. CAPOOR & AMBROSI, *supra* note 37, at 38; de Jonge Press Release, *supra* note 115.

131. CAPOOR & AMBROSI, *supra* note 37, at 33, 36.

132. American Clean Energy and Security Act, *supra* note 18, §§ 743, 754(d).

## II. THE FORESTRY SECTOR'S HISTORY OF CORRUPTION

The critical questions about CDM abuses become much thornier in the context of forestry management; perhaps for this reason, the CDM has had virtually no forestry sector projects to date.<sup>133</sup> Corruption in the forestry sector occurs on a large scale and across a wide diversity of countries.<sup>134</sup> Corrupt forestry practices are driven by three forms of illicit demands on forest resources. Agricultural expansion is the main source of deforestation globally as it requires the steady clearing of woodlands for farmlands.<sup>135</sup> Historically, deforestation rates have been high in the Amazon, where livestock ranchers transform rainforest into pasture.<sup>136</sup> A second impetus for forestry corruption is illegal logging—when timber harvesters cut wood beyond the geographic bounds of the concession<sup>137</sup> they have been granted by the government, in excess of the agreed-upon rate, or without a formal concession at all.<sup>138</sup> Illegal logging is estimated to be a \$10 billion per year black market industry, and the most serious culprit of deforestation in East Asia.<sup>139</sup> In 1997, for example, the Cambodian government only collected revenue on 10 percent of the country's estimated log production.<sup>140</sup> Over half the timber harvested each year between 2003 and 2006 in Indonesia was illegal.<sup>141</sup> A third cause is the demand for fuel wood in countries with few other energy options for basic home use.<sup>142</sup> This strain on forests is especially a problem in the tropical dry forests of Africa and Asia.<sup>143</sup> An estimated 735 million people worldwide rely on forests to meet

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133. UNEP Risoe Analysis, *supra* note 32.

134. Kishor & Damania, *supra* note 30, at 89, 91.

135. THE WORLD BANK, THE FOREST SECTOR: A WORLD BANK POLICY PAPER 31 (1991); REDD Workshop, *supra* note 2, at 10–11.

136. THE WORLD BANK, *supra* note 135, at 31.

137. “Forest concessions are a system of awarding harvesting rights to individuals, private companies and/or communities who assume the risk and responsibility of forest resources exploitation and/or management.” U.S. Forest Serv. International Programs, Concession Management, <http://www.fs.fed.us/global/aboutus/policy/tt/concession.htm> (last visited Jan. 30, 2010). Traditionally, concessions have been the primary method for securing rights to harvest forest areas in developed countries, as well as in a number of developing states. John A. Gray, *Forest Concessions: Experience and Lessons from Countries Around the World* (2000) (presented at the IUFRO International Symposium in Brazil), available at [http://www.fs.fed.us/global/aboutus/policy/tt/reports/john\\_gray2.doc](http://www.fs.fed.us/global/aboutus/policy/tt/reports/john_gray2.doc).

138. ARNOLDO CONTRERAS-HERMOSILLA, WORLD BANK INSTITUTE, LAW AND COMPLIANCE IN THE FORESTRY SECTOR: AN OVERVIEW 6 (2002), available at <http://siteresources.worldbank.org/WBI/Resources/wbi37205.pdf>; DEBRA CALLISTER, CORRUPT AND ILLEGAL ACTIVITIES IN THE FORESTRY SECTOR: CURRENT UNDERSTANDINGS, AND IMPLICATIONS FOR WORLD BANK FOREST POLICY 7 (1999), available at <http://siteresources.worldbank.org/EXTFORESTS/Resources/985784-1217874560960/Callister.pdf>.

139. THE WORLD BANK, *supra* note 135, at 31; Kishor & Damania, *supra* note 30, at 96 (Box 3.4).

140. CONTRERAS-HERMOSILLA, *supra* note 138, at 1.

141. HUMAN RIGHTS WATCH, ‘WILD MONEY’: THE HUMAN RIGHTS CONSEQUENCES OF ILLEGAL LOGGING AND CORRUPTION IN INDONESIA’S FORESTRY SECTOR 16 (2009), available at [http://www.hrw.org/sites/default/files/reports/indonesia1209webwcover\\_0.pdf](http://www.hrw.org/sites/default/files/reports/indonesia1209webwcover_0.pdf).

142. Kishor & Damania, *supra* note 30, at 98.

143. THE WORLD BANK, *supra* note 135, at 33.

their basic needs.<sup>144</sup> Often, forest abuse is sustained by a complex interaction between these three factors as well as the unintended consequences of more legitimate actions. For instance, the logging operations necessary to exploit either legal or corrupt concessions require roads, laborers, and new towns and processing centers at the woods' edge.<sup>145</sup> These developments erode once-remote forests around the concession, and make for more economically viable felling of neighboring forested areas for timber, fuel, or agricultural use.<sup>146</sup> All three factors create an opening for official corruption.<sup>147</sup> A Human Rights Watch study of forestry corruption in Indonesia found the sector's ingrained system of graft fueled further illegality by forest users and agencies.<sup>148</sup> Timber companies forced to pay bribes to forest agents to gain concessions often felt compelled to recoup those outlays through tax evasion or harvesting beyond their concession boundaries.<sup>149</sup>

For a number of reasons, corruption thrives especially well in the forestry sector. For one, forest regions tend to be remote and sparsely populated.<sup>150</sup> As such, illegal practices and bureaucratic corruption can easily go unobserved by the public, the press, or the honest elements of forest agencies.<sup>151</sup> Indeed, logs are largely fungible commodities within tree species, making it difficult to distinguish legally and illegally harvested wood. This is especially true as lumber travels through its increasingly global production chain, where simply crossing borders—from the harvesting to the processing country, for instance—is enough to launder the good.<sup>152</sup> It also means the long supply chains for harvesting, processing, and transporting timber pass through a number of government officials who can demand payment under the table. Additionally, the seclusion and vastness of woodlands in forest-rich but wealth-poor states poses a challenge in cataloguing forest stocks to determine baseline density levels.<sup>153</sup> This in turn makes spotting over-harvesting a difficult chore until the activity becomes overwhelmingly obvious and entrenched.<sup>154</sup>

Enforcement is further complicated by weakness in forest agency capacity. Forest agencies are typically understaffed and underfunded.<sup>155</sup> Salaries tend not to be performance-based and are often low enough to require forest agents to

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144. SAUNDERS, *supra*, note 1, at 7.

145. THE WORLD BANK, *supra* note 135, at 32–33; REDD Workshop, *supra* note 2, at 11.

146. *Id.*

147. See CONTRERAS-HERMOSILLA, *supra* note 138, at 16 (“Laws that are too complex and difficult to understand, require complicated and expensive procedures or abrupt reorientation of institutional or social behaviour . . . open opportunities for corruption and other illegal activities.”).

148. HUMAN RIGHTS WATCH, *supra* note 141, at 22.

149. *Id.* at 26.

150. *E.g.*, CONTRERAS-HERMOSILLA, *supra* note 138, at 10.

151. *Id.*

152. See, *e.g.*, Kishor & Damania, *supra* note 30, at 96.

153. CONTRERAS-HERMOSILLA, *supra* note 138, at 10.

154. See, *e.g.*, *id.* at 10.

155. *Id.* at 10–11; Callister, *supra* note 138, at 15.

seek supplemental income.<sup>156</sup> Resource shortages have even forced some forest agencies to rely on the concessionaires they are monitoring for transport and support in oversight activities.<sup>157</sup> The timber industry, moreover, may have large clout and close ties to top-level forestry officials.<sup>158</sup> Since forest agents in the field tend to be few in number and operate far from headquarters, they often hold great discretion with minimal oversight.<sup>159</sup> Complex regulations and permits further motivate firms to work around the legitimate system, creating room for bribe taking.<sup>160</sup>

In addition, forest management involves a difficult balancing act between conservation—either for permanent protection, as in national parks, or to enhance long-term timber harvests, like in concessions—and swift exploitation. Immediate private gains lie in exploiting forest resources, while the benefit of conservation is diffuse.<sup>161</sup> Too often, countries design concessions solely around timber production, without including protections for non-extractive forest values.<sup>162</sup> Concessions and forest preserves also rarely take into account indigenous peoples' rights and local communities' needs, and property rights in forests are seldom clear.<sup>163</sup> Approximately one-third of the Brazilian Amazon has uncertain ownership status.<sup>164</sup> Finally, there is a huge global demand for wood products, a trillion-dollar industry<sup>165</sup> that creates relentless pressure to harvest beyond designated areas.

In sum, corruption in the forestry sector can surface in all four of the major categories of graft enumerated by Professor Susan Rose-Ackerman<sup>166</sup>: It can be used to clear the market in the allocation of a scarce and valuable right to use forests, to motivate underpaid and overworked officials, to speed or circumvent the issuance of required approvals and permits, and to facilitate lucrative and illegal business activity.<sup>167</sup> The structural challenges to effective

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156. John A. Gray, *Forest Concession Policies and Revenue Systems: Country Experience and Policy Changes for Sustainable Tropical Forestry* 26 (World Bank Technical Paper NO. 522, 2002), available at [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2002/07/09/000094946\\_02062204051575/Rendered/PDF/multi0page.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2002/07/09/000094946_02062204051575/Rendered/PDF/multi0page.pdf).

157. *Id.* at 25–26.

158. Callister, *supra* note 138, at 15; see Kishor & Damania, *supra* note 30, at 97.

159. CONTRERAS-HERMOSILLA, *supra* note 138, at 10–11.

160. *Id.* at 11; Callister, *supra* note 138, at 14.

161. Kishor & Damania, *supra* note 30, at 93.

162. Gray, *supra* note 156, at 20–21.

163. See, e.g., DUTSCHKE & WOLF, *supra* note 5, at 8; CONTRERAS-HERMOSILLA, *supra* note 138, at 10; THE WORLD BANK, *supra* note 135, at 35; Alexei Barrioneuvo, *Brazil Aims to Prevent Land Grabs in Amazon*, N.Y. TIMES, Dec. 26, 2009, available at <http://www.nytimes.com/2009/12/27/world/americas/27brazil.html?ref=global-home>.

164. Dutschke & Wolf, *supra* note 5, at 8.

165. ENVIRONMENTAL INVESTIGATION AGENCY, DEMANDING DEFORESTATION: WHAT LESSONS CAN ILLEGAL LOGGING AND INTERNATIONAL TIMBER TRADE POLICY TEACH US FOR EFFECTIVELY REDUCING EMISSIONS FROM DEFORESTATION? 2 (2008), available at <http://www.eia-international.org/cgi/reports/reports.cgi?t=template&a=175>.

166. See ROSE-ACKERMAN, *supra* note 111, at 9–10.

167. See *id.*

forestry regulation tend to balance in favor of extensive corruption.<sup>168</sup> Significant discretion and power given to forestry officials, in the absence of meaningful accountability or transparency mechanisms, breeds graft.

There are an abundance of proposed solutions to these problems, which I believe divide roughly into two major categories. One group of corruption-curbing strategies focuses on limiting developing country officials' corrupt motives. First under that heading is a set of general anti-corruption approaches, like structuring concessions so as to reward efficient cutting and conservation, adopting rigorously independent bidding practices for concession allotments,<sup>169</sup> and beefing up the pay, training, and accountability of forest agency officials.<sup>170</sup> A second check on forest agency corruption is market discipline. A prime example, which can be inserted as a requirement in forestry laws, is international certification and monitoring.<sup>171</sup> The Forest Stewardship Council, one of the most successful and respected certification groups, has alone certified more than 7 percent of the world's productive forests.<sup>172</sup> The Forest Stewardship Council has developed specific standards through an ongoing consultative process with a variety of stakeholders.<sup>173</sup> Accredited certification agents monitor participating concessionaires to ensure they follow best practices.<sup>174</sup> A third set of reforms increases public oversight of officials' actions, both before and after awarding the concession. Before the concession grant, a transparency and accountability strategy might incorporate forest communities and indigenous groups as cooperative stakeholders by formalizing ownership, usufructuary, or profit rights in forest uses.<sup>175</sup> In the summer of 2009, for example, Brazil passed a new law attempting to settle and record land claims in the Amazon.<sup>176</sup> After the grant, laws could empower the public and NGOs with the chance to monitor and report on concessionaires' and forest officials' illicit practices to the government.<sup>177</sup> At the behest of the World Bank, Cameroon enabled a forest-preservation NGO to work in concert with its

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168. See Kishor & Damania, *supra* note 30, at 110 n.4. A basic formulation of the factors that fuel corruption is Professor Robert Klitgaard's formula, "M (monopoly) + D (discretion) – A (accountability) – T (transparency) = C (corruption)." *Id.*

169. See Gray, *supra* note 156, at 20–23.

170. CONTRERAS-HERMOSILLA, *supra* note 138, at 10.

171. See Gray, *supra* note 156, at 26.

172. Forest Stewardship Council: Facts and Figures, <http://www.fsc.org/> (follow "About FSC" hyperlink; then follow "Facts and Figures" hyperlink) (last visited Jan. 17, 2010).

173. Benjamin Cashore et al., *Revising Theories of Nonstate Market-Driven (NSMD) Governance: Lessons from the Finnish Forest Certification Experience*, 7 GLOBAL ENVTL. POL. 1, 4 (2007); Forest Stewardship Council: Principles and Criteria for Responsible Forest Management, <http://www.fsc.org/pc.html> (last visited Feb. 1, 2010).

174. Forest Stewardship Council: Credible Certification, <http://www.fsc.org/accreditation.html?&L=518> (last visited Feb. 1, 2010).

175. THE WORLD BANK, *supra* note 135, at 46–47.

176. Paulo Cabral, *Amazon Land Law Debate Heats Up*, BBC, Sept. 7, 2009, available at <http://news.bbc.co.uk/2/hi/8220519.stm>; Barrioneuvo, *supra* note 163.

177. CONTRERAS-HERMOSILLA, *supra* note 138, at 21–22.

national forest agency to protect timber resources.<sup>178</sup> The initiative increased enforcement actions against illegal loggers and generated greater public awareness of the problem.<sup>179</sup> More expansive local-empowerment solutions have been tried as well, including devolving management responsibility of national forests to the village level.<sup>180</sup> In Brazil, indigenous groups and forest communities have acted on their own initiative to defend their borders from deforestation.<sup>181</sup> Finally, modern satellite and remote sensing technological advances can vastly improve monitoring of even far-flung forests.<sup>182</sup> The state of the art in satellite imaging technology is beyond the reach of most developing nation forest agencies, but Brazil and India, for example, have already adopted less refined systems still capable of capturing changes in forest cover across their territories.<sup>183</sup>

The second group of strategies centers on reducing demand for corruptly obtained wood products. There are some promising private sector initiatives, as well as soft and hard law efforts, to break the demand for illegal timber and to encourage fair dealing in the concessions process. On the private sector front, some prominent companies have begun investigating and cleaning up their wood products supply chains.<sup>184</sup> Regional Forest Law Enforcement and Governance (FLEG) groups are soft law instruments of growing importance.<sup>185</sup> FLEGs bring together high-level government officials from both producer and importer states, along with NGOs and international organizations, to fight illegal forest activities and curb corruption.<sup>186</sup> The E.U. has taken the lead in the FLEG process, publishing a Forest Law Enforcement, Governance and Trade Action Plan in 2003.<sup>187</sup> The Action Plan empowers the E.U. to negotiate Voluntary Partnership Agreements with producer countries that would provide aid for forest governance initiatives and require licensing of all wood bound for

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178. SAUNDERS, *supra* note 1, at 15.

179. *Id.*

180. For a report on how this strategy has met with some success in Tanzania, see Liz Alden Wiley & Peter A. Dewees, *From Users to Custodians: Changing Relations Between People and the State in Forest Management in Tanzania* (World Bank, Policy, Research working paper no. WPS 2569, 2001), available at [http://econ.worldbank.org/external/default/main?pagePK=64165259&piPK=64165421&menuPK=64166093&theSitePK=469372&entityID=000094946\\_01032905305499](http://econ.worldbank.org/external/default/main?pagePK=64165259&piPK=64165421&menuPK=64166093&theSitePK=469372&entityID=000094946_01032905305499). On the other hand, experience in Indonesia shows that devolving power to the local level can simply shift rather than reduce graft when the process is not accompanied by an increase in the accountability of officials in control of forest resources and their proceeds. HUMAN RIGHTS WATCH, *supra* note 141, at 12.

181. Nepstad, *supra* note 11, at 1350.

182. REDD Workshop, *supra* note 2, at 13.

183. *Id.* at 20.

184. For example, the World Wildlife Fund and IKEA have joined to develop chain of custody tracking for IKEA's wood supplies. Kishor & Damania, *supra* note 30, at 100.

185. *See id.* at 107.

186. *Id.*

187. *Communication from the Commission to the Council and the European Parliament: Forest Law Enforcement, Governance and Trade (FLEGT), Proposal for an EU Action Plan*, COM (2003) 251 final (May 21, 2003).

the E.U. to ensure it is legally cut.<sup>188</sup> Negotiations are underway with several developing countries under the banner of the initiative.<sup>189</sup>

In the way of hard law, in 2008 the U.S. Congress passed an important amendment to the 100-year old Lacey Act, which prevents the import of rare or endangered animal species.<sup>190</sup> The amendment broadens the law to cover illegally obtained plants and plant products, including wood and many items made from wood.<sup>191</sup> To enter the United States, regulated goods now need to have detailed declarations showing their origins and composition.<sup>192</sup> The U.S. government has the authority to prosecute those found to be selling, transporting, or purchasing products made from illegally harvested timber.<sup>193</sup> The Lacey Act also criminalizes failure to act against illegal imports, making culpable those who knew, or should have known, about the violation.<sup>194</sup> It puts teeth behind its restrictions, assigning criminal penalties of up to \$20,000 or five years in jail for each offense.<sup>195</sup> The U.S. Department of Agriculture is in the early stages of its phased-in enforcement of the law,<sup>196</sup> but NGOs and governments concerned with deforestation have already widely praised the measure.<sup>197</sup> The amendments have the potential to make forest crime more costly, reducing the rents generated by illicit activity bolstered by corruption. While the E.U. does not have a similar law, at least one report has found that the United States' passage of the Lacey Act amendments has energized the E.U.'s bilateral Voluntary Partnership Agreement negotiations.<sup>198</sup> The longtime struggle against corruption in the forestry sector is at once sobering for REDD's prospects, insofar as it reveals deep structural challenges REDD must confront, but it is also a well-tested and fertile source from which to glean system designs capable of overcoming the problem of corruption.

### III. REDD: PROCESS, PROBLEMS, AND SUGGESTED DESIGN

In treating the corrupt influences REDD may inherit from the CDM and the forestry sector, this Part will first sketch the likely shape of a REDD system, then outline the most troubling inlets for corruption within it, and last propose several solutions targeted at eliminating the openings for graft.

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188. SAUNDERS, *supra* note 1, at 17.

189. *Id.* at 18.

190. 16 U.S.C. §§ 3371–3378 (2006).

191. *Id.* § 3371(f); Implementation of Revised Lacey Act Provisions, 73 Fed. Reg. 58,925, 58,926 (Oct. 8, 2008).

192. 73 Fed. Reg. 58,925.

193. 16 U.S.C. §§ 3372–3373; ENVTL. INVESTIGATION AGENCY, EARLY IMPACTS OF THE 2008 LACEY ACT PLANT AMENDMENTS 1 (2008), available at <http://www.illegal-logging.info/uploads/Laceyearlyimpactsmemo.pdf>.

194. 16 U.S.C. §§ 3373(a)(1), (d)(2).

195. *Id.* § 3373(d)(1)(B).

196. Implementation of Revised Lacey Act Provisions, 74 Fed. Reg. 5911, 5911–12 (Feb. 3, 2009).

197. See, e.g., ENVTL. INVESTIGATION AGENCY, *supra* note 193, at 1–2.

198. See *id.* at 1.

A. *The Design of a REDD System*

A major hurdle to anticipating and addressing the potential for corruption in REDD is that there has yet to be an indication of the details, or even a consensus proposal, for the system's design. While there were early signs of progress on a REDD agreement at Copenhagen,<sup>199</sup> draft language never hardened into a binding document.<sup>200</sup> The last publicly-available iteration of the negotiating text left many key details unsettled and in brackets.<sup>201</sup> Critically, the proposed accord left open the issue of whether it would credit only national-level or also subnational REDD projects.<sup>202</sup> On one end of the spectrum, REDD could follow the CDM in limiting itself to localized, individual projects.<sup>203</sup> On the other side is a national baseline approach, in which each participating developing country determines its nationwide baseline rate of deforestation, from which it can earn the right to sell credits for the amount it improves on the business as usual model.<sup>204</sup> While we have seen a pushback in the CDM context against small-bore projects in favor of broader sectoral treatment,<sup>205</sup> the projects approach may not be eliminated completely to create a national baseline system for REDD. In 2007, 18 percent of the \$330 million private voluntary market in emissions reductions was made up of forestry-related projects.<sup>206</sup> The unusual alliance of conservation groups and private sector actors already engaged in these voluntary forestry projects has an interest in maintaining at least some CDM-like programs.<sup>207</sup>

Given that policy reality, a hybrid system will most likely emerge that combines aspects of different proposals.<sup>208</sup> One such option gaining attention is a "nested" model, which allows participants simultaneously to cut deforestation from projected countrywide levels and to host private sector projects.<sup>209</sup> In addition to market returns for REDD credits, there would likely be general

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199. See Elisabeth Rosenthal, *Climate Talks Near Deal to Save Forests*, N.Y. TIMES, Dec. 15, 2009.

200. UNFCCC Policy Approaches and Positive Incentives on Issues Relating to REDD, FCCC/AWGLCA/2009/L.7/Add.6, Dec. 15, 2009 (Draft Decision) [hereinafter REDD Copenhagen Draft], available at <http://unfccc.int/resource/docs/2009/awglca8/eng/107a06.pdf>; Chris Lang, *What Came out of Copenhagen on REDD?*, REDD MONITOR, Dec. 22, 2009, <http://www.redd-monitor.org/2009/12/22/what-came-out-of-copenhagen-on-redd/>.

201. See REDD Copenhagen Draft, *supra* note 200.

202. See *id.*, ¶ 5, at 3.

203. Arild Angelsen et al., Ctr. for Int'l Forestry Research, *What is the Right Scale for REDD?*, in MOVING AHEAD WITH REDD: ISSUES, OPTIONS AND IMPLICATIONS 31, 32–33 (Arild Angelsen, ed., 2008), available at [http://www.cifor.cgiar.org/publications/pdf\\_files/Books/BAngelsen0801.pdf](http://www.cifor.cgiar.org/publications/pdf_files/Books/BAngelsen0801.pdf).

204. *Id.* at 33–34.

205. See *supra* Part II.B.

206. Angelsen et al., *supra* note 203, at 31, 33.

207. Cf. SAUNDERS, *supra* note 2, at 6 (noting that NGOs have declared a preference for project-based approaches because of difficult governance issues in some REDD host countries); Angelsen et al., *supra* note 203, at 33.

208. SAUNDERS, *supra* note 2, at 6.

209. Angelsen et al., *supra* note 203, at 34.

foreign aid, either from individual developed states or in the form of a consolidated global fund, for technical improvements in REDD capacity.<sup>210</sup> The last draft negotiating text in Copenhagen registered support for a phased implementation of developing parties' REDD programs.<sup>211</sup> Countries would first need to elaborate strategic plans for forest conservation at the national level, then build capacity and establish credible pilot projects before finally being allowed to implement national or subnational creditable activities.<sup>212</sup> The phased model resembles the system currently in operation in the World Bank's Forest Carbon Partnership Facility.<sup>213</sup> While I will assume in my REDD analysis that follows that this compromise approach will prevail, in any system there will be significant opportunities for corruption.

*B. Likely Sources of Corruption in REDD*

There are three principal areas in the REDD process in which corruption is likely to emerge: first, in setting baseline levels; second, in reconciling the accounting between project and national credits in the "nested" system; and third, in long-term monitoring and enforcement of REDD initiatives. The incentives for officials to tamper with all three of these processes, moreover, could only grow as REDD expands.

The first place for corruption to enter the system is in the setting of baselines. Setting baselines for deforestation based on historical patterns is a difficult business, as a given country's deforestation rates may change significantly over time.<sup>214</sup> Further, determining what factor to use to craft baselines—a country's projected future deforestation levels, its past forest loss, or the global average deforestation rate, for example—and how stringently to impose them, is a major bone of contention in international negotiations.<sup>215</sup> No matter the method on which diplomats settle, corrupt officials will have motivation to exploit the difficulties in setting baselines for a REDD program. In a problem reminiscent of the HFC-23 debacle,<sup>216</sup> there are built-in incentives to increase deforestation in the run-up to the start date of the program commitment period. The higher the level of baseline deforestation, the

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210. See *id.* See also *supra* Part I for a discussion of proposals to provide funding for REDD activities.

211. REDD Copenhagen Draft, *supra* note 200, ¶ 7, at 4.

212. *Id.*

213. See WORLD BANK, *supra* note 21, at 1. The Forest Carbon Partnership Facility divides between the Readiness Mechanism, which helps developing countries establish the wherewithal to host projects, and a Carbon Finance Mechanism, which allows countries deemed ready host REDD projects access to carbon finance. *Id.*

214. Arild Angelsen, Ctr. for Int'l Forestry Research, *How do we set the Reference Levels for REDD Payments?*, in MOVING AHEAD WITH REDD: ISSUES, OPTIONS AND IMPLICATIONS 53, 53–64, 55–56 (Arild Angelsen, ed., 2008), available at [http://www.cifor.cgiar.org/publications/pdf\\_files/Books/BAngelsen0801.pdf](http://www.cifor.cgiar.org/publications/pdf_files/Books/BAngelsen0801.pdf).

215. *Id.* at 56–58.

216. See *supra* notes 65–72 and accompanying text.

greater the store of potential REDD credits that will be available. Both private sector project sponsors and national governments, then, stand to gain from expanding deforestation in anticipation of the REDD start date to open the greatest wedge from which to gain future credits.<sup>217</sup> The corrupt official could solicit kickbacks from loggers to harvest future protected areas, and then obtain bribes to allow REDD project developers to use those diminished woodlands for a REDD project later on. Even in a complete national baseline system, top environment and tax officials with foresight might seek to lock in high baseline levels of deforestation in the hope of skimming from a then larger pool of REDD credit returns.<sup>218</sup> Corrupt forest officials would arguably be acting in the national interest by allowing over-harvesting of forests in the lead-up to the calculation of the baseline, expanding the opportunities for the government and project hosts to profit from later scaling back the accelerated deforestation.

The second problem relates to the intersection between the project- and national-scale REDD initiatives in a nested approach. The messiness in forest property rights<sup>219</sup> will be particularly harmful in determining where credit should go for curbed deforestation. In a nested system there are incentives for the bureaucrats in charge of reconciling individual projects with the national REDD accounting to take bribes from project developers to double-count projects. For example, the host government might already be sponsoring efforts to conserve a forest area, but opportunistic project sponsors could also receive funds by claiming credit for those improvements in the project-based market. A private project could piggyback on national initiatives, with the project developers and the bureaucrats splitting the proceeds. Moreover, given the difficulties in establishing property rights in many developing countries' forests, one could also imagine separate private projects overlapping and claiming the same reductions, or one project submitting multiple applications to monetize the same activities. Where land records are non-existent or incomplete, an official may not even know whether a project host has good title to the forest in question, and bribes may become a means to sort out competing claims.

The third corruption issue may have the potential to be the most virulent. Channeling the efforts of forest agency officials toward conservation of forest

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217. KORINNA HORTA, HEINRICH-BOLL-STIFTUNG, GLOBAL CLIMATE POLITICS IN THE CONGO BASIN: UNPRECEDENTED OPPORTUNITY OR HIGH-RISK GAMBLE? 5 (2009), available at [http://www.boell.de/downloads/Climate\\_Politics\\_Congo\\_Basin\\_K\\_Horta.pdf](http://www.boell.de/downloads/Climate_Politics_Congo_Basin_K_Horta.pdf).

218. Indonesia's government has already come under fire from NGOs for attempting to cement strong government control over the proceeds from REDD by law. Int'l Campaign for Ecological Justice in Indonesia, *REDD Concerns Deepen*, 82 DOWN TO EARTH 1, 1-2 (2009), available at <http://dte.gn.apc.org/82acl.htm>; Chris Lang, *REDD Concerns Deepen in Indonesia*, REDD MONITOR, Oct. 6, 2009, <http://www.redd-monitor.org/2009/10/06/redd-concerns-deepen-in-indonesia/>. For a breakdown of the planned revenue allocation, see *Indonesia Releases Revenue Sharing Rules for REDD Forest Carbon Projects*, MONGABAY.COM, July 13, 2009, [http://news.mongabay.com/2009/0713-redd\\_indonesia.html](http://news.mongabay.com/2009/0713-redd_indonesia.html).

219. See *supra* note 163 and accompanying text.

areas involved in REDD presents a knotty principal-agent problem. It will be immaterial to the personal pecuniary interests of individual forest agency officials whether REDD improvements are ultimately verified and credited to the national fisc or to an individual project. As such, there are strong motives for both lower and higher level authorities charged with protecting forests to take bribes to ignore violations of conservation laws. If done carefully, given the difficulties in monitoring changes in forest stocks,<sup>220</sup> the purchased silence of forest agency officials would be difficult to detect.

Finally, even if the global REDD regime as a whole is fairly effective, all of the corrupt incentives listed above could be augmented by a natural ratcheting effect. Assuming that demand for wood products remains high and that REDD takes a dent out of deforestation rates, the price of timber will logically increase. The increased price of timber would only make it more lucrative to engage in illegal logging. The bribes offered to officials, therefore, and the temptation to accept them, would grow over time. In addition, as REDD shows positive results in some areas, it may simply push deforestation into others. Officials from countries that hold out on making a REDD commitment could profit from deforestation leakage from the states that do crack down.<sup>221</sup> Countries not participating in REDD with significant corruption in the forestry sector may become more attractive locations for illegal harvesting. Deforestation patterns may also simply shift within countries that host project-level REDD programs.<sup>222</sup> In the case of subnational projects, it is less obvious how far afield to monitor leakage potential.<sup>223</sup>

### C. A REDD Proposal to Stymie Corruption

Despite these troubling problems, however, prescient policymakers can limit the three main sources for REDD corruption and the ratcheting effect that aggravates them. My proposal for a REDD system designed to deal with these pitfalls considers two categories of strategies. The first grouping explains how to set up REDD so it avoids falling prey to corrosive corruption from the beginning. The second part of the proposal would focus Annex I law enforcement energies on the problem to limit opportunities for forest agency officials to engage in corrupt behavior.

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220. See *supra* notes 150–160 and accompanying text. For example, Greenpeace raised significant monitoring concerns with the Nature Conservancy's Noel Kempff REDD pilot project in Bolivia. ARIANA DENSHAM ET AL., GREENPEACE, CARBON SCAM: NOEL KEMPPF CLIMATE ACTION PROJECT AND THE PUSH FOR SUBNATIONAL FOREST OFFSETS 7, available at <http://www.greenpeace.org/raw/content/international/press/reports/carbon-scam-noel-kempff-carbo.pdf>. It found that the estimates the project's sponsors had given for its carbon-saving benefits have varied wildly over time. *Id.*

221. For a discussion of the potentials for leakage in REDD, see Sven Wunder, *How Do We Deal with Leakage?*, in MOVING AHEAD WITH REDD: ISSUES, OPTIONS AND IMPLICATIONS 65 (Arild Angelsen, ed., 2008).

222. See DENSHAM, *supra* note 220, at 8.

223. *Id.* at 8–9.

### 1. *Design Fixes*

On the structural design side, a key to eliminating a variety of the troubles REDD could face is in nurturing economies of scale where possible.<sup>224</sup> As with the CDM, the corrupt incentives for REDD are heightened by the difficulties in monitoring small projects.<sup>225</sup> National baselines should be the dominant approach, a strategy that will limit the arbitrage and double counting that could arise in the interface between national-scale and project-based reductions. National baselines also put in place clear geographic borders around the anti-deforestation area, a fact that could cut down on the potential for gerrymandering individual projects to boost credit-generating potential and underestimate leakage.<sup>226</sup> National baselines may require each country to adopt bold, nationwide conservation planning, but they impose fewer administrative and enforcement costs than overseeing a large number of smaller scale initiatives.<sup>227</sup> In addition, to make efficient use of scarce resources, host countries should begin by carefully targeting increases in their re- or afforestation capacity to a limited number of key forest regions, rather than diffusing extra energies throughout the country. The first candidates for greater coverage should be the identified low-hanging fruit, or initial target areas where the greatest drop in deforestation can be gained for the smallest expenditure. This strategy would require an extensive national survey of deforestation vulnerabilities before entering the program stage. Concentrated resources will make it possible for countries to rigorously protect key areas and make the most of limited manpower and equipment. Corruption, and the telltale deforestation that would follow in its wake, would be much harder to conceal if the government, public, and media spotlights are directed at discrete zones. Of course, such channeled action should not come at the expense of normal forest protection resource allocation for other areas, lest deforestation simply leak to other regions. In addition, to avoid international deforestation leakage, as much of the developing world as possible needs to be incorporated into the REDD system.<sup>228</sup> The market signal of REDD permits may not be enough to encourage wide participation. As discussed below, capacity-building funds and bilateral initiatives are important aids to getting broad-based participation.<sup>229</sup>

Second, programs must be community-inclusive. A major destination of forest-related foreign assistance should be funding for proper surveying of

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224. Norway, arguably the most committed country sponsor of REDD, has made clear its preference for a country rather than a project based design. Erik Solheim, Op-Ed., *REDD Comes with Risks but There is No Other Choice Than to Try*, THE GUARDIAN, Oct. 8, 2009, available at <http://www.guardian.co.uk/environment/cif-green/2009/oct/08/redd-norway-brazil-climate-change>; accord DENSHAM, *supra* note 220, at 17.

225. E.g., Solheim, *supra* note 224.

226. DENSHAM, *supra* note 220, at 7–8.

227. See Angelsen et al., *supra* note 203, at 37–38.

228. Solheim, *supra* note 224.

229. See *infra* notes 238–248; see also Solheim, *supra* note 224.

forest regions and sorting title claims. Property rights codification programs need not come at the expense of indigenous and traditional rural community woodlands management schemes, but can instead work to formalize them. Granting clear ownership and use regimes creates private guardians for forest lands, giving residents a stake in protecting forests against incursions. It would also make double counting, and the attendant corruption, much more difficult. Further, REDD project designers—be they governments or private actors—should make sure to account for local uses in crafting programs to curb deforestation. REDD should not duplicate the ineffective stakeholder commenting provisions of the CDM.<sup>230</sup> Rather, governments could consider incorporating and codifying some limited local and indigenous customary uses of the forests and give profits or easements for small-scale harvesting. An engaged and supportive local population provides indispensable assistance in guarding against large-scale subversions of the system and in ferreting out corruption,<sup>231</sup> and it creates a constituency in favor of forest conservation policies. Unfortunately, a number of conservation groups have already raised issue with the way local interests have been sidelined in preliminary REDD efforts.<sup>232</sup>

Third, NGOs and international organizations must be brought into the oversight process. Current experiments in having NGOs help monitor forest preserves could be expanded and perhaps even done virtually. The World Resources Institute, for instance, already is using extensive satellite imagery to monitor and pinpoint deforestation throughout the world.<sup>233</sup> Forest certification groups are vehicles for spreading best practices and encouraging the market to value more environmentally effective management techniques.<sup>234</sup>

Finally, REDD participants should have access to the pools of funds for technical support and foreign aid currently in the pipeline in proposed E.U. and U.S. climate initiatives.<sup>235</sup> REDD credit prices probably will not sufficiently motivate investments in capacity building in developing nations to combat deforestation over the long term.<sup>236</sup> However, there are many positive externalities to activities, like better forest fire suppression training.<sup>237</sup> Beyond individual Annex I parties' commitments, it would be important for the agreement establishing REDD to create significant and reliable funding for

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230. See *supra* notes 112–114 and accompanying text.

231. HUMAN RIGHTS WATCH, *supra* note 141, at 46.

232. See, e.g., *supra* note 218; GLOBAL FOREST COALITION, EFFECTIVE POLICIES TO REDUCE EMISSIONS FROM DEFORESTATION IN DEVELOPING COUNTRIES (REDD) MUST ADDRESS LEAKAGE AND INCORPORATE SOCIAL IMPACT CRITERIA (2008), available at <http://unfccc.int/resource/docs/2008/smsn/ngo/016.pdf>; Mark Schapiro, *GM's Money Trees*, MOTHER JONES, Nov. 3, 2009, <http://www.motherjones.com/environment/2009/11/gms-money-trees>; DENSHAM, *supra* note 220, at 12.

233. World Resources Institute, *supra* note 25.

234. See *supra* notes 131, 171–174 and accompanying text.

235. See *supra* notes 13–21 and accompanying text.

236. DAVIET, *supra* note 1, at 6–7.

237. See *id.*

technical assistance, perhaps financing it through a small levy on the sale of REDD credits.

## 2. *Enforcement Measures*

A second prong to corruption prevention in REDD is marshalling the legal systems of Annex I states to punish actions by their citizens that spur forestry officials in the developing world to engage in corruption. Certainly, the United States should enforce the new Lacey Act provisions vigorously, which could compel firms to police the legality of their wood supplies.<sup>238</sup> If the law were to change the dynamics of timber industry demand, it could then create a market benefit for those countries actively enforcing sustainable concession laws, limiting corruption, and exporting legal timber. Catalyzing the E.U.'s Voluntary Partnership Agreement negotiations could have a similar effect.

The Lacey Act and cognate laws in other Annex I countries need not be the only legal tools to shut down REDD-disruptive graft, however. The U.S. Department of Justice should consider extending enforcement of the Foreign Corrupt Practices Act (FCPA) to the case of emissions offsets.<sup>239</sup> Its scant use in the environmental field to date notwithstanding, the FCPA could be a potent tool in fighting corruption in REDD. It could deter U.S. citizens and firms, as well as aliens and foreign companies operating in the United States,<sup>240</sup> from engaging in corruption with developing country forest officials over REDD. In particular, this approach might target project developers and third party verifiers that offer bribes to officials in exchange for not raising objections to overly generous baseline calculations, or for the double counting of reductions. In addition, prosecutors could focus attention on timber companies paying bribes to log protected areas. To enforce the FCPA in the REDD context, prosecutors would have to overcome the “grease payments” defense built into the law, which exempts bribes given for “routine governmental action,” defined as action “which is ordinarily and commonly performed by a foreign official.”<sup>241</sup> In the most recent and authoritative ruling on the scope of the exemption, *United States v. Kay*, the court found it to apply narrowly, serving as a screen to ensure payments for merely “ministerial” actions, like hastening permit issuance, as opposed to cases in which the bureaucrat is asked to

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238. *See supra* notes 190–198 and accompanying text.

239. 15 U.S.C. §§ 78m, 78dd-1-78ff (2006). In brief, the FCPA bars certain U.S. and non-U.S. companies from using the instrumentalities of interstate commerce in furtherance of bribing a foreign official to influence that official's decisions or actions. *Id.* §§ 78dd-1(a), 78dd-2(a), 78dd-3(a). The law prescribes both civil and criminal penalties for violators. *Id.* §§ 78dd-2(d), (g), 78dd-3(d), (e), 78ff(c). It imposes recordkeeping and reporting requirements on companies, also carrying both civil and criminal penalties for violations. *Id.* §§ 78m, 78ff(a)-(b).

240. For a good overview of the scope of the jurisdiction conferred by the FCPA, see Robin Miller, *Construction and Application of the Foreign Corrupt Practices Act*, 6 A.L.R. FED. 351 (2008).

241. 15 U.S.C. §§ 78dd-1(b), (f)(3).

“misuse his official position.”<sup>242</sup> Because corruption that undercuts a country’s express commitment to a REDD target is precisely the sort of abuse of office the FCPA seeks to forestall, it should easily fall outside of the exemption’s purview.

Other Annex I countries should consider extending anti-corruption laws to cover REDD activities as well. All of the Annex I states belonging to the OECD, along with Bulgaria, Estonia, Israel, and the Slovak Republic, have adopted the OECD’s Convention on Combating Bribery of Foreign Public Officials in International Business Transactions (OECD Convention).<sup>243</sup> Article 1 of the OECD Convention requires member states to “take such measures as may be necessary” to criminalize the intentional offer of bribes to “foreign public officials.”<sup>244</sup> In Article 3, member states commit to implementing “effective, proportionate and dissuasive . . . penalties” for corruption against either persons or business entities.<sup>245</sup> Importantly, Article 10 makes bribery of a foreign public official an extraditable offense, and the treaty itself forms a legal basis on which one party can request the extradition of a corruption suspect from another.<sup>246</sup> The Council of Europe’s Civil Law Convention on Corruption (Council of Europe Convention) stipulates that each party should allow persons suffering damages from corruption the right to “initiate an action” to recover her losses.<sup>247</sup> Unfortunately, the Council of Europe Convention has not developed as a significant corruption deterrent, as it is limited in part by traditional European procedural barriers to private citizen suits.<sup>248</sup> However, the large-scale challenge of corruption to meeting the E.U.’s climate objectives, along with graft in other areas, must prompt efforts to make the law easier to utilize. In designing the future REDD system with the struggles of the CDM and the forestry sector clearly in mind, and by making full use of global anti-corruption laws, the countries drafting a REDD accord can have greater assurance of the veracity of reductions in deforestation.

#### CONCLUSION

Addressing emissions from deforestation and degradation makes too much sense from diplomatic, efficiency, and scientific perspectives to leave it out of a more comprehensive climate agreement to follow Copenhagen. Incorporating REDD could substantially increase the flexibility of Annex I countries in

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242. 359 F.3d 738, 747 (5th Cir. 2004) (quoting H.R. Rep. No. 95-640, at 7–8; S. Rep. No. 95-114, at 10), *cert. denied*, 2008 U.S. LEXIS 6775 (Oct. 6, 2008).

243. OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, Dec. 17, 1997, OECD Doc. DAF/IME/BR(97)20, 37 ILM 1 (1998).

244. *Id.* art. 1.

245. *Id.* art. 3.

246. *Id.* art. 10(2).

247. Council of Europe, Civil Law Convention on Corruption, ch. 1, art. 3, Nov. 4, 1999, available at <http://conventions.coe.int/Treaty/en/Treaties/Html/174.htm>.

248. Paul Carrington, *Law and Transnational Corruption: The Need for Lincoln’s Law Abroad*, 70 LAW & CONTEMP. PROBS. 109, 121–22 (2007).

meeting binding greenhouse gas targets, while simultaneously fostering significant climate action on the part of developing states. Since deforestation accounts for a large share of annual global greenhouse gas emissions,<sup>249</sup> an agreement that leaves out REDD creates an unaddressed albatross on prospects for avoiding dangerous climate change. The praiseworthy efforts to fit REDD into the Copenhagen Accord should not lose sight, however, of the challenges corruption could pose to its successful implementation. REDD is likely to inherit regressive characteristics from its two main bloodlines, the CDM and forestry management, both of which have struggled with self-eroding incentives.

Ultimately, as Norway's environment minister wrote in an October 2009 op-ed, the question is not whether the many challenges in implementing REDD should cause us to abandon the idea, but rather how to create a system that manages those difficulties most effectively.<sup>250</sup> In REDD's CDM and forestry roots are clues as to how to execute the design feat of limiting corruption and maximizing effectiveness. A broad and stakeholder-inclusive program, aided by law enforcement efforts to police corruption from Annex I countries, would be a good start in creating a viable REDD system that is much more a catalyst of sustainable development than a source of illicit profit at the earth's expense.

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249. See *supra* note 5 and accompanying text.

250. Solheim, *supra* note 218.

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