EARTH INNOVATIONS #1

SUPPORTING CALIFORNIA'S LEADERSHIP IN GLOBAL SOLUTIONS TO CLIMATE CHANGE

Multiplying the Impact of California's Global Warming Solutions Act (AB 32) through International Partnerships for Tropical Forests

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EXECUTIVE SUMMARY

California is seeking to scale up its climate change mitigation impact through international partnerships, such as the recent accords with China, Mexico and Peru. In this brief, we explore two international opportunities to reduce emissions from tropical deforestation that could give weight to these agreements and potentially triple the impact of AB 32, the Global Warming Solutions Act, while simultaneously containing possible fuel price increases within the state. California could achieve this multiplying effect if it (1) exercises its role as a founding member of the Governors' Climate and Forests task force (GCF) by signing the recent declaration to reduce deforestation, and (2) implements the existing provision for the use of international forestry offsets in AB 32. Brazil states that are members of the GCF have already achieved ten times more CO₂ emissions reductions than AB 32 will achieve by 2020 by slowing Amazon deforestation, and the recent GCF commitment shows that states in Peru, Mexico and Indonesia are ready to do their part but need California as a strong partner.



+ FIGURE 1

Estimate of emissions reductions of CO_2 equivalents achieved through AB 32 from 2014 through 2020 with and without the implementation of the provision for tropical forest offsets. This estimate is explained in final section of this report.



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INTRODUCTION

California is poised to amplify climate change solutions beyond its own borders by reducing emissions from land use-farming, livestock and forestry. Land use today is 1/4th of the climate change problem, but could become 60% of the climate change solution over the next 15 years¹ even as production increases to feed the global population. Within land use, the biggest opportunity to slow emissions in the near term is by reducing tropical deforestation and forest degradation, which are currently 14% of total emissions world-wide.² California could assume global leadership in slowing greenhouse gas emissions by exercising its role as founding member of the Governors' Climate and Forests task force (GCF)³ and by initiating the regulatory process of the provision in AB 32 that would enable industries in its cap-and-trade program to acquire international offsets from tropical, state-wide programs for reducing emissions from deforestation and forest degradation (REDD). This opportunity is manifested in the recent GCF declaration to reduce deforestation 80% by 2020 if adequate funding is available. If implemented, the "Rio Branco Declaration" would avoid nearly 4 billion tons of CO₂ emissions and 9 million hectares of forest clearing.

CALIFORNIA'S PARTNERSHIP WITH TROPICAL STATES & PROVINCES THROUGH THE "GOVERNORS' CLIMATE & FORESTS TASK FORCE" (GCF)

The GCF is a partnership of 26 states and provinces from Brazil, Indonesia, Mexico, Nigeria, Peru, Spain and the USA. The tropical members of the GCF contain more than a quarter of the world's tropical forests and are advancing innovative, state-wide, "jurisdictional" programs for reducing emissions from agriculture, deforestation and land use while increasing agricultural production. These programs have contributed to about 3 billion tons of CO₂ emissions reductions and have been motivated, in part, by the prospect of "pay-for-performance" financing that would recognize and reward these enormous contributions to climate change mitigation, including California's provision in AB 32 for recognizing international sectorbased offsets from reductions in emissions from deforestation.⁴ For the last six years, California has worked with its partners in the GCF and elsewhere to analyze the various options for the design and implementation of such a sectorbased offsets provision under AB 32. Financing for the GCF's substantial contributions to climate change mitigation have not yet materialized at scale, and political will to continue building and implementing these programs is waning.



contain 1/4th of the world's tropical forests and have already achieved nearly 3 billion tons of CO₂ emissions reductions.⁸ California is a founding member of the GCF.

Recommendation 1 California Should Sign the GCF "Rio Branco Declaration"

THE RIO BRANCO DECLARATION AND ITS

SIGNIFICANCE: The Rio Branco Declaration (RBD)ⁱ was signed by sixteen governments of the GCF on August 11th, in Rio Branco, Acre (Brazil), establishing a commitment to reduce deforestation 80% by 2020; other GCF governments should be signing in the near future. If fully implemented, the RBD would result in

commitments today. It would represent 10 times the impact of AB 32⁶ and twice the impact of the US EPA regulation to reduce carbon pollution from coal-fired power plants.⁷ The RBD commitment of GCF states, who have been global leaders in implementing jurisdiction-wide REDD and low-emission development programs, is conditional. It will advance only if the longawaited finance for these states and provinces materializes and if businesses that buy agricultural products from GCF states and provinces recognize and support the 2020 commitment. The RBD also includes a commitment to channel a substantial share of pay-for-performance revenues to indigenous peoples, forest-based communities, and smallholder farmers.



+ FIGURE 3

Historic annual deforestation of 19 tropical GCF states and provinces and emissions reductions if an 80% reduction is successfully implemented. *Reference level for average annual deforestation is 1996-2005 for Brazilian states and 2001-2010 for all other states and provinces.⁹

nearly 4 billion tons of avoided CO_2 emissions and 9 million hectares of avoided deforestation by 2020 (Figure 3)^{5 ii}, and is therefore one of the world's largest-scale climate change mitigation

ii Other GCF members will be signing over the coming weeks (Mexico, Brazil).

The GCF governments have made an explicit plea for additional financial support, but are not asking for the international community to pay the whole bill. Rather, they are seeking recognition—a positive signal that their efforts are appreciated and compensated—and a commitment to move forward with innovative programs that could provide the foundation for larger programs in the future. California can send that signal to the 23 tropical states and provinces that have



i Governors' Climate and Forests Task Force. Rio Branco Declaration. (2014). http://www.gcftaskforce.org/documents/2014_annual_meeting/GCF_RioBrancoDeclaration_August_5_2014_EN.pdf



Governor Teras Nerang (left) of Indonesia's Central Kalimantan province and Governor Viana (right) of Acre, Brazil sign the Rio Branco Declaration. Photo courtesy of WWF-Brasil.

been collaborating with California since 2008 by signing the Rio Branco Declaration. This act would have far greater impact if accompanied by a commitment to initiate the regulatory process of the AB 32 international forest offset provision.

IMPLEMENTING OFFSETS FROM REDUCTIONS IN DEFORESTATION IN AB 32

California could lead the way in galvanizing the progress made by tropical state and provincial governments in building "low-emission" rural development models by announcing its intention to adopt regulations to allow sector-based offsets from jurisdictional REDD programs in its cap-and-trade program. This announcement would send the important signal that some of the financial support needed to achieve the 4 billion tons of avoided CO₂ emissions will become available in the near future. Perhaps more significantly, this announcement would send the signal that these governments' efforts to build these programs for slowing deforestation while increasing agricultural output are recognized and valued. Although offset programs have been criticized for letting large polluting industries "off the hook" in reducing their own pollution, their positive impact on climate change can be guite large. As a cost-containing measure, they allow for steeper emissions reduction targets overall and can inject needed investment into sectors whose emissions lie outside of the climate policy's cap. The implementation of offsets from reductions in tropical deforestation within AB 32 would represent the establishment of the first regulated market for emissions reductions from these sources achieved across entire states and provinces. While the total flow of investment to tropical states and provinces resulting from this would be small, the impact could be potentially very large.

Recommendation 2 Initiate the process to regulate the use of international offsets from reductions in tropical deforestation in AB 32.

We estimate that California's contribution to climate change mitigation through AB 32 could be tripled if the state implements this provision (see Figure 1 and the final section of the report). REDD is the boldest effort in history to slow the destruction of tropical forests and associated carbon emissions -14% of the world's total.¹⁰ This mechanism was designed to compensate tropical states and nations that succeed in reducing emissions from deforestation and forest degradation across their entire territories. By providing the right economic incentives, these programs have the ability to drive enormous GHG reductions by promoting rural development models that keep forests standing as they increase food and fiber production on lands that have already been cleared. Brazil has already achieved a 3.2 GtCO2 emission reduction by slowing deforestation in the Amazon region.¹¹ This is roughly 10 times what AB 32 will achieve by 2020.

HOW REDD IN CALIFORNIA WORKS

The Global Warming Solutions Act 2006 (AB 32) legally requires California to reduce its aggregate emissions back to 1990 levels by 2020, roughly a 15% decline from the forecasted 2020 business as usual (BAU) levels.¹² In order to meet this target, an extensive set of cost effective emission reduction measures was adopted by California's Air Resource Board (CARB) including the world's most comprehensive cap-and-



trade program, estimated to yield roughly 29% of California's anticipated GHG reductions by 2020.¹³ The program incentivizes emissions reductions beyond regulated pollution sources through the use of offset credits - rigorously verified emissions reductions that occur outside of capped sectors. As part of the offset program, ARB allows for the use of international sectorbased offsetsⁱⁱⁱ that require GHG reductions across entire states or jurisdictions, rather than from individual projects that have a greater risk of leakage.¹⁴ Although the program allows for sector-based offsets, a linkage protocol still needs to be established, and currently the only eligible sector-based offset outlined by ARB are those from jurisdictional REDD programs.¹⁵

JURISDICTIONAL REDUCTIONS IN DEFORESTATION AS GOLD-STANDARD OFFSETS

As long as California continues to utilize the cap-and-trade system, it is imperative that the highest quality offsets are used. Offsets from robust jurisdictional programs represent a gold standard for offsets that leverage additional emissions reductions and produce important co-benefits. Rigorous monitoring and verification systems ensure that these are real, additional, permanent, and enforceable reductions. A strong infrastructure of social and environmental safeguards has also been developed for jurisdictional REDD programs to ensure protection of rights and interests of local communities, the participation and consultation of forest-dependent communities and indigenous peoples, and the sharing of benefits with local stakeholders. Most recently, the Rio Branco Declaration has specified that a substantial share of any finance will be dedicated to forestdependent communities, smallholders and indigenous peoples.¹⁶ As recommended by the REDD Offset Working Group (ROW), California should link only to jurisdictional REDD programs that demonstrate the implementation of highquality safeguards that are consistent with the UNFCCC REDD Social and Environmental Standards (SES). The ROW developed a comprehensive set of structural and legal recommendations to the state of California for the design of a compliance-grade jurisdictional REDD program that links only to the highest quality offsets.¹⁷

COST-CONTAINMENT

REDD credits have the ability to fill a precarious supply gap in offsets that the ARB is working to fix. To date, there have been roughly 11.4 million ARB offset credits issued^{iv}, all of which have come from domestic emissions reductions from Ozone Depleting Substances (ODS), Livestock, and U.S. Forest projects.¹⁸ There is currently a growing concern that once the cap-and-trade rule doubles in size in 2015 to cover transportation fuels, there will not be a sufficient supply of offsets (Figure 4).



+ FIGURE 4

Forecasted cumulative ARB offset supply vs. potential offset demand (2012-2020). Adapted from American Carbon Registry, 2012. ¹⁹

iii To ensure the cap-and-trade system drives real emissions reductions among regulated industries, ARB has set usage limits for international sector based offsets – where 2% of total compliance obligations are allowed to come from sector-based programs through 2017, and 4% can be used thereafter.

iv Each ARB offset credit represents the removal of 1 metric ton of CO_2 (MtCO₂e).

By 2020, the American Carbon Registry estimates that even with the addition of the three new offset protocol sources that are currently under consideration, there will still be a projected 70 million metric ton (MtCO₂e) shortage in offsets by 2020. If this supply gap persists, compliance costs for covered entities could greatly increase, thereby also raising the likelihood of higher gasoline prices in California. Offsets from jurisdictional REDD projects provide an opportunity to fill this supply gap, while reducing compliance costs. In the absence of additional offset protocols, it is very likely that general costs of AB 32 will be greater for capped businesses in addition to California residents.²⁰

IMPACTS OF IMPLEMENTING OFFSETS FROM REDUCTIONS IN DEFORESTATION IN AB 32: THE CASE OF BRAZIL

Beyond increasing the structural integrity of California's cap-and-trade system, REDD programs have the ability to yield tremendous emissions reductions by slowing deforestation. The example of Brazil demonstrates the scale of this climate solution, and the importance of financial support. Since 2006, the states of the Brazilian Amazon have reduced forest clearing by a total 86,900 km² (34,600 square miles) below the historical average, keeping 3.2 billion tons of CO_2 in forests and out of the atmosphere, as we describe in our recent article in Science



magazine.²¹ A large suite of policy and supply chain interventions contributed to this enormous decline in deforestation in Brazil, but the success is fragile due largely to a reliance on punitive measures that do not reward the producers and companies that are changing practices. Brazil has developed successful programs for slowing deforestation at the national and state level, but the promised compensation has not materialized at the necessary scale. In the absence of this positive signal, these programs are losing political commitment, allowing deforestation to rise once again.



+ FIGURE 5

How could California double or triple the contribution of AB 32 to climate change mitigation? We examine the potential impact of (a) signing the RBD and (b) announcing implementation of REDD on emissions reductions (ERs) of the states of the Brazilian Amazon alone, where 3.2 GtCO_2 in emissions have already been avoided, but where deforestation is on the rise. The differences between the future deforestation scenarios are equivalent to the reduction in emissions from AB 32 (0.3 GtCO₂) by 2020.^{22 23} California could amplify its contribution to emissions reductions if its support for the Rio Branco Declaration and implementation of the international REDD offset provision keep future Amazon deforestation slightly lower.

Most recently, the deforestation rates in the Brazilian Amazon increased 28% in 2013 from the prior year. The signal and finance provided by a market mechanism like REDD offsets within California's cap and trade program could help prevent a continued reversal toward the businessas-usual levels. The dimension of potential emissions reductions through REDD programs in the Brazilian Amazon could be double what California will achieve directly through AB 32 if it avoids even a 33% increase in deforestation from the 2013 rate by 2020; it could be triple if its implementation avoids a 68% increase from the 2013 rate (50% of the historical annual average, Figure 5). It is in this context that initiating the process to regulate the use of REDD offsets in AB 32 could greatly magnify California's contribution to climate change mitigation.



A note on methodology for calculating emissions

To illustrate the potential impact of California signing the Rio Branco Declaration and regulating AB 32's REDD provision, we estimate the change in future deforestation rates that would correspond to the emissions reductions that should be achieved by AB 32 by 2020. If CA's actions were to reduce deforestation by an amount equivalent to the highest deforestation scenario, it would triple the climate mitigation impact of AB 32. Avoided emissions are calculated by multiplying the projected total of avoided deforestation compared to the 1996-2005 annual average at the state level by the state's average carbon content of the forested portion of each state. Average carbon content per hectare is calculated from a wall-to-wall map of aboveground forest carbon²⁴, and then reduced by an emission factor to account for carbon maintained by the transitional land use as done in the Brazil National Greenhouse Gas Inventory.²⁵

CONCLUSION

Climate change is one of the greatest challenges facing humanity. California—like the other 25 governments of the GCF—speaks with urgency and authority on climate change, because its farming, its water supply, and its fire regime are all likely to be negatively impacted in a warming world. The GCF was born in California out of the promise of a CA-led international partnership to achieve large-scale reductions in GHG emissions. The wisdom of this vision has been proven in the Brazilian Amazon, through a successful, yet fragile, 70% decline in deforestation. By signing the Rio Branco Declaration and launching the regulatory process for REDD, California could help to prevent the reversal in deforestation that is already underway, as it energizes similar programs in Mexico, Peru, Indonesia, and Nigeria. Through these actions, predicted in-state transportation fuel price increases can also be softened.



ENDNOTES

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Earth Innovation Institute is a science and policy research organization headquartered in San Francisco that works to find large-scale solutions to climate change, food security and tropical deforestation.

Photos courtesy of Toby McGrath, Daniel Nepstad, and Claudia Stickler.

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