

REDD in California's cap and trade: undermining environmental and financial market integrity

Introduction

The State of California is poised to become the first cap and trade market to accept forest carbon offset credits for compliance purposes. Halting deforestation is a necessary complement to global phase-outs in fossil fuel use to achieve climate stabilization. Over the last several years, policymakers have convened in several fora to develop climate policies that will also incentivize reductions in global deforestation. However, California's reliance on offset credits as the primary mechanism to deliver capital and incentivize forest mitigation actions ignores several recent analyses demonstrating that offsets, and in particular forest carbon offsets, are prone to gaming, fraud and market manipulation. Moreover, California's current approach ignores the fundamental importance of good governance and protecting the rights of indigenous peoples and local communities. In several instances, the California REDD (Reducing Emissions from Deforestation and Degradation) offset program lacks environmental integrity and undermines recent United Nations Framework Convention on Climate Change (UNFCCC) decisions.

While these regulations are still limited in scope at this stage, several critical problems are readily apparent. This briefing paper describes the use of offsets in California's carbon trading program, and identifies several concerns related to their lack of market and environmental integrity. It then outlines California's proposed program to generate international forest offsets, or REDD offsets, and details several problems, some of which may be correctable (e.g. creating stronger protections for indigenous peoples), and other problems that are intractable.

1. Offsets in California's cap and trade program

In 2006, the Government of California passed Assembly Bill 32, the Global Warming Solutions Act, which mandates a reduction in greenhouse gas emissions to 1990 levels by 2020.¹ The law requires the California Air Resources Board (ARB) to identify policies and measures that will deliver the required emissions reductions. In December 2010, the ARB passed regulations to implement a cap and trade program, as one part of implementing Assembly Bill 32.

The regulations allow for 8% of a compliance entity's obligations to be met with offset credits. This is roughly equivalent to the annual reductions of the cap and trade program, meaning that it is possible for regulated entities to continue polluting as usual and not make any emissions reductions themselves. In the first compliance period (2012-14), up to 25% of the allowed offset use can be generated from international sector-based offset credits, a limit which will rise to 50% in the second and third commitment periods (2015-2020).²

1.1 Offsets exacerbate localized health impacts

California's use of carbon trading means that as individual plants trade away their obligations to reduce emissions, communities already burdened by dangerously high concentrations of carbon co-pollutant from power plants, refineries, and other industrial

¹ In December 2007, the Board approved the 2020 emission limit of 427 million metric tons of carbon dioxide equivalent (MMTCO₂E) of greenhouse gases. California Air Resources Board. "California 1990 Greenhouse Gas Emissions Level and 2020 Limit." Accessed February 10, 2011: <http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>

² California Air Resources Board. "Staff's Suggested Modifications to the Original Proposal, Attachment B." Accessed February 10, 2011: <http://www.arb.ca.gov/cc/capandtrade/capandtrade/draft%20attachment%20b.pdf>



sources would likely see few benefits of reduced toxic smog and particulate matter that would accompany local greenhouse gas emissions reductions. The localized health impacts are exacerbated by the program's heavy use of offsets; these concerns, among others, prompted a group of organizations and individuals to sue the ARB in 2009, arguing that the agency failed to analyze and consider alternatives to cap and trade before proceeding with implementing AB 32.³

1.2 Offsets pose risks to environmental and market integrity

Offsets also pose significant risks to the financial integrity of a carbon trading system, as offsets are much more prone to fraud than carbon allowances. REDD offsets in particular are particularly at risk for fraud, corruption, land grabbing and violations of indigenous rights because they are sourced from countries where land tenure, governance and legal systems are weak. Already, the Legislative Analyst's Office (LAO) found that the complexity of ARB's cap and trade system opens it up to gaming and that the State of California lacks authority to effectively regulate markets arising from a cap and trade system.⁴ The LAO noted that "ARB has no experience in regulating [trading of compliance instruments in the spot market], and its lack of technical expertise and institutional knowledge of such matters increases the chance that market manipulation could go undetected, in spite of any monitoring efforts that it puts in place."⁵

1.3 Offsets are economically inefficient at financing greenhouse gas reductions

Studies of payments for ecosystem services, such as carbon trading, have found that intermediaries emerge as dominant agents in the value chain and that a substantial part of total flows of funds can be captured by the intermediaries (validators, verifiers, registrars, commercialization agents and consultants). One analysis of Clean Development Mechanism offset projects (the largest offset market in the world) found that only about 31 per cent of total funds received for CDM credits capitalize mitigation projects, with the rest going to carbon traders and middlemen.⁶ Studies of REDD offset credits similarly find that intermediaries often capture more than 50% of REDD financing.⁷ A recent study of REDD offsets found that intermediary costs were high, sometimes taking over a year to complete, and noted that "it is sometimes in a consultant's interest to make things as complicated as possible."⁸

Notably, commodities markets are already unfavorable to producers and privilege intermediaries, largely because of the inherent nature of commodities themselves. Presuming that carbon would function similarly to existing commodities markets, less than 3% of the investment would accrue to land-holders and approximately 5% to government; over 60% would be captured by intermediaries.⁹

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- 3 On March 18, 2011, Superior Court Judge Ernest Goldsmith ruled that the ARB approved the plan to implement AB32 prior to completing the required environmental review, and that the board failed to adequately consider alternatives to cap and trade. The court also ordered ARB to halt development of a cap and trade program until ARB complied with CEQA. ARB has since appealed the ruling and the court decided to allow ARB to continue work on developing a cap and trade program while the issue of whether ARB violated CEQA undergoes the appeal process.
- 4 Legislative Analyst's Office. "Cap-and-Trade Market Issues" Presented to: Senate Select Committee on the Environment, the Economy, and Climate Change Hon. Fran Pavley, Chair. June 29, 2011. Accessed July 28, 2011: http://www.lao.ca.gov/handouts/resources/2011/Cap_and_Trade_Market_Issues_062911.pdf
- 5 Legislative Analyst's Office. "Cap-and-Trade Market Issues" Presented to: Senate Select Committee on the Environment, the Economy, and Climate Change Hon. Fran Pavley, Chair. June 29, 2011. Accessed July 28, 2011: http://www.lao.ca.gov/handouts/resources/2011/Cap_and_Trade_Market_Issues_062911.pdf
- 6 The efficiency of carbon offsetting through the Clean Development Mechanism, [Carbon Retirement](#), 2009.
- 7 Corbera et al., 2009; as quoted in Hajek, F., et al. (2011): Regime-building for REDD+: Evidence from a cluster of local initiatives in south-eastern Peru. *Environ. Sci. Policy* doi:10.1016/j.envsci.2010.12.007
- 8 Hajek, F., et al. (2011): Regime-building for REDD+: Evidence from a cluster of local initiatives in south-eastern Peru. *Environ. Sci. Policy* doi:10.1016/j.envsci.2010.12.007
- 9 The Munden Project. "Redd And Forest Carbon: Market-Based Critique and Recommendations" March, 2011. Accessed August 5, 2011: <http://www.mundenproject.com/forestcarbonreport2.pdf>.



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1.4 Lack of independent and effective monitoring and enforcement

ARB has identified three options for issuing and enforcing credits. ARB could become the sole credit issuing body and issue forest carbon offset credits directly to eligible activities, or ARB could approve offset credits issued by external credit-issuing programs through a linkage agreement. Alternatively, it could both approve credits from external programs and issue offset credits itself.

Credits in the Clean Development Mechanism (CDM), the largest existing offsets program in the world, are issued by the CDM Executive Board under the UNFCCC. The Executive Board (EB) operates under the authority of the decision making body of the UNFCCC and is responsible for approving new methodologies; accrediting operational entities, as well as suspending and withdrawing accreditation; reviewing and approving validation, registration and certification; and ultimately issuing certified emissions reductions (CDM credits). In this sense, the credit issuing body is -- theoretically -- independent from both the credit-generating entity and the credit-purchasing entity, thus avoiding the most egregious conflicts of interest.¹⁰ It is not yet clear how ARB will avoid conflicts of interest in credit issuance and enforcement.

2 California's REDD offsets program

The California cap and trade program will allow international "sector-based" offset credits to be used for compliance purposes, and particularly mentions the use of REDD sectoral credits. As opposed to conventional offsets, which are generated by individual projects, sector-based offsets would be generated at a national or state level from actions taken by various public and private entities across an entire sector, such as the energy sector. REDD sectoral offsets (Reduced Emissions from Deforestation and Degradation) would represent avoided carbon dioxide emissions from efforts to prevent deforestation and degradation, particularly in tropical countries. REDD is the only sector explicitly included in the ARB regulations, marking the first time that REDD credits will be used in a compliance (rather than a voluntary) carbon market.

The cap and trade regulation requires tropical forested State governments seeking to generate REDD credits to meet a core set of minimum standards, including:¹¹ (1) establishing a "sector plan" for reducing emissions and a transparent monitoring, reporting and verification system across the jurisdiction; (2) ensuring that offset credits are real, additional, quantifiable, permanent, verifiable and enforceable; and (3) establishing public participation and consultation mechanisms in the design process.

2.1 Sources of REDD offset credits

In 2008, California Governor Arnold Schwarzenegger along with six other Governors from Indonesia and Brazil launched the Governors' Climate and Forests Task Force, an effort to generate REDD offset credits. The Task Force was initially comprised of Mato Grosso, Para, Amazonas and Amapa in Brazil as well as Aceh and Papua in Indonesia. The Task Force has since grown to include Campeche

¹⁰ However, in practice, the CDM Executive Board has come under criticism for conflicts of interest. For example, in July 2011, the CDM Executive Board voted to ignore a recommendation from its own Methodology Panel to change the way it accounts for emissions reductions from supercritical coal projects (a methodology that over-credited these projects by up to 50%). This decision was led by China, which sits on the Executive Board, and which comprises about 30% of CDM coal projects.

¹¹ California Air Resources Board. "Preliminary Draft Regulation For A California Cap-And-Trade Program." Accessed February 9, 2011: <http://www.arb.ca.gov/cc/capandtrade/meetings/121409/pdr.pdf>



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and Chiapas in Mexico; Cross River State in Nigeria; as well as East Kalimantan, West Kalimantan and Central Kalimantan in Indonesia.

In November 2010, the California Governor Arnold Schwarzenegger signed another [Memorandum of Understanding \(MOU\)](#) with Governor Arnóbio Marques de Almeida Júnior from Acre, Brazil and Governor Juan José Sabines Guerrero from Chiapas, Mexico to form a working group to elaborate more specific REDD regulations and recommend them to the ARB by October, 2011. While Acre and Chiapas will likely be early pilot provinces that link to the California system to provide REDD offsets; other sub-national states and provinces will be able to follow.

2.2 A hybrid approach: “nested sectoral” REDD credits

As mentioned, California’s cap and trade system explicitly allows for the use of international sector-based offset credits. But in practice, ARB is proposing a “nested sectoral approach” to generating REDD credits. This combines elements of a traditional, project-based offsets program (where companies or entrepreneurs can develop their own offset projects) with a sector-based offsets program.

California’s sector-based offset program requires governments to make their own sector-wide emissions reductions uncompensated. According to ARB presentations, tropical forest countries must first establish a baseline reflecting a business-as-usual emissions scenario based, mostly likely, on a 5-15 year historic average of national deforestation or forest degradation rates.¹² For example, the government of Chiapas, Mexico will first have to establish its baseline level of state-level deforestation and forest degradation rates. Then, provincial and state governments would be required to achieve a certain percentage of emissions reductions (this is referred to as the crediting baseline).

Once the crediting baseline is reached, individual projects would be eligible to receive carbon credits for additional greenhouse gas emissions reductions. These individual projects would be “nested” within a state or provincial program designed to reduce emissions through avoiding deforestation. Each individual project would be required to comply with as yet undeveloped methodologies to inventory and account for all project-level activities. Additionally, the host jurisdiction (i.e., the developing country government) must establish a system for reconciling project-based greenhouse gas emissions reductions in sector-level accounting.

3 Problems with California’s proposed REDD program

ARB has not yet finalized or approved either REDD specific protocols; however the proposed design of California’s REDD program raises serious concerns on many levels. Some problems are the result of particular design choices that California is making, while other problems are intractable.

Some problems that are correctable relate to whether ARB will create protocols that strongly protect indigenous peoples, ban the use of clearcutting, and respect current REDD agreements that have been forged at the United Nations Framework Convention on Climate Change. Other problems are potentially intractable, especially if California proceeds with a nested sectoral approach. These problems are related to how REDD initiatives, although they may be critical in the battle against climate change, are poorly suited for carbon offsets. It is these concerns related to environmental integrity that have prevented governments around the

¹² http://www.gcfttaskforce.org/documents/May_Aceh/Day_1_2/California%20Presentation%20%28May%2019%202010%29.pdf



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world from allowing REDD offset credits to be used in compliance-oriented carbon trading programs.

3.1 Current Forest Offset Protocols Lead to Clearcutting

ARB has already approved protocols developed by the Climate Action Reserve (CAR)¹³ for domestic forest offsets; the protocols for these domestic forest offsets are likely to set influential precedents for any international forest offsets that might enter California through REDD projects. Forty-seven organizations wrote a letter to ARB in December 2010 raising concerns about the domestic forest offset protocol, arguing that “ARB’s proposed cap-and-trade rule currently not only explicitly invites forest clearcutting as a carbon offset project, but also incentivizes the conversion of natural forests into tree farms.”¹⁴ CAR, which developed the forest protocol, similarly acknowledged concerns regarding the environmental impacts of forest clearcutting, but has repeatedly and indefinitely postponed any action to address those concerns. When ARB Board members raised questions about the inclusion of forest clearcutting when the protocol was first considered in September of 2009, they were assured that these flaws would be addressed and the forest protocol would become the “gold standard” for forest carbon offsets. Unfortunately, the cap and trade rules adopted by ARB still include forest clearcutting.

CAR is also developing a Forest Project Protocol for use throughout Mexico, one of the Governors’ Forest and Climate Task Force countries, and presumed early provider of REDD credits to California. The repeated failure of CAR to address the perverse incentive to clearcut sets a damaging and alarming precedent for international offsets.

3.2 No Protection of Rights for Indigenous Peoples and Local Communities

Importantly, California cap and trade regulations have ignored the vital importance of protecting the rights of indigenous peoples and local communities. Other REDD policy making bodies, including the World Bank, UN-REDD and the UN Framework Convention on Climate Change have all recognized that ensuring the rights of indigenous peoples and local communities is essential the success of REDD policies. Indigenous peoples and forest-dependent communities are critical actors in maintaining forest cover and carbon stocks, and they will provide even greater climate benefits to the world when their tenure rights to land, territories and resources are secure.

However, forest protection financing can also lead to increased conflict over resources, social exclusion and “land-grabbing,” if rights are not recognized. If the rights and participation of indigenous peoples and forest dependent communities are not guaranteed in California’s regulation to establish a REDD crediting program, governments are likely to view avoiding adverse social impacts and respecting rights merely as extra implementation costs, rather than as a contribution to and prerequisite for REDD effectiveness.

The lack of clear commitment and guidance requiring the full protection of the rights of indigenous peoples and local communities sends a dangerous signal. If California is to proceed with any form of forest protection efforts in developing countries, it must ensure that the development and implementation of such programs do not lead to negative social and environmental consequences.

¹³ The Climate Action Reserve is a non-governmental entity which develops various carbon offset protocols and is comprised of carbon offset developers, carbon offset purchasers, and environmental organizations.

¹⁴ NGO Letter to Honorable Mary Nichols, Chair, California Air Resources Board, December 9, 2010. RE: The Forest Carbon Offset Program Should Not Include Forest Clearcutting.



3.3 Undermines UNFCCC agreements

California's proposal to use a nested sectoral crediting approach undercuts REDD agreements that have been negotiated at the international level. For example, California requires provincial and state governments in forested countries to use their own budgetary resources to deliver emissions reductions needed to get to the crediting baseline and therefore generate offset credits. In contrast, within the UNFCCC, developed countries are required to pay the full, incremental cost of developing country mitigation action.

In addition, California's nested sectoral approach undermines the agreement made last year at the UNFCCC conference in Cancun, which explicitly states that payments for emissions reductions must take place in the context of national monitoring systems.¹⁵ Yet California is poised to pay for emissions reductions at the state level in an effort to access REDD offset credits without any requirement for national monitoring or accounting systems.

Thirdly, the UNFCCC Cancun decisions requires that REDD "actions are consistent with the conservation of natural forests and biological diversity, ensuring that [REDD] actions...are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits"¹⁶ California risks not only undermining the UNFCCC process but directly contravening it if international forest offset protocols resemble those approved for domestic use.

3.4 Setting Forest Emissions Baselines – An intractable problem

As described, in order to generate carbon credits, countries must first establish an emissions baseline, below which any reductions are compensated. Reference levels (or baselines) for forest related mitigation actions will therefore determine the scale and rate of funding received for forest related mitigation actions. Because it also determines how "additional" mitigation actions are to what would have otherwise occurred in a business as usual scenario, baselines are also a key factor in determining environmental integrity.

Reference scenarios can be determined on a historical basis or based on modeled projections to account for future variables (like planned development of infrastructure). Both historical baselines and projected baselines lack environmental integrity. There is little reason to suppose deforestation patterns will be constant over time, as deforestation rates are linked to the level of development and to demographic transition, and they tend to slow as forests are depleted. Basing future projections on historical trends does not account for this forest transition curve. Projected deforestation rates attempt to predict future deforestation based on the anticipated evolution of key variables. However, deforestation rates are not only influenced by relatively predictable factors such as population size or road infrastructure. They are also affected by random events such as conflicts (which trigger migration), fluctuations in major agricultural commodity prices, changes in currency parity and climate variations (which reduce or increase the risks of large-scale fires and have a considerable impact on deforestation).

A study published in *Environmental Science Policy*, found that "depending upon the baseline approach used, the total credited emissions avoided ranged over two orders of magnitude for the same quantity of actual emissions reductions."¹⁷ Forest emissions baselines do not provide sufficient certainty to deliver robust and additional carbon credits for compliance purposes.

¹⁵ Cancun Decision 1.CP/16. UNFCCC. Paragraph 77 (read in conjunction with footnote 8). Accessed August 2, 2011: <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>

¹⁶ Ibid., Appendix I, paragraph 2(e)

¹⁷ Griscom B, Shoch D, Stanley B, Cortez R, Virgilio: N: Sensitivity of amount and distribution of tropical forest carbon credits depending on baseline rules. *Environ Sci Policy* 2009, 12:897-911.



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3.5 Leakage poses serious threat to environmental integrity

The “nested sectoral crediting” approach proposed by ARB poses significant risks to the environmental integrity of California’s cap and trade program. Project level crediting significantly increases the risk of emissions leakage, when REDD efforts simply prompt deforesting or degrading activities to shift elsewhere.¹⁸ Many REDD policymakers, including the Council of the European Union and the Informal Working Group on Interim Finance for REDD (IWG-IFR), have noted that national implementation is required to minimize the risk of in-country leakage.¹⁹ Even with national accounting, which theoretically, though not always in practice, should account for intra-national leakage, international leakage effects could be in excess of 50%.²⁰

Sub-national accounting, at either the state or province level, is prone to both international and intra-national emissions leakage. However, the potential for emissions leakage at the project level is even more egregious. The Noel Kempff Climate Action Project (NKCAP) in Bolivia has failed to protect against leakage despite promises by the NKCAP sponsors. Project sponsors avoided rigorous, expensive monitoring of leakage, favoring elaborate models which depended on significant guesswork. A report released last year shows leakage from the project could be as high as 44%.²¹ Moreover, reconciling project-based accounting within jurisdiction-wide accounting is likely to involve unacceptably high levels of guess work and significant margins of error.

Project- and subnational-based REDD credits are incapable of meeting the environmental integrity standards demanded by AB 32, and they should be excluded from any cap and trade program in California.

3.6 Forest carbon accounting is inaccurate, unreliable and prone to gaming

The science of measuring carbon stocks and fluxes from land based emissions is, to date, far from rigorous and verifiable. The use of default values in offset project calculations is widespread and estimates of carbon volumes stored in the respective forest areas vary considerably.²² Error bars of 50% and more are not uncommon,²³ with 30-40% being the average range of uncertainty from measuring land-use change emissions (i.e. estimating how much emissions change when a forest is converted to agriculture) in EU countries.²⁴ Some have proposed that uncertainties can be dealt with through conservative accounting; however, the scale of uncertainty that arises in forest carbon accounting suggests that conservative accounting is insufficient to address the challenge. A recent study assessing the uncertainty in measuring forest carbon found that, “the overall model output uncertainty reaches an average of +/- 43.5%” and that “none of the scenarios tested...achieve emissions reductions outside the error margins.”²⁵

18 Leakage comes in two main forms: “activity-shifting leakage,” when forest carbon activities directly cause carbon-emitting activities to be shifted to another location outside of the project boundaries (or outside the country, at the national scale); and “market leakage,” when a project or policy changes the supply-and-demand equilibrium, causing market actors to shift their activities.

19 European Council. “Council Conclusions on addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss” (Conclusions of the 2912th Environment Council meeting, Brussels, 4 December 2008). & Meridian Institute. 2009. “Reducing Emissions from Deforestation and Forest Degradation (REDD): An Options Assessment Report.” Prepared for the Government of Norway, by Arild Angelsen, Sandra Brown, Cyril Loisel, Leo Peskett, Charlotte Streck, and Daniel Zarin.

20 Brian C. Murray, Ph.D. “Seeing REDD: Addressing Additionality, Leakage, and Permanence with a National Approach” (powerpoint presented at Presented at Forest Day, UN Framework Convention on Climate Change COP Meeting, Bali, Indonesia, December 8, 2007).

21 Ariana Densham, et. al. “Carbon Scam: Noel Kempff Climate Action Project and the Push for Sub-national Forest Offsets.” 2009. Amsterdam, Greenpeace International.

22 Two recent (unpublished) studies of carbon stocks in projects in Peru, carried out using two different methodologies resulted in a difference of carbon stocks of 50 tonnes of carbon/hectare.

23 Kintisch, e. (2007) improved monitoring of rainforests helps pierce haze of deforestation. *science*. vol 316, 27 April, pp 536-537

24 EUROPEAN COMMISSION, Directorate-General Climate Action. Summary Report on the work carried out by European Climate Change Programme (ECCP) group on Climate Policy for Land Use, Land Use Change and Forestry (LULUCF) draft 3, september 2010.

25 Pelletier J., et al. 2011. Diagnosing the uncertainty and detectability of emission reductions for REDD+ under current capa-



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The Munden Report also found that “from a trading point of view, the process which forest creates carbon is ill defined to the point of being unacceptably risky. It contains a vague, poorly defined and scientifically unreliable process for creating forest carbon.”²⁶ Munden found that the market would deliver three possible reactions to uncertain accounting methods: (1) This uncertainty will be considered a significant risk, and used as justification to significantly discount the price of carbon; (2) Participants will choose the most complex methodology and rig it in order to produce artificially high numbers of credits; or (3) The easiest accounting method will be chosen, regardless of scientific accuracy, in a bid to reduce start-up costs.²⁷

Conclusion: Is California Distracting from Real Forest Protection Solutions?

While California’s REDD regulations are still limited in scope at this stage, several critical problems are readily apparent. ARB’s current approach offsets poses significant risks to the environment and the health of California citizens. In particular, its efforts to generate REDD credits falls short of a resilient, effective and equitable policy mechanism for forest investments and may ultimately distract from real forest protection solutions.

Creating REDD credits requires a tremendous amount of effort and resources to accurately measure carbon. This focus risks detracting from the real measures that are needed to reduce emissions by addressing the underlying drivers of deforestation.

Typical symptoms of weak forest governance – such as corruption, illegal and unplanned forest conversion, and conflicts over access to land and resources – are critical drivers of deforestation in many countries. Importantly, the lack of state capacity to create coherent, enabling policy environments, be accountable to local stakeholders and rightsholders, as well enforce the rule of law are both major drivers of deforestation in and of themselves and a key barrier to effectively engage in REDD policies and programs.²⁸

The introduction of performance-based REDD payments, particularly those generated through carbon markets, has the effect of prioritizing forest carbon accounting in tropical forest countries, often at the expense of efforts to address drivers of deforestation. Clear, coherent laws and regulations as well as effective implementation, compliance with and enforcement of those laws and regulations are necessary to achieving both emissions reductions and achieving development and objectives in developing countries.



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ilities: an example for Panama. *Environ. Res. Lett.* 6 (2011) 024005 p. 7

26 The Munden Project. “Redd And Forest Carbon: Market-Based Critique and Recommendations” March, 2011. Accessed August 5, 2011: <http://www.mundenproject.com/forestcarbonreport2.pdf>.

27 Ibid.

28 Jade Saunders & Rosalind Reeve “Monitoring Governance Safeguards in REDD+” (paper presented at Expert workshop on Monitoring Governance Safeguards in REDD+ Expert Workshop, May 24-25, 2010, London, England).