

# Painting REDD Offsets Green: A Case for Statutory Deuteranopia\*

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*Deuteranopia* - Type of dichromatism in which red and green are confused. Syn. green blindness<sup>1</sup>

## I. Introduction and Overview

The citizens of the world are becoming more concerned about how climate change will affect their lives. There seems to be a growing global consensus that something should be done about greenhouse gas (“GHG”) emissions and climate change impacts. Mitigation (the stabilization of greenhouse gases in the atmosphere), and adaptation (the building of ecological and social community resiliency),<sup>2</sup> have found their way into the mainstream policy initiatives of national governments. That something ought to be done appears to no longer be the issue.

Instead, the current debates seem to focus on what mitigation or adaptation measures are necessary and how these measures will be financed. In this regard, much has been said about the fact that the principle of *common but differentiated responsibilities* demands that the North pays for the costs of its industrialization, which the South is suffering for.<sup>3</sup> While the North may grudgingly accept this, the extent to which it must pay and the manner by which its payment must be made is still highly contested. In addition, the North insists that the South must also do its part in reducing emissions.

The Kyoto Protocol allowed the North to take advantage of market-based mechanisms to comply with its emissions reductions targets. However, some question whether such market-based policies are an effective means to bring about the changes required to address the causes of climate change. Some may even question the morality of placing the fate of the planet in the hands of market forces. The growing practice of offering carbon offsets for sale in the carbon market is part of this debate.

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\* This paper was originally submitted as part of the requirements for the author’s LLM degree in Columbia Law School and would not have been possible without the generous support from the Doctoral Studies Fund of the University of the Philippines. The author also thanks Prof. Michael Gerrard of Columbia Law School for his comments on an earlier draft of this paper.

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<sup>1</sup> Millodot: Dictionary of Optometry and Visual Science, 7th edition (2009) available at <http://medical-dictionary.thefreedictionary.com/deuteranopia>.

<sup>2</sup> David Takacs, *Carbon Into Gold: Forest Carbon Offsets, Climate Change Adaptation, And International Law*, 15 HASTINGS W.-N.W. J. ENVTL. L & POL’Y 39, 43 (2009). Takacs defines ecological resiliency as “protecting and preserving the natural ecosystems that help human communities survive through buffering from floods, filtering drinking water, stabilizing soil, providing sustainable forest products, and preserving a host of other ecosystem services necessary for human survival” and social resiliency as “the democratic capacity to help marginalized communities accrue administrative, technical and political power that will help them make difficult decisions and survive the coming vicissitudes of nature and the coming economic and political upheavals.”

<sup>3</sup> In this paper, the term “North” or “Northern countries” refers to the developed or industrialized countries and under the context of the UNFCCC corresponds to Annex I countries while “South” or “Southern countries” refers to developing and least developed countries.

Offsets generated by projects for reducing emissions from deforestation and degradation (“REDD”) is a particularly controversial form of carbon offset. Excluded from the Kyoto Protocol mechanisms, REDD offsets are now making a comeback ever since the Bali Action Plan specifically referred to REDD. Most recently, the Copenhagen Accord recognized the crucial role of REDD and the need to enhance removals of GHG emissions by forests and agreed on the need to provide incentives to such actions to enable the mobilization of financial resources from developed countries.<sup>4</sup> It would seem therefore that the issuance and trade of REDD offsets may find its way into the evolving international climate change regime.

The objective of this paper is to evaluate whether the issuance of REDD offsets is an effective climate change mitigation measure.<sup>5</sup> In other words: *Are REDD offsets really green?* Based on this evaluation, the paper also aims to provide recommendations on the content of national legislation for REDD offsets.

Part I lays the foundation by discussing the background of the issue including the role of forests in climate change, the perceived benefits of REDD projects, and the pros and cons of carbon offsets. Part II discusses the arguments for and against REDD offsets and evaluates these arguments. Part III explains what “REDD law” should contain, in light of the evaluation in Part III and evaluates the current major US Climate Change bills. Part IV summarizes the debate and provides the suggested response to the question: Are REDD offsets really green?

## A. Forests, Greenhouse Gases and Climate Change

The UN Framework Convention on Climate Change (“UNFCCC”) defines a *sink* as “any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere”<sup>6</sup> while a *reservoir* is a “component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored.”<sup>7</sup> A forest is both a sink and a reservoir as it is both a mechanism to remove greenhouse gases and a place where carbon is stored. However, most of the literature indicates forests as sinks. For purposes of this paper the terms will be used interchangeably.

The statistics clearly indicate the importance of forests in dealing with climate change. Nearly 50% “of the global terrestrial carbon pool”<sup>8</sup> can be found in forests. Forests “store between 20 and 100 times more carbon

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<sup>4</sup> See Advanced and Unedited Version of Copenhagen Accord available at [http://unfccc.int/files/meetings/cop\\_15/application/pdf/cop15\\_cph\\_auv.pdf](http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf)

<sup>5</sup> For purposes of this paper, “effective climate change mitigation measure” is what is meant by “green.” While REDD projects may also have adaptation effects, considering that REDD specifically refers to “reducing emissions” then it should be evaluated as a mitigation measure.

<sup>6</sup> Article 1.8 UNFCCC.

<sup>7</sup> Article 1.7 UNFCCC.

<sup>8</sup> UNEP-WCMC 2007. Reducing Emissions from Deforestation: A Key Opportunity for Attaining Multiple Benefits. UNEP World Conservation Monitoring Centre, Cambridge, U.K. 4 (2007) available at [http://www.unep-wcmc.org/resources/publications/unep\\_wcmc%20RED%20Feb07.pdf](http://www.unep-wcmc.org/resources/publications/unep_wcmc%20RED%20Feb07.pdf)

per unit area than croplands.”<sup>9</sup> Forests hold a lot of the world’s carbon.

In addition to being reservoirs or sinks:

forests provide essential ecosystem services ... such as watershed protection, water flow regulation, nutrient recycling, rainfall generation and disease regulation ... Protecting tropical forests has a double-cooling effect, by reducing carbon emissions and maintaining high levels of evaporation from the canopy.<sup>10</sup>

But this crucial role of forests is threatened by deforestation and degradation.

Deforestation “involves a decrease in the area covered by forest”<sup>11</sup> or “[a] non-temporary change of land use from forest to other land use or depletion of forest crown cover to less than 10 percent.”<sup>12</sup> On the other hand, forest degradation refers to the “impoverishment of standing woody material mainly caused by human activities such as over-grazing, over-exploitation (for firewood in particular), repeated fires, or due attacks by insects, diseases, plant parasites or other natural causes such as cyclones.”<sup>13</sup>

The problem with deforestation is that it “not only releases the carbon stored in the above ground biomass, but [it also] leads to decomposition of root mass and mobilization of soil carbon.”<sup>14</sup>

The contribution of deforestation and forest degradation to global GHG emissions is substantial. Statistics indicate that global GHG emissions “from changes in land use, including tropical deforestation are estimated to be between 18% and 25% of annual global emissions from all sources.”<sup>15</sup>

To appreciate the scale by which forests are being destroyed, it should be noted that roughly “13 million hectares – an area the size of Nicaragua – are converted to other land uses”<sup>16</sup> annually “making land cover change the second largest contributor to global warming”<sup>17</sup> and “the largest source of [GHG] emissions in the developing world.”<sup>18</sup>

## **B. Understanding Reducing Emissions from Deforestation and Degradation (“REDD”)**

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<sup>9</sup> Philippe Cullet & Annie Patricia Kameri-Mbote, *Activities Implemented Jointly in the Forestry Sector: Conceptual and Operational Fallacies* 10 GEO. INT’L ENVTL. L. REV. 97, 109 (1997).

<sup>10</sup> CHARLIE PARKER ET AL, THE LITTLE REDD+ BOOK 13 (Global Canopy Programme Second Edition 2009) (2008).

<sup>11</sup> Jean-Paul Lanly, *Forestation and Forest Degradation Factors*, original and unedited version of paper submitted before the XII World Forestry Congress 2003 available at <http://www.fao.org/docrep/article/wfc/xii/ms12a-e.htm> accessed on 21 October 2009.

<sup>12</sup> Annex 6: Definitions And Basic Principles Of Sustainable Forest Management In Relation To Criteria And Indicators available at <http://www.fao.org/docrep/003/x6896e/x6896e0e.htm>.

<sup>13</sup> *Id.*

<sup>14</sup> *Supra* note 8.

<sup>15</sup> *Id.*

<sup>16</sup> *Supra* note 10 at 12.

<sup>17</sup> *Id.*

<sup>18</sup> Johannes Ebeling and Mai Yasue, *Generating Carbon Finance Through Avoided Deforestation And Its Potential To Create Climatic, Conservation and Human Development Benefits* PHIL. TRANS. R. SOC. B 1917-1924, 1917 (2008).

REDD is basically about reducing emissions by funding projects that help countries to reduce emissions from deforestation and degradation.<sup>19</sup> In addition, REDD also has the potential to “simultaneously address climate change and rural poverty, while conserving biodiversity and sustaining vital ecosystem services.”<sup>20</sup>

In terms of scope, some classify REDD activities into three types:<sup>21</sup>

- RED - This refers to reducing emissions from deforestation;
- REDD – This refers to reducing emissions from deforestation and degradation; and
- REDD+ - This refers to reducing emissions from deforestation and degradation and enhancement of carbon stocks.

It should be noted that the Copenhagen Accord refers to “REDD plus.”

The choice of scope is important because it will: (i) affect “the scale, relative cost and mitigation potential of a REDD mechanism,”<sup>22</sup> (ii) affect the “the political feasibility of an agreement and the ability of developing countries to measure, report and verify the options considered;”<sup>23</sup> and affect which countries will be benefited.<sup>24</sup>

Examples of REDD projects include:

- setting up protected forest areas;
- rehabilitating degraded forests and expanding forested areas through plantations;
- diminishing wood wastes generated from logging or construction operations which are left to decay.<sup>25</sup>

REDD Projects “are designed to address systematic deforestation and degradation drivers” such as:

large scale agricultural conversion of forests, unsustainable logging, increased access to forests due to road infrastructure expansion for extractive use, and illegal logging. Projects also address subsistence-level drivers, such as small-holder slash-and-burn agriculture, small-scale logging or fuel wood collection for local use, conversion of forests to pasture land, and unintended fires.<sup>26</sup>

## **B. Why REDD Can Be Gold**

Several arguments have been made regarding the benefits of REDD.

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<sup>19</sup> *Supra* note 10 at 14.

<sup>20</sup> *Id.*

<sup>21</sup> *Supra* note 10 at 20.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Supra* note 9 at 110.

<sup>26</sup> Schneider et al, *Banking on the Environment: Profiting From Investment in REDD*, 24 *SUM Nat. Resources & Env't* 14, 15 (2009).

## 1. Significantly reduce global GHGs

Considering roughly 20% of global GHGs come from deforestation, curbing this would have significant impact on the amount of CO<sub>2</sub> released into the atmosphere.

Preventing deforestation has a two-fold benefit. It “preserve[s][the] forests’ role as active carbon sinks and ... avoid[s] the release of their massive carbon stocks.”<sup>27</sup>

Comparing deforestation and reforestation, avoiding deforestation is more effective “because deforestation releases significantly more carbon into the atmosphere on a per area basis that can be sequestered through reforestation (i.e. replanting trees on lands that have not recently been forested) on a discounted basis.”<sup>28</sup> In fact, “[i]t can take over 200 years for a newly forested area to attain the carbon storage capacity of an old growth forest, and even at maturity, regenerated forests generally store less carbon than natural forests.”<sup>29</sup>

Apart from CO<sub>2</sub> “reducing deforestation can avoid major emissions of nitrous oxide (N<sub>2</sub>O) – a GHG that is more than 300 times more powerful than CO<sub>2</sub> – because (at least in the tropics, where most deforestation occurs) much of the biomass removed through deforestation is burned.”<sup>30</sup>

## 2. Promotes biodiversity

Forests are natural habitats of many species. Preventing “deforestation and wetlands conservation in particular provide important side benefits in terms of habitat and biodiversity conservation and environmental quality”<sup>31</sup> and [p]rimary tropical forests... are estimated to contain 50% to 70% of all terrestrial species, and tropical deforestation is a major cause of biodiversity loss.<sup>32</sup> Thus, preserving forests also mean protection of the plant and animal life that depend on the forest.

## 3. Cost efficient

Compared to the cost of building and operating carbon capture and storage (“CCS”) facilities, REDD projects are more cost efficient. Some estimate the “typical cost of CCS in power plants ranges from US \$30 to 90/tCO<sub>2</sub> or even more, depending on technology, CO<sub>2</sub>

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<sup>27</sup> David J. Hayes and Joel C. Beauvais, *Carbon Sequestration* in GLOBAL CLIMATE CHANGE AND U.S. LAW 694 (Michael Gerrard ed., 2007)

<sup>28</sup> *Id.* at 694-695.

<sup>29</sup> *Id.*

<sup>30</sup> *Id.* at 695.

<sup>31</sup> *Id.* at 696.

<sup>32</sup> *Id.*

purity and site.”<sup>33</sup> On the other hand “the IPCC estimates that reductions equal to or greater than the scale suggested here could be achieved at ≤U.S.\$20 per ton CO<sub>2</sub>.”<sup>34</sup>

A study conducted by the Pew Center on Global Climate Change “estimated that a forest-based sequestration program in the United States would sequester up to 300 million tons of carbon per year would cost between \$7.50 and \$22.50 per ton of CO<sub>2</sub> equivalent.”<sup>35</sup> The authors concluded that these costs are “not very far from typical cost estimates for emissions abatement through fuel switching and energy efficient improvements.”<sup>36</sup>

#### 4. Promote sustainable development in developing countries

REDD projects also has the potential of improving the economies of developing countries by “[p]roviding economic incentives for the maintenance of forest cover can help tropical countries avoid these negative impacts and meet development goals, while also complementing aggressive efforts to reduce fossil fuel emissions.”<sup>37</sup>

REDD projects help the South to use their forests sustainably by providing them with the resources and capacity-building they require.

#### 5. Immediate GHGs reductions

The need to mitigate GHG emissions is urgent and must be done swiftly. While technology is still being developed, existing technologies need to be used in the short term. Because “[f]orest-based emission reductions can be generated relatively quickly, [it] giv[es] countries a longer window of opportunity to pursue alternative technology and development pathways to address climate change in the medium term.”<sup>38</sup>

### C. Carbon Offsets

#### 1. What do carbon offsets offer?

What is a carbon offset?

A carbon offset represents the reduction of one metric ton (2,205 lbs) of carbon dioxide emissions. If you develop a project that reduces carbon dioxide emissions, every metric ton of CO<sub>2</sub> emissions reduced results in the creation of one carbon offset.<sup>39</sup>

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<sup>33</sup> IEA Energy Technology Essentials (December 2006) available at <http://www.iea.org/techno/essentials1.pdf>.

<sup>34</sup> Gullison et al, *Tropical Forests and Climate Policy* 316 SCIENCE 985 (2007).

<sup>35</sup> *Supra* note 27 at 696.

<sup>36</sup> *Id.*

<sup>37</sup> *Supra* note 34 at 986.

<sup>38</sup> *Supra* note 26 at 14.

<sup>39</sup> Melissa Papke, *Michigan Forests and Farms: Tapping and Marketing Our Land Resources for Carbon Sequestration*, 36 MICH. REAL PROP. REV. 61, 63 (2009).

Types of projects that can generate offsets include:<sup>40</sup>

- renewable energy projects;
- destruction of industrial pollutants;
- destruction of landfill or farm-animal generated methane;
- energy efficiency and fuel switching projects; and
- agricultural and forestry projects.

More specifically, agricultural and forestry projects can include:<sup>41</sup>

- sustainable forestry management;
- conservation tillage;
- permanent grass plantings;
- tree plantings; and
- anaerobic manure digesters.

Some believe that “offsets are both a sound way to motivate the unregulated market to reduce its emissions and to offer more cost-effective means for the regulated market to achieve reduction.”<sup>42</sup>

The obvious benefit of carbon offsets is that it can generate huge amounts of money for climate change related projects.

To illustrate the potential funding possibilities take note that:

- In 2007, about \$13 billion carbon offsets were purchased in the compliance market, representing more than 800 million metric tons of CO<sub>2</sub> reductions.<sup>43</sup>
- In 2007, between \$258 and \$331 million of carbon offsets were purchased in the voluntary market.<sup>44</sup>

The offset market is growing rapidly with an “estimated sixty-five million tons sold in the United States in 2007, valued at approximately \$337.3 million which represents a threefold increase in value from 2006.”<sup>45</sup>

According to one study land use and forestry projects comprised 56% of all the projects funded by voluntary carbon offset purchases.<sup>46</sup>

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<sup>40</sup> The list is derived from discussions in the paper of Melissa Papke, *Michigan Forests and Farms: Tapping and Marketing Our Land Resources for Carbon Sequestration*, 36 MICH. REAL PROP. REV. 61, 63 (2009)

<sup>41</sup> The list is derived from discussions in the paper of Melissa Papke, *supra* note 39.

<sup>42</sup> *Id.*

<sup>43</sup> *Supra* note 39.

<sup>44</sup> *Id.*

<sup>45</sup> Maria Savasta-Kennedy, *The Newest Hybrid: Notes Toward Standardized Certification of Carbon Offsets*, 34 N.C.J. Int'l L. & Comp. Reg. 851, 853, (2009).

<sup>46</sup> Harris, E., 2006. *Working Paper on the Voluntary Carbon Market: Current and Future Market Status, and Implications for Development Benefits*. International Institute for Environment and Development, London, October 2006 cited in “Voluntary Carbon Offsets—Getting What You Pay For.”

It must be noted that “[t]he voluntary carbon offset market in the United States has grown up in the absence of any federal cap on GHG emissions and without the benefit of a national compliance market.”<sup>47</sup> Thus, one can only imagine how the market will expand further once a mandatory federal cap and trade system is established.

Aside from generating funds, carbon offset projects “create opportunities for innovative responses to GHG emissions by encouraging investment in sectors not required to reduce emissions.”<sup>48</sup> For instance, the concept of *equity micro-offsets* (“EMOs”)<sup>49</sup> has been proposed to “reduce emissions while improving well-being among the poor.”<sup>50</sup> EMOs are “generated by funding actions that reduce emissions from individuals who are at or below the poverty level.”<sup>51</sup>

Offsets provide investments for projects that otherwise might not get funding (afforestation, reforestation, agricultural “no till” methods) and incentivize pollution sectors that would not otherwise be covered under mandatory reductions (methane burns at landfills). In this way the offset markets operate as a kind of laboratory for testing new methodologies and emission reduction technologies.<sup>52</sup>

Thus, offsets can make “an emissions program more cost-effective by (1) providing an incentive for non-regulated sources to generate emission reductions and (2) expanding emission compliance opportunities for regulated entities.”<sup>53</sup>

It should be noted that projects funded by offsets also offer non climate change related benefits “such as improvements in air or water quality,”<sup>54</sup> soil structure and help prevent erosion.<sup>55</sup>

## 2. What’s upsetting about offsets?

### a. Is it real?

The question most often raised is: Do offsets represent real

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Testimony Of Derik Broekhoff Senior Associate World Resources Institute before the House Select Committee On Energy Independence and Global Warming U.S. House Of Representatives 5 (18 July 2007) available at [http://pdf.wri.org/20070718\\_broekhoff\\_testimony.pdf](http://pdf.wri.org/20070718_broekhoff_testimony.pdf)

<sup>47</sup> *Supra* note 45 at 861.

<sup>48</sup> *Supra* note 45 at 857.

<sup>49</sup> Vandenberg et al defines EMOs as “[c]arbon credits generated in the process of improving social equity, with the proceeds of selling credits helping the project to pay for itself.”

<sup>50</sup> See Vandenberg, et al, *Micro-Offsets and Macro-Transformation: An Inconvenient View of Climate Change Justice*, 33 *Harv. Envtl. L. Rev.* 303 (2009)

<sup>51</sup> *Id.*

<sup>52</sup> *Supra* note 45 at 857.

<sup>53</sup> Jonathan L. Ramseur, *THE ROLE OF OFFSETS IN A GREENHOUSE GAS EMISSIONS CAP-AND-TRADE PROGRAM: POTENTIAL BENEFITS AND CONCERNS*, CRS Report for Congress, Summary (2008).

<sup>54</sup> *Id.*

<sup>55</sup> *Id.* at 14.

emissions reductions or are we just fooling ourselves? Is it gold or fool's gold? How can we be sure that the offset we pay for actually reduces GHG emissions or prevents GHG emissions from being released into the atmosphere?

For offsets to be credible, a ton of CO<sub>2</sub>-equivalent emissions from an offset project should equate to a ton reduced from a covered emission source, such as a smokestack or exhaust pipe. This objective presents challenges, because many offsets are difficult to measure. If illegitimate offset credits flow into an emissions trading program, the program would fail to reduce GHG emissions.<sup>56</sup>

Some offsets are criticized as “nothing but pork-barrel subsidies to energy producers.”<sup>57</sup> It's said to be nothing more than “[s]ubsidizing ‘good’ energy in order to justify using ‘bad’ energy is like eating salad in order to justify eating dessert. It is an exercise in self-deception.”<sup>58</sup>

#### **b. Guilt removal mechanism**

Critics point out that purchasing offsets from the South allow the North to continue profiting from greenhouse gas emitting activities. By purchasing offsets, companies and governments need not change GHG producing behavior. They can continue with business as usual as their “environmental guilt” is washed away by offsets they purchase. No wonder, offsets have been called by some as “papal indulgences that satisfy our guilty conscience while we continue our thirst for fossil fuel and energy use.”<sup>59</sup>

#### **c. Effect on the South**

The opportunity to sell offsets is believed to “serve as a disincentive for developing nations to enact laws or regulations limiting GHG emissions.”<sup>60</sup> Why would a developing nation establish emission caps or regulations to reduce emissions when such regulations would disqualify the issuance of offsets? Why would the South reduce emissions if it will result in loss of funding?

## **II. REDD Offsets**

### **A. What's good about REDD offsets?**

#### **1. Provide funding for adaptation**

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<sup>56</sup> *Supra* note 53.

<sup>57</sup> Arnold Kling, *The Political Economy of Alternative Energy* 6 March 2007 available at <http://www.tcsdaily.com/article.aspx?id=030607D> accessed on 29 October 2009

<sup>58</sup> *Id.*

<sup>59</sup> *Supra* note 45.

<sup>60</sup> *Supra* note 53 at 23.

One of the most contentious issues in international climate change negotiations is: Who should pay for adaptation? The next question may be just as contentious: How much should be paid and in what manner? These questions become more critical if effective international measures to curb GHG emissions are not undertaken. Under this scenario, countries would have to focus even more on how to adapt to the climate change impacts. Studies indicate that the South, particularly countries in Asia and Africa, will bear the brunt of climate change impacts. This is tragic considering that historically the North has contributed more to the problem and the South lack the resources to pay for their own adaptation.

If the South is able to generate REDD offset credits, it would help fund adaptation as it would be a means to channel funds from North to South.

It is estimated that \$10 to \$30 billion are required annually to address deforestation and forest degradation at the global level.<sup>61</sup> If you compare this amount to the international funding for forestry which is estimated at US\$1.1 billion annually for the past ten years<sup>62</sup> then obviously a lot of money still needs to be raised.

The argument is that “a solid, market-based REDD system has the potential to create a long-term, reliable source of funding to help ensure continued land management that values intact forests.”<sup>63</sup> The Copenhagen Accord as well as the pending U.S. climate change bills seem to recognize this.

## 2. Encourage the South’s Cooperation

Another argument is that “a market-based REDD system can encourage virtuous cycles of developing country participation, thereby enabling deeper emissions reductions by developed countries and greater absolute cuts globally.”<sup>64</sup>

Under the Kyoto Protocol only Annex I countries are required to reduce emissions. These comprise countries in the North. The main participation of the South has been as recipient of Clean Development Mechanism projects. As a result “developing countries have not been able to participate meaningfully in the global carbon market to date”<sup>65</sup> except as recipients of projects and funds.

A system incorporating REDD allowances would engage those countries actively in climate mitigation and yield broader sustainability and biodiversity benefits. Further, a market-based

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<sup>61</sup> *Supra* note 26 at 14.

<sup>62</sup> *Supra* note 18 at 1918.

<sup>63</sup> *Supra* note 26 at 17.

<sup>64</sup> *Id.*

<sup>65</sup> *Id.*

REDD system will broaden the universe of mitigation options, thus reducing compliance costs globally while enabling greater emissions reductions in industrialized countries.<sup>66</sup>

The North has been pushing for the South's participation in mitigation efforts, but the South is resisting this by pointing out that this would be inequitable because emissions cuts would hamper their development efforts. Beyond North-South politics however, studies seem to indicate that the gravity of the climate change problem cannot be addressed simply by emission cuts from the North alone. Engaging in REDD projects is one way the South can participate in mitigation efforts, without hampering its developmental goals.

### 3. Economically efficient

It has been argued that “deforestation and forest degradation are fundamentally symptoms of market failure.”<sup>67</sup> Essentially, this failure is caused by the fact that “the economic benefits of deforestation outweigh those of forest protection.”<sup>68</sup>

To break the cycle of destruction, it is necessary to create economic incentives that engage land-owners and populations tied to living on the land to protect and enhance standing forests. A market-based REDD system has the potential to realign economic incentives to make forests more valuable alive, intact, and functioning than dead and stripped for short-term extractive gain.<sup>69</sup>

It is believed that “a market-based REDD system, if well designed, should decrease compliance costs, thereby easing the transition to more stringent targets globally.”<sup>70</sup>

### 4. Environmental Co-Benefits

REDD projects can yield environmental benefits apart from GHG mitigation. Certain types of offsets are called *gourmet* offsets as opposed to *minimum standard* offsets.

A minimum standard makes sure that offsets are real, not double counted and additional. Gourmet offsets are those that are sourced from projects that adhere to strict additionality standards and have strong social and environmental benefits (so called co-benefits or secondary benefits. Such offsets often fetch a considerably higher price in the voluntary carbon market.<sup>71</sup>

## B. What's wrong with REDD offsets?

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<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> ANJA KOLLMUSS ET AL, MAKING SENSE OF THE VOLUNTARY CARBON MARKET: A COMPARISON OF CARBON OFFSET STANDARDS, 28 WWF Germany (2008)

While offsets for reforestation were permitted under the Kyoto Protocol projects to prevent deforestation were excluded because the parties were skeptical about these projects for a number of reasons. The main reasons for the skepticism and/or opposition are discussed below.

### 1. Leakage

Leakage happens when deforestation or forest degradation is simply moved to another place because of a REDD project in one area. The net result is that GHG emissions are not mitigated, but simply transferred elsewhere. Thus a REDD project “that restricts timber harvesting at a specific site may boost logging at an alternative location, thus reducing the effectiveness of the offset project.”<sup>72</sup> While the risk of leakage is present for all types of offset projects, it is believed that “[c]ompared to other offset types, forestry projects, particularly those that sequester carbon by curbing logging, likely present the greatest risk of leakage.”<sup>73</sup>

One way of looking at leakage is that it “is a project’s unintended effects on GHG emissions outside the project’s boundaries.”<sup>74</sup> Thus, a national policy against deforestation may prevent leakage within a country but international leakage is another matter altogether. Thus, the more countries participate in REDD projects the lesser the risk of leakage.

### 2. Non-Permanence

While some trees can live a very long time, forests are vulnerable to natural disasters which can release the carbon stored in them. Proponents of carbon capture and storage (“CCS”) technologies for power plants argue that unlike CCS the carbon sequestered would eventually be released in due time. How then can anyone issue offsets covering temporarily captured carbon?

In addition, “[o]ffset buyers need some assurance that the land set aside for forests (and carbon sequestration) will not be used for a conflicting purpose (e.g., logging or urban development) in the future.”<sup>75</sup> They need to be assured that after profiting from offsets, certain governments would not seek further profits by cutting the trees down or that adequate safeguards are made to protect these trees from natural disasters.

### 3. Questionable Additionality

*Additionality* ... refers to “whether an offset project really creates “additional” CO<sub>2</sub> sequestration that would not have occurred in the

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<sup>72</sup> *Supra* note 53 at 21.

<sup>73</sup> *Id.*

<sup>74</sup> *Supra* note 71 at 20.

<sup>75</sup> *Supra* note 53 at 21.

absence of a market for offsets.”<sup>76</sup> When offsets are issued though there is no additionality, the result is a net increase in GHG emissions.<sup>77</sup>

The questions that needs to be answered is this: How can there be additionality for REDD projects if “the practice being undertaken would be economically efficient or desirable for the landowner even in the absence of the ability to sell as an offset”?<sup>78</sup>

To illustrate, imagine a situation where Alpha, a manufacturing company wants to reduce the impact of the GHG emissions of its business by purchasing offsets from Omega, a company engaged in a REDD project. In essence, Alpha is paying Omega to reduce emissions on its behalf. However, if Omega would have undertaken the REDD project anyway, Alpha did not really pay for any additional emissions reductions. It would have happened anyway even without Alpha’s payment.

Determining additionality can be very difficult. In making such additionality assessments one does “involve some degree of subjectivity, which may lead to inconsistent additionality determinations.”<sup>79</sup>

#### 4. Methodological Issues

One question every REDD offset proponent must answer is: How did you compute the amount of carbon stored in particular forest the REDD offset covers? Developing the methodologies to account for the amount of carbon sequestered from the atmosphere by a particular technology can be difficult. The degree of difficulty can be greater when dealing with biological sequestration methods such as REDD projects.

Biological sequestration offset projects may present particular challenges in terms of measurement. The carbon cycle in trees and soils is only partially understood. Variations exist across tree species, ages, soil conditions, geographic locations, and management practices. Estimates of carbon uptake and storage are frequently considered imprecise or unreliable.<sup>80</sup>

It may be simpler to compute for carbon sequestration by CCS facilities, after all these are man-made devices with meters, gauges and digital displays. But it’s not the same when dealing with a forest.

#### 5. Prejudices local communities

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<sup>76</sup> *Supra* note 39.

<sup>77</sup> *Supra* note 2 at 58.

<sup>78</sup> *Supra* note 39.

<sup>79</sup> *Supra* note 53 at 19.

<sup>80</sup> *Supra* note 53 at 19 -20.

Some believe that the benefits of REDD will not be felt by the communities that live in or around the forests because such benefits “may be captured by national governments or corrupt, elite, local and national figures”<sup>81</sup> and to make matters worse “local communities will lose the livelihoods they derive from forests.”<sup>82</sup>

A concern is that by ascribing a carbon value to natural vegetation, the land and resource use rights of indigenous people may again be forfeited, even if the vegetation is conserved. At a minimum, indigenous and forest people may not receive an equitable share of the value of the carbon.<sup>83</sup>

The concern is that REDD offsets will create an incentive for corrupt governments in the South to displace local communities to derive profits from REDD projects.

## 6. Purely an economic efficiency measure

Perhaps the strongest criticism lodged against REDD offsets is that they are often issued not based “on ecological necessity, sustainable development needs, or on the legal/ethical obligation of common but differentiated responsibility [but] on economic efficiency.”<sup>84</sup>

The criteria for much international climate change “aid” is not necessarily about mitigating greenhouse gas emissions, helping developing nations or poor communities adapt, or conserving biodiversity. Instead, a coterie of actors with overlapping interests has devised complex systems that turn environmental obligations into efficient economic transactions.<sup>85</sup>

REDD offsets are believed to “often focus on economic expediency as the primary criterion in mitigation and adaptation, while doing little to help the poor adapt, which is exactly the opposite of what [Common But Differentiated Responsibility] proposes and requires.”<sup>86</sup> The issue goes into the very motivation for REDD offsets: Is the funded project established for environmental or economic reasons? This issue strikes at the heart of whether or not REDD offsets are truly green.

### C. Evaluation of REDD offsets

#### 1. Good news, bad news

The main strength of REDD offsets is that it offers a way to fund the preservation and protection of forests and a number of other adaptation

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<sup>81</sup> *Supra* note 2 at 58.

<sup>82</sup> *Id.*

<sup>83</sup> Bill Hare & Kirsten Macey, Tropical Deforestation Emissions Reduction Mechanism, Greenpeace 27 (2007).

<sup>84</sup> *Supra* note 2 at 41.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

projects that the South would otherwise not be able to accomplish. Funding is extremely important for the South. During the months leading up to the Copenhagen conference countries from the South, particularly Africa, made it abundantly clear that the North must pay for the adaptation in the South. To a certain extent the North recognizes this with the most generous offer coming from the EU.

Apart from cash, the goodwill created by the North's support for REDD offsets generated by the South is also a welcome side effect and may help oil the wheels of diplomacy during international treaty negotiations not only for climate change but for other issues as well. The North and South has had a tumultuous relationship beyond the climate change issue and the REDD offset mechanism may be one way the North and South can create bridges instead of walls. REDD offsets seems to be a measure where interests of North and South seem to converge.

At the domestic level, funding the preservation of forests may be a more politically acceptable method of reducing emissions for the constituencies of the North. A carbon tax would be unpopular and cap and trade would raise a howl from affected industries. Paying for preserving forests may be easier to sell to the electorate.

On the other hand, REDD offsets suffer from the same objections raised against all carbon offsets. The problems of leakage, lack of permanence and additionality are problems that can seriously undermine mitigation efforts. Unless these issues are addressed, the effectiveness of REDD as a mitigation measure will remain in doubt. The methodological issues involving carbon offsets in general are daunting. The fact that REDD offsets deal with natural ecosystems magnifies the difficulties. REDD offsets may aggravate the problem by making REDD projects too enticing before adequate methodologies and technologies are developed to ensure their integrity.

In addition, allowing the North to purchase REDD offsets from the South to comply with emissions reductions goals may create an incentive for countries in the South to engage in a "race to the bottom" wherein each of them competes the others to become the cheapest source of offsets. *Gourmet offsets* are too expensive and unless required by law, the market for them would be limited to only the most conscientious. So the South may offer "fire sales" of REDD offsets.

Finally, the push for REDD offsets appear to be driven more by economic benefits rather than environmental protection. The whole idea behind market-based mechanisms is to make environmental compliance cheaper and perhaps more efficient. The market has never been designed to protect public goods. Its not a good sign that the foremost advocates for REDD offsets are businessmen, lawyers, and economists while the most

vocal opposition comes from some environmental groups.<sup>87</sup> While the protagonists of a debate do not necessarily determine which side is right, the identities of the proponents and oppositors of the REDD debate should give one sufficient reason to pause and consider whether REDD offsets are really green.

Thus, although REDD offsets may have benefits for purposes of adaptation funding, diplomacy and international relations and domestic support, the arguments seem to weigh heavily against the effectiveness of REDD offsets as a climate change mitigation measure.

## 2. Facing the Facts

Despite its current weaknesses, REDD offsets appear to be a reality that the law must seek to address. The reality is that REDD offsets have begun to be generated and traded in some markets even without law requiring their purchase or issuance. Despite the uncertainties, there is a perception that REDD offsets are legitimate mitigation measures. Otherwise wouldn't governments prohibit their issuance or sale? The absence of legislation may be considered as tacit governmental acceptance of their legitimacy if not their effectiveness. There is therefore a need for laws and regulation to prescribe standards to prevent the generation and trade of such offsets in a manner that will undermine other efforts to reduce emissions. The genie has been let out of the bottle or Pandora's box has been opened so to speak and must be dealt with.

A pragmatic approach to REDD offsets may be what is appropriate at this time. It has been argued that *macro-transformations*<sup>88</sup> are required to effectively deal with climate change impacts. These macro-transformations:

will require substantial modifications to global and national public and private climate change governance schemes, and will require integration of GHG emissions reduction goals into many policies and institutions that are now unaffected by GHG considerations...<sup>89</sup>

As the recently concluded Copenhagen conference demonstrates, these needed macro-transformations will take time. REDD offsets may be part of a suite of measures designed to address greenhouse gas emissions in the short term while these macro-transformations are being negotiated and worked out.

### III. Writing the REDD Law

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<sup>87</sup> Foremost of these groups which oppose REDD offsets is Greenpeace. Though there are environmental groups that are amenable to some form of carbon offset, the point is that the most vocal opposition is from environmental groups and not business groups.

<sup>88</sup> See Vandenberg, *supra* note 50.

<sup>89</sup> *Supra* note 50 at 308.

As discussed earlier, despite the current risks involving REDD offsets, it is advisable that national legislation to be drafted to govern them. A market for REDD offsets exists even in the absence of legislation requiring them. Thus, it is in fact because of the risks involving REDD offsets that makes specific legislation necessary.

## A. REDD Content

### 1. Prescribe standards

One of the strongest criticisms against offsets in general is the multiple standards used for evaluating offsets. According to one count, there are “at least ten carbon offset protocols and certification programs from which to choose, each with its own set of certification standards.”<sup>90</sup>

Some of these offset standards include:<sup>91</sup>

- The CDM standard used for the Kyoto Protocol;
- The Gold Standard developed by the World Wildlife Fund;
- The Voluntary Carbon Standard managed by the VCS association;
- The VER+ standard developed by TÜV SÜD;
- The CCX standard;
- The Voluntary Offset Standard launched by the International Carbon Investors and Services;
- The CDM Afforestation and Reforestation Standard (CDM A/R);
- The Climate, Community and Biodiversity Standards developed by the Climate, Community and Biodiversity Alliance;
- Plan Vivo developed by Edinburgh Centre for Carbon Management.

Obviously, the “lack of a single, standardized certification program for carbon offsets creates consumer confusion and the potential for fraud in the market.”<sup>92</sup> Therefore, establishing “a uniform certification system will address consumer protection concerns, and, assuming the standard is reliable and effective, will also address concerns about the quality of offsets.”<sup>93</sup> It should be remembered that because of the nature of offsets as intangible goods “their value and integrity depend entirely on how they are defined, represented, and guaranteed.”<sup>94</sup>

It has been argued that there are three sets of standards that must be established “to create a true carbon offset ‘commodity’: (1) accounting standards; (2) monitoring and verification standards; and

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<sup>90</sup> *Supra* note 45 at 855.

<sup>91</sup> *Supra* note 71.

<sup>92</sup> *Supra* note 45 at 855-856.

<sup>93</sup> *Id* at 867.

<sup>94</sup> *Supra* note 46 at 6.

(3) registration and enforcement systems.”<sup>95</sup>

a. Accounting standards

An accounting standard “include definitions and rules for the elements that are essential during the design and early implementation phase of a project”<sup>96</sup> and should address the following issues:

- i. whether an offset represents an actual reduction in GHG emissions thereby “ensuring that a ton of emission reductions from one project is the same as a ton from another, and ensure that offsets are ‘real, surplus, and permanent.’”<sup>97</sup>
- ii. whether an offset project complies with the additionality requirement or “whether the purchase of emission reductions really enabled (or induced) a project to happen, or whether the purchase is essentially being wasted on a project that would have happened anyway.”<sup>98</sup>

As discussed earlier, determining additionality can be difficult but it is not insurmountable. There exists at least “two distinct approaches to additionality testing: *Project based additionality testing* and *performance standards*.”<sup>99</sup> The former “evaluates each individual project on a case by case basis”<sup>100</sup> while the latter “use aggregated data on project or technology characteristics to establish a threshold ... that must be met or exceeded in order for a project to be deemed additional.”<sup>101</sup> An example of project based additionality testing is determining whether the project is “implemented to fulfill official policies, regulations, or industry standards.”<sup>102</sup> If so it cannot be considered additional. But if “the project goes beyond compliance”<sup>103</sup> it may be additional, subject to more tests. On the other hand, an example of a performance standard test is the emissions-based (benchmark) additionality test which “establishes a generic baseline scenario – referred to as a benchmark – against which all projects of a given type are assessed.”<sup>104</sup>

b. Monitoring and Verification Standards

Determining on paper whether an offset project will produce benefits is one thing, that it actually produces such benefits in

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<sup>95</sup> *Id* at 7.

<sup>96</sup> *Supra* note 71 at 14.

<sup>97</sup> *Supra* note 46 at 7.

<sup>98</sup> *Id* at 8.

<sup>99</sup> *Supra* note 71 at 15.

<sup>100</sup> *Id*.

<sup>101</sup> *Id* at 16.

<sup>102</sup> *Id* at 15.

<sup>103</sup> *Id*.

<sup>104</sup> *Id* at 16.

reality is another matter.

Monitoring and verification standards are required to ensure that offset projects perform as expected and to quantify their actual emission reductions. Monitoring protocols are generally developed in conjunction with accounting protocols. Verification usually requires the services of a third-party professional verifier, or a government regulator. If third-party verifiers are used, they need to meet minimum qualifications and have some expertise related to the types of projects they are verifying.<sup>105</sup>

Certification rules may also be included as part of monitoring and verification.

Certification rules are used to quantify the actual carbon savings that can enter the market once the project is up and running. There is sometimes a lag time between the start of a project and when it starts producing carbon offsets. This is especially true for forestry projects – the trees have to grow for a few years before they have absorbed enough carbon that can be quantified and sold.<sup>106</sup>

#### c. Registration and Enforcement Standards

Registration and enforcement standards “ensure that carbon offsets are only sold once and clarify ownership and enable trading of offsets.”<sup>107</sup> The registries keep track of offsets and clarify ownership of offsets.<sup>108</sup>

These registries should:

- contain publicly available information that can be used to uniquely identify offset projects;<sup>109</sup>
- provide a mechanism to assign unique identifiers to offset credits generated by each project;<sup>110</sup> and
- include a system to transparently track the ownership and status of offset credits.<sup>111</sup>

## 2. Independent Validator

Ordinarily “the competing interests of buyer and seller create checks and balances”<sup>112</sup> in a given market. Unfortunately this does not work in the carbon market.

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<sup>105</sup> *Supra* note 46 at 8.

<sup>106</sup> 14 WWF Germany (2008)

<sup>107</sup> *Supra* note 71 at 14.

<sup>108</sup> *Supra* note 71 at 39.

<sup>109</sup> *Supra* note 46 at 8 (18 July 2007) available at [http://pdf.wri.org/20070718\\_broekhoff\\_testimony.pdf](http://pdf.wri.org/20070718_broekhoff_testimony.pdf)

<sup>110</sup> *Supra* note 46

<sup>111</sup> *Id.*

<sup>112</sup> *Supra* note 71 at 33.

Although there is competition on pricing ... since both the supplier and buyer of carbon offsets aim to maximize the number of offsets produced, there is a strong financial incentive for both supplier and buyer to overestimate the baseline scenario and thus artificially inflate emission credits to increase profitability... Free markets are not designed to protect public goods. Neither suppliers nor buyers of carbon offsets can therefore be reasonably expected to act altruistically and conservatively estimate a project's reductions, as this would directly translate into decreased profits.<sup>113</sup>

This inherent flaw of project-based carbon trading systems can be resolved by an independent validator who will ensure that the prescribed standards are enforced.

### 3. Safeguards

Safeguards must be included to address the concerns regarding the lack of permanence of forest captured carbon, the possibility of prejudice suffered by local forest communities and environmental concerns.

#### a. Permanence buffer

It may be advisable “to establish some type of permanence buffer, or insurance pool, to deal with fluctuations and variability in generating emission reductions nationally and from site-based activities.”<sup>114</sup>

#### b. Benefits-sharing mechanisms

There are a number of stakeholders in any given forested area. These stakeholders include “different government agencies, levels of government (i.e., national to local), indigenous peoples, communities, private landowners, or companies may have some rights or claims that may conflict with overall REDD goals”<sup>115</sup> which “must be addressed and adequate and equitable compensation or benefits-sharing arrangements negotiated.”<sup>116</sup>

#### c. Alignment with other environment laws, policies and standards.

There are a number of environmental laws, policies and standards which will have an impact on and will be impacted by REDD-related legislation.

Environmental laws regarding environmental and social-impact assessments should also be revisited in light of REDD and forest-carbon attributes overall... There are numerous laws governing the extractive industries, including agriculture, forestry, mining, oil and gas development, and sources of energy, such as biofuels or hydro-electric. These laws should be reviewed and aligned with national REDD goals to ensure consistency and to avoid unintended

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<sup>113</sup> *Id.*

<sup>114</sup> *Supra* note 26 at 16.

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

consequences and counter-incentives.<sup>117</sup>

## B. U.S. Climate Change Bills

The following discussion evaluates the content of the current U.S. climate change related bills to the extent that these address the concerns regarding REDD offsets.

### 1. Waxman-Markey

Section 311 of Waxman-Markey amends the Clean Air Act by adding “Title VII Global Warming Pollution Reduction Program.” Part D of this proposed Title VII is on “Offsets.” The key provisions of Part D are discussed below.

#### a. Offsets Integrity Advisory Board

Section 731 of Part D provides for the establishment of an independent Offsets Integrity Advisory Board (“Advisory Board”) which will “make recommendations to the Administrator for use in promulgating and revising regulations ... and for ensuring the overall environmental integrity of the programs established pursuant to those regulations.”<sup>118</sup>

The Advisory Board is empowered: (i) to provide recommendations to the Administrator regarding offset project types that should be considered for eligibility; and (ii) make available to the Administrator and other relevant Federal agencies its advice and comments on offsets related issues.<sup>119</sup>

The Advisory Board is also required to:

- i. review approved and potential methodologies, scientific studies, offset project monitoring, offset project verification reports, and audits and evaluate the net emissions effects of implemented offset projects.
- ii. recommend changes to offset methodologies, protocols, or project types, or to the overall offset program to ensure that offset credits issued by the Administrator do not compromise the integrity of the annual emission reductions established under section 703, and to avoid or minimize adverse effects to human health or the environment.<sup>120</sup>

#### b. Offsets Program and Regulations

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<sup>117</sup> *Id.*

<sup>118</sup> Section 731 (a).

<sup>119</sup> Section 731 (c).

<sup>120</sup> Section 731 (d).

Section 732 “[d]irects the Administrator to establish an offsets program and requires that regulations ensure offsets are verifiable, additional, and permanent.”<sup>121</sup> The same section also requires the Administrator, “in consultation with appropriate Federal agencies and taking into consideration the recommendations of the Advisory Board” to “promulgate regulations establishing a program for the issuance of offset credits in accordance with the requirements of this part.”<sup>122</sup> In general, these regulations *inter alia* must:

- (1) authorize the issuance of offset credits with respect to qualifying offset projects that result in reductions or avoidance of greenhouse gas emissions, or sequestration of greenhouse gases;
- (2) ensure that such offset credits represent verifiable and additional greenhouse gas emission reductions or avoidance, or increases in sequestration;
- (3) ensure that offset credits issued for sequestration offset projects are only issued for greenhouse gas reductions that are permanent.<sup>123</sup>

More specifically, the regulations must include rules on *standardized methodologies and verification of offset credits*.

i. Standardized Methodologies

For each type of eligible offset project, the regulations must provide for the establishment of the standardized methodologies:

- for determining the additionality of greenhouse gas emission reductions or avoidance, or greenhouse gas sequestration, achieved by an offset project of that type.<sup>124</sup>
- for establishing activity baselines for offset projects of that type.<sup>125</sup>
- for determining the extent to which greenhouse gas emission reductions or avoidance, or greenhouse gas sequestration, achieved by an offset project of that type exceed a relevant activity baseline, including protocols for monitoring and accounting for uncertainty.<sup>126</sup>
- for accounting for and mitigating potential leakage, if any, from an offset project of that type, taking

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<sup>121</sup> Section 732 (a).

<sup>122</sup> Section 732 (a).

<sup>123</sup> Section 732 (b).

<sup>124</sup> Section 734 (a) (1).

<sup>125</sup> Section 734 (a) (2). For this purpose, “[t]he Administrator shall set activity baselines to reflect a conservative estimate of business-as-usual performance or practices for the relevant type of activity such that the baseline provides an adequate margin of safety to ensure the environmental integrity of offsets calculated in reference to such baseline.”

<sup>126</sup> Section 734 (a) (3).

uncertainty into account.<sup>127</sup>

ii. Verification of offset credits

The Administrator is mandated to establish requirements, including protocols, for verification of the quantity of greenhouse gas emission reductions or avoidance, or sequestration of greenhouse gases, resulting from an offset project.<sup>128</sup> Specifically:

The regulations shall require that an offset project developer shall submit a report, prepared by a third-party verifier accredited under subsection (d), providing such information as the Administrator requires to determine the quantity of greenhouse gas emission reductions or avoidance, or sequestration of greenhouse gases, resulting from the offset project.<sup>129</sup>

The subsection (d) referred to pertains to the provision on “Verifier Accreditation” which mandates the Administrator to establish a process and requirements for periodic accreditation of third-party verifiers.

In addition to the regulations and as part of the Offsets Program the Administrator will establish an *Offset Registry* “for qualifying offset projects and offset credits issued with respect thereto under this part.” Section 733 further requires the Administrator to establish, and at its option<sup>130</sup> periodically revise, “a list of types of projects eligible to generate offset credits, including international offset credits.”<sup>131</sup>

c. Accounting For Reversals

Section 734 mandates the Administrator to establish, for each type of listed eligible sequestration project, the requirements to account for and address reversals and prescribe mechanisms to ensure that any sequestration with respect to which an offset credit is issued under this part results in a permanent net increase in sequestration, and that full account is taken of any actual or potential reversal of such sequestration, with an adequate margin of safety.

One of the mechanisms must be an offsets reserve, which is a program under which, before issuance of offset credits the Administrator shall subtract and reserve from the quantity to

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<sup>127</sup> Section 734 (a) (4)

<sup>128</sup> Section 736 (a).

<sup>129</sup> Section 736 (a).

<sup>130</sup> In Section 733 (a) (1) and 733 (b) on modification of the list the term used is “may” and not “shall.”

<sup>131</sup> In Section 733 (a) (1).

be issued a quantity of offset credits based on the risk of reversal.<sup>132</sup>

d. Environmental Consideration for Forestry offsets

In the event the Administrator lists forestry or other relevant land management-related offset projects as eligible offset project types, the Administrator must promulgate regulations for the selection and use of species in such offset projects:

- (1) to ensure that native species are given primary consideration in such projects;
- (2) to enhance biological diversity in such projects;
- (3) to prohibit the use of federally designated or State-designated noxious weeds;
- (4) to prohibit the use of a species listed by a regional or State invasive plant authority within the applicable region or State; and
- (5) in the case of forestry offset projects, in accordance with widely accepted, environmentally sustainable forestry practices.<sup>133</sup>

e. International offset credits

Section 743 authorizes the Administrator, in consultation with the Secretary of State and the Administrator of the United States Agency for International Development, to issue international offset credits based on activities that reduce or avoid greenhouse gas emissions, or increase sequestration of greenhouse gases, in a developing country. Project designed to reduce GHG emissions through activities to reduce deforestation are qualified for international offset credits provided it complies with the requirements prescribed by the law.<sup>134</sup>

f. Offsets from reduced deforestation

In addition to the requirements applicable for all international

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<sup>132</sup> Section 734 (b) (3).

<sup>133</sup> Section 741.

<sup>134</sup> The requirements prescribed by Waxman-Markey are found in Section 743 (b) (2) which states:

- (2) REQUIREMENTS FOR INTERNATIONAL OFFSET CREDITS.—The Administrator may issue international offset credits only if—
- “(A) the United States is a party to a bilateral or multilateral agreement or arrangement that includes the country in which the project or measure achieving the relevant greenhouse gas emission reduction or avoidance, or greenhouse gas sequestration, has occurred;
  - “(B) such country is a developing country; and
  - “(C) such agreement or arrangement—
- “(i) ensures that the requirements of this part apply to the issuance of international offset credits under this section; and
  - “(ii) provides for the appropriate distribution of international offset credits issued.

offset credits, offsets from reduced deforestation must comply with additional requirements pertaining primarily to the location of activities, methodologies and standards employed and eligibility of the developing countries involved.<sup>135</sup>

It should be noted that the Waxman Markey bill, includes provisions on assisting developing countries combat deforestation in “Part E – Supplemental Emissions Reductions From Reduced Deforestation” of the proposed Title VII. However these provisions appear to contemplate programs funded through aid programs rather than through the generation or trading of offsets and is therefore outside the scope of this paper.

## 2. The Kerry-Boxer bill

The Kerry Boxer Bill amends the Clean Air Act by adding “Title VII – Global Warming Pollution Reduction and Investment Program” which includes “Part D – Offsets.”

### a. Offsets Integrity Advisory Board

Similar to the Waxman-Markey bill the Kerry-Boxer bill provides for an Offsets Integrity Advisory Board, except that the Advisory Board in this case makes recommendations directly to the President.

### b. Offsets Program and Regulations

In the Kerry-Boxer bill it is the President, in consultation with appropriate Federal agencies and taking into consideration the recommendations of the Advisory Board, who promulgates the regulations establishing a program for the issuance of offset credits.

Essentially, the various duties of the Administrator provided for under Waxman-Markey are given to the President under Kerry-Boxer.

The Kerry-Boxer bill also provides for an Offsets registry and a listing of eligible projects. However, Kerry-Boxer provision includes a list of specific projects that may be considered.

The Kerry-Boxer bill also has similar provisions to the Waxman-Markey bill on standardized methodologies, verification of offset credits, accounting for reversals, international offset credits, offsets from reduced deforestation, environmental integrity and existing methodologies.

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<sup>135</sup> Section 743 (e).

c. Office of Offsets Integrity

An innovation of the Kerry-Boxer bill is the establishment of an Office of Offsets Integrity within the Department of Justice. This office is tasked with supervising and coordinating investigations and civil enforcement of the carbon offsets program; ensuring that Federal law relating to civil enforcement of the carbon offsets program is used to the fullest extent authorized; and ensuring that adequate resources are made available for the investigation and enforcement of civil violations of the carbon offsets program.<sup>136</sup>

3. Analysis and Evaluation of the Bills

It appears that both bills include provisions that seek to address the major objections to offsets in general. It seems that most of the substantial objections to REDD offsets are addressed through rule-making and regulation. However, while the bills prescribe certain standards, much of the standard setting has been delegated to the relevant government agency. Therefore it remains to be seen whether the regulations that will be promulgated would be sufficient to deal with the objections to offsets. Thus, on paper, the bills appear to address the REDD offsets issues.

#### IV. Conclusion: Are REDD offsets *really* green?

This paper set out to evaluate whether the issuance REDD offsets mechanism is an effective climate change mitigation measure.

As discussed in Part II, REDD offset mechanism offers tangible benefits but it would seem that the issuance of REDD offsets is primarily motivated by economic efficiency rather than by ecological necessity. Its main benefit is to act as channel for funds from the North to flow to the South. Of course it can also be argued that because REDD offsets provide funds for forest conservation projects, the South can allocate its limited resources on other mitigation and adaptation measures. But this remains to be seen.

Therefore, it appears that it is fair to state that REDD offsets only *appears* as an effective climate change mitigation measure. It is therefore not “green” in that sense. Painted green perhaps or made to appear green but not really green. Under current circumstances REDD offsets do not appear to advance mitigation efforts even if it purports to advance REDD projects. This is because REDD offsets aggravates the limitations of REDD projects. This it does by creating incentives for behavior which have to potential to undermine mitigation efforts.

But because it is not *really* green does not mean that REDD offsets should be stricken off climate change legislation. On the contrary, it is because it is not really green that

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<sup>136</sup> Section 743.

law should specifically regulate it. As discussed in Part II, carbon offsets is a reality even without legislation. To prevent carbon offsets from undermining really green measures, it must be regulated.

In Part III, this paper analyzed whether the major US Climate Change bills provide sufficient regulation for REDD offsets. As far as statutory standards go, it would seem so. There appears to be sufficient statutory authority to provide rule-making and regulatory functions to limit the dangers of REDD offsets and maximize its benefits. But the litmus test of the effectiveness of the law would be the regulations that would be promulgated and how these would be enforced. Whether these regulations and their enforcement would be *green* remains to be seen.