YALE FOREST FORUM
SPEAKER SERIES SUMMARY

SPRING 2023

YFF Review

How Can the Voluntary Carbon Market Make a Meaningful Contribution to Protecting Tropical Forests?

January 19 – April 27, 2023
New Haven, Connecticut, USA

Yale SCHOOL OF THE ENVIRONMENT
The Forest School

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Front cover: A researcher measures the diameter of a mangrove. Photo: CIFOR/ Daniel Murdiyarso
Left and right: Cloud forests in Ecuadorian Andes. Photo: Yeim We

YALE FOREST FORUM AND *YFF REVIEW*

The Yale Forest Forum (YFF) is the convening hub of The Forest School at the Yale School of the Environment. YFF offers weekly webinar speaker series during the academic year to provide opportunities to hear from leaders in forest management, conservation, academia, and policy. Each YFF speaker series is organized around a key theme or challenge facing forests, forestry, and people. Guest speakers represent a wide range of perspectives and organizations, including government, NGOs, and businesses, and across scales from local to international. The *YFF Review* is a publicly available output of the series, summarizing key learnings and examples from the YFF Speaker Series.

Cloud forests in Ecuadorian Andes. Photo: Yeim We

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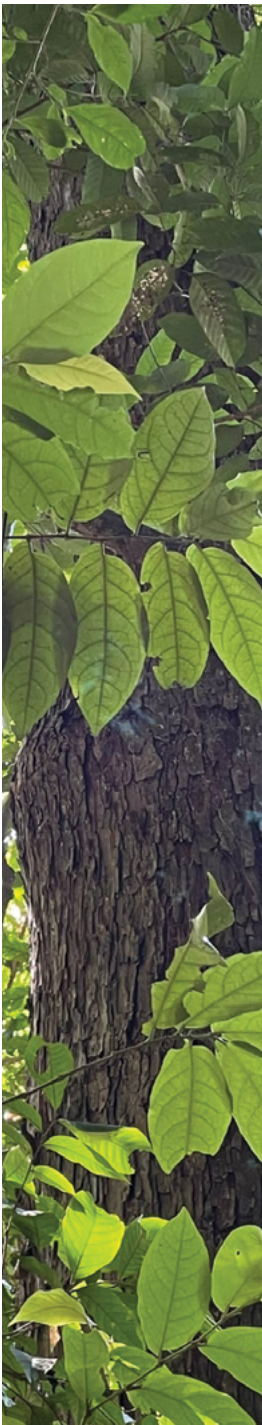


Left and right: Tropical forests hold great biodiversity value in addition to carbon sequestration potential, Panama. Photo: Sophie Roberts

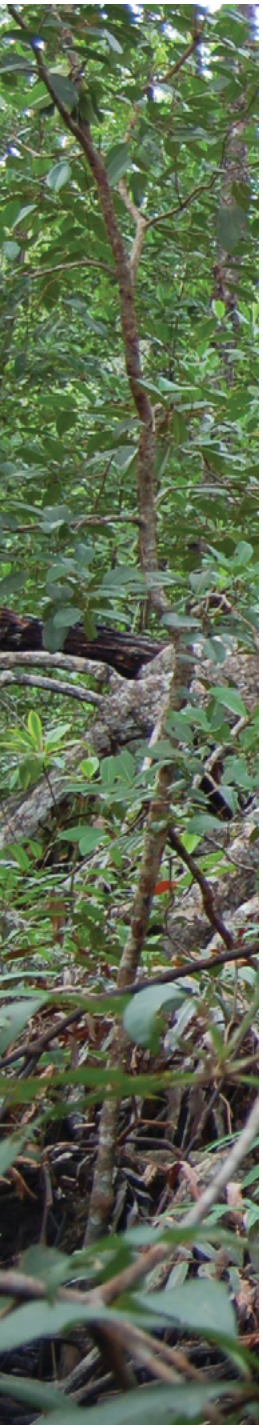
Introduction

By: Luke Sanford

In the spring of 2023, the Yale Forest Forum (YFF) brought together over 800 registered attendees for the webinar speaker series "How Can the Voluntary Carbon Market Make a Meaningful Contribution to Protecting Tropical Forests?" The series, which ran from January through April 2023, was hosted by The Forest School at the Yale School of the Environment, the Yale Applied Science Synthesis Program, the Yale Center for Natural Carbon Capture, and the Yale Center for Business and the Environment. Tropical forests play a crucial role in regulating the Earth's climate and supporting immense biodiversity. However, despite increased global recognition of their importance, tropical forests continue to be lost at alarming rates, with annual deforestation of around 12 million hectares in recent years. This deforestation is a major contributor to climate change, accounting for 11% of global CO_2 emissions in 2019.

Reducing Emissions from Deforestation and Forest Degradation (REDD+) programs aim to create financial incentives for developing countries to protect their forests. REDD+ negotiations were formally started in 2007 under the United Nations Framework Convention on Climate Change (UNFCCC), finalized as the Warsaw Framework for REDD+ in 2013, and incorporated into the Paris Agreement in 2015. Since then, many tropical forest countries have made significant progress in preparing for and implementing REDD+, with support from donor governments and multilateral institutions. However, accessing sufficient, consistent financing for REDD+ remains a challenge.

Aerial view of the Amazon Rainforest, near Manaus, the capital of the Brazilian state of Amazonas. Photo: 2011CIAT/NeilPalmer.



Carbon markets have emerged as a promising source of funds for REDD+ and other forest conservation efforts. The voluntary carbon market, in which companies and individuals purchase carbon credits to offset their emissions, has seen rapid growth in recent years. Forecasts project the market to grow from $2 billion in transactions today to $10-50 billion by 2030. This presents a major opportunity to channel much-needed finance to protect tropical forests.

However, the voluntary carbon market faces challenges around ensuring the quality and integrity of forest carbon credits. Questions have arisen over whether REDD+ projects are achieving real, additional, and permanent emissions reductions. The treatment of High Forest, Low Deforestation (HFLD) areas under REDD+ is another topic of debate. Indigenous peoples have also raised concerns about whether their rights and traditional knowledge are being adequately respected in REDD+ projects.

To explore these critical issues, the Yale Forest Forum convened a diverse group of expert speakers, including leaders from tropical forest countries, Indigenous communities, carbon market standard-setting organizations, conservation NGOs, academia, and the private sector.

The series addressed questions, including:

1. What is the current state of the voluntary carbon market and its role in funding REDD+?
2. How can forest carbon projects and programs ensure social and environmental integrity?
3. What are the perspectives of Indigenous peoples on carbon markets and REDD+?
4. How can different scales of crediting — project, sub-national, and national — be integrated?
5. What improvements are needed in carbon market standards and infrastructure?
6. How can the voluntary carbon market complement other sources of REDD+ finance?

Photo: CIFOR/Daniel Murdiyarso

Through their diverse insights, the speakers illuminated both the enormous potential and the complex challenges involved in mobilizing carbon market finance for tropical forests. We hope this review of the series provides readers with a clearer understanding of the issues at stake and the work being done by committed stakeholders around the world to realize the promise of the voluntary carbon market for protecting these vital ecosystems.

A NOTE TO THE READER FROM THE EDITING TEAM

Forest carbon credits and carbon markets are parts of a rapidly evolving field. This Review *reflects the state of the market and information at the time of the series, spring 2023, as shared by each participating speaker. There have been changes and transformations in this field since that time.*

View of Brazilian tropical forest from a canopy observation tower.
Photo: Skye Hellenkamp

WATCH SESSION RECORDING

Why Understand Markets for Tropical Forest Carbon Credits? Why Now?

Frances Seymour

LEARN MORE

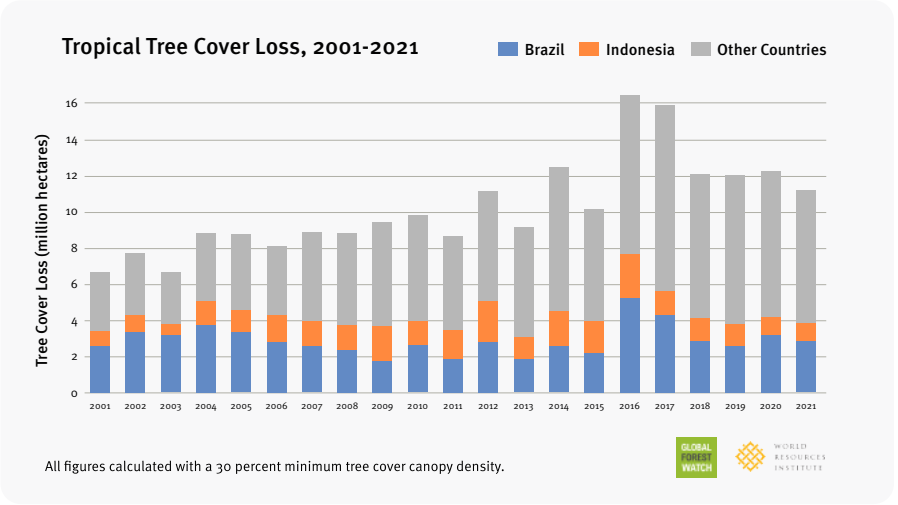
Presented: January 19, 2023

FRANCES SEYMOUR, *Distinguished Senior Fellow, World Resources Institute; McCluskey Fellow, Yale School of the Environment*

Summary by: Nick Nugent

Frances Seymour, distinguished senior fellow at World Resources Institute, kicked off the spring 2023 Yale Forest Forum series by providing an overview of the current state of the market of tropical forest carbon credits. Seymour noted that there is a general upward trend in the global rate of tropical deforestation. Around 12 million hectares of tropical forests have been lost annually over the last seven years. Commercial agriculture — including for cattle pasture, soy, and oil palm, as well as fast-growing timber — has driven most of this deforestation. The emissions from tropical deforestation are globally significant, accounting for 11% of global emissions in 2019. If tropical tree cover loss were a country, it would be ranked third in CO_2 emissions after China and the United States. By the end of this decade, we must stop or reverse tropical deforestation to meet the goals of the Paris Agreement, according to the Intergovernmental Panel on Climate Change. The imperative to keep tropical forests standing goes beyond their management of global greenhouse gases. Recent studies show that the biophysical impacts of tropical forests — such as albedo and evapotranspiration — provide additional cooling services.

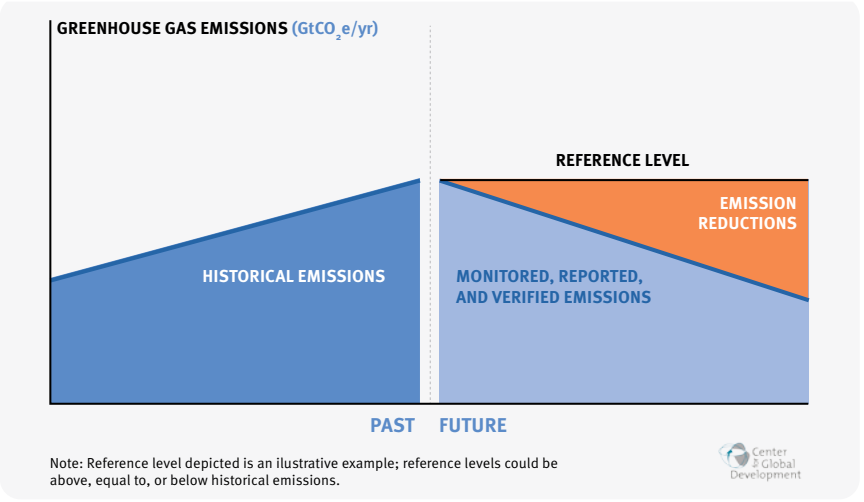
Seymour highlighted that there are many effective strategies underway to protect tropical forests. These include strengthening protected areas, combating illegal deforestation, affirming Indigenous rights, and removing deforestation from commodity supply chains and financial portfolios. In addition to these strategies, carbon markets can effectively motivate governments, companies, and communities to prevent and reverse deforestation.



Through the 21st century, tropical tree cover loss has remained persistent, leading to significant greenhouse gas emissions. Figure courtesy of Frances Seymour. Data Source: Global Forest Watch.

The Reducing Emissions from Deforestation and Forest Degradation (REDD+) instrument is the major strategy for reducing deforestation that has been negotiated under the UN Framework Convention on Climate Change (UNFCCC). Seymour explained that the idea of REDD+ originated in Brazil as a performance-based finance scheme aimed at addressing deforestation. The REDD+ process involves developing a historical emissions level based on observed deforestation patterns. Any progress in reversing the historic deforestation trend is rewarded through results-based payments or market-based finance. Most REDD+ projects to date have been developed at a project scale, meaning project developers demarcated boundaries and reported reductions in deforestation over time within those boundaries. The 2015 Paris Agreement, however, incorporates REDD+ at the jurisdictional scale, meaning that REDD+ program performance is measured at the national scale or that of large subnational jurisdictions such as states and provinces. Jurisdictional REDD+ provides an opportunity to protect large swathes of tropical forests by engaging with national and subnational governments.

To participate in REDD+, countries must first undergo "REDD+ readiness" processes, where they outline their strategies, develop forest monitoring systems, set reference levels, and put in place public consultations and social safeguards. Much investment has been put into readiness processes over the past 15 years. Over that period, several standards for crediting tropical forest carbon emissions reductions and removals have been developed, starting with standards for project-based crediting, followed by frameworks developed by multilateral programs and compliance schemes. More recently, organizations have developed independent jurisdictional scale crediting standards, including Verra's Jurisdictional and Nested REDD+ (JNR) and Architecture for REDD+ Transactions (ART).



After a program sets a reference level based on historic greenhouse gas emissions, credits are granted for the difference between the set reference level and the actual measured emissions quantities in the crediting area. Figure: Seymour and Bush, 2016.

The emergence of jurisdictional-scale REDD+ has drawn commitments from prospective buyers in governments and the private sector. The LEAF Coalition, for example, has received over $1.5 billion in commitments to purchase jurisdictional-scale REDD+ credits. These commitments have taken place in the context of renewed commitments to the forest-and-climate

agenda at recent Conferences of the Parties to the UNFCC. At COP26 in Glasgow, Scotland, over 100 heads of state committed to halting and reversing forest loss by 2030. At COP27 in Sharm el-Sheikh, Egypt, the Forest and Climate Leaders' Partnership launched to implement that pledge, including through the use of voluntary carbon markets.

As a result of growing corporate climate action, demand for carbon credits jumped in 2021. Recent reports forecast that the voluntary carbon market will grow from current transactions of $2 billion to $10 billion by the end of the decade. However, in 2022 both issuances and retirements of forest carbon credits declined. Recent news has contributed to a dampening of demand by claiming that forest carbon credits are not legitimate and often used for green-washing, leading to corporations shying away from the market. Norm-setting bodies such as the Voluntary Carbon Markets Integrity Initiative (VCMI) are addressing these claims by offering guidance to corporate buyers on what claims they can make with their carbon credit investments. At the time of this presentation, the VCMI's official guidance was set to be released by June 2023.

DEMAND SIDE ISSUES

At the time of Seymour's presentation, another demand-side constraint to the market was the uncertainty around "beyond value chain mitigation," or BVCM. The Science Based Targets initiative (SBTi) provides guidance on companies' decarbonization goals and strategies. The SBTi does not currently allow companies to purchase credits to count against their decarbonization targets. If a company goes beyond their own decarbonization goals by purchasing additional credits, SBTi guidance is unclear on the recognition they will receive. Additionally, there is also confusion about whether credits that represent emissions reductions will count the same as credits that represent carbon removals. The SBTi only considers removals as eligible to neutralize emissions at the point of net-zero, and this leads some companies to believe that tree planting programs that increase carbon sequestration are more desirable than credits from reduced emissions from deforestation, including REDD+. At the time of Seymour's talk, the SBTi was set to provide guidance on this confusion later in 2023.

Agroforestry in Panama. Photo: Anita Weissflog

SUPPLY SIDE ISSUES

The system for rewarding jurisdictional-scale performance is transitioning from results-based payments made by governments to market-based transactions. Results-based programs often provide a fixed price per tonne for each emission reduction or removal, while the open market leads to greater fluctuation in credit price. Countries are currently assessing their options for issuing credits from their jurisdictional REDD+ programs. Some supplier countries are claiming that the UNFCCC framework and review process is sufficient, and thus independent standards and verifiers are not necessary.

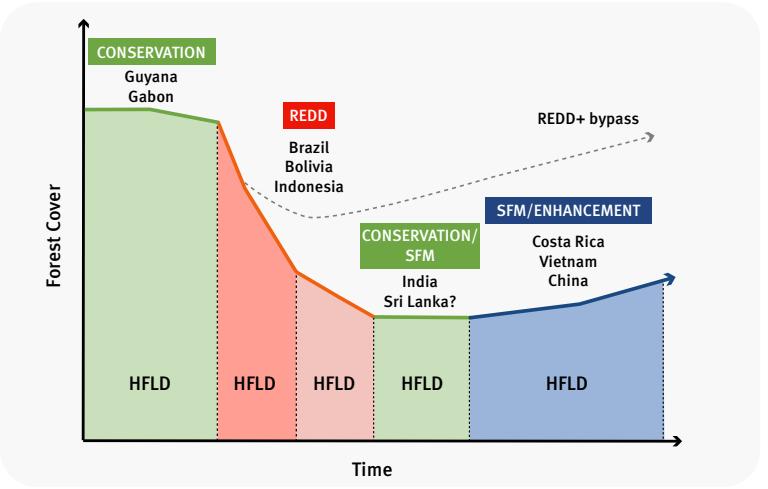
In the months preceding Seymour's presentation, there had been significant adverse press attention to forest carbon credits that raised concerns about the environmental and social integrity of project-based credits. An article published in *The Guardian* claimed 90% of nature-based credits on the Verra platform do not represent actual tons of carbon emissions avoided or reduced. Additionally, the comedian John Oliver referenced investigations by ProPublica and Bloomberg on his popular TV show *Last Week Tonight* in a sharp criticism of nature-based carbon credits. The Integrity Council for the Voluntary Carbon Market (ICVCM) is tracking these integrity issues and published a set of Core Carbon Principles and an Assessment Framework.

Nesting of project-scale crediting within larger jurisdictional-scale crediting is another challenge that needs to be addressed. Jurisdictional crediting can be advantageous because it incentivizes governments to act and directly benefit from participation in carbon markets. The recent criticisms of over crediting in project-based REDD+ reduces the incentive for governments to participate in jurisdictional-scale REDD+ because any credits issued by projects must be subtracted from the jurisdictional total. In response, some countries have halted issuances from project-level REDD+, and this trend is reflected in the stable trend of issuances from 2021 to 2022. The Tropical Forest Credit Integrity (TCFI) initiative is releasing guidance on how to nest projects within larger jurisdictional schemes.

Persistent bias against nature-based credits is also due to concerns about uncertainties in measuring carbon fluxes over

Agroforestry in Panama. Photo: Anita Weissflog

large areas, and concerns about the additionality of credits issued by High Forest, Low Deforestation (HFLD) jurisdictions. These are countries, such as Guyana and Gabon, that have large areas of forest that never experienced widespread deforestation. The issue of how to credit these countries is currently being debated. Seymour noted that these criticisms seem to neglect the benefits of forest conservation and do not consider the bio-physical climate benefits of tropical forests in addition to those mediated through the global carbon cycle.



A general trend through time demonstrates that many highly forested jurisdictions (HFLD) eventually experience high rates of deforestation (HFHD). Norm-setting organizations are discussing how to best include these not yet deforested jurisdictions in the carbon market. Figure courtesy of Frances Seymour.

Finally, the social integrity of forest carbon projects is a major supply-side hurdle that needs to be addressed. There are concerns around how putting a price on carbon affects the rights and roles of Indigenous peoples. An important shift in the discourse is taking place, moving from a “safeguards” framing — in which Indigenous peoples are passive victims or recipients of benefits — to a full partnership model. Many Indigenous territories are in HFLD jurisdictions, so the crediting of HFLD areas is of great interest to Indigenous peoples living in these forests.

UPCOMING STANDARDS TO ADDRESS SUPPLY AND DEMAND SIDE ISSUES

Norm-setting bodies, such as the ICVCM, TFCI, VCMI, and SBTi, are all attempting to address concerns related to carbon markets. Each body is proposing standards and norms to address various aspects of efforts to ensure credits from nature-based programs are of high social and environmental integrity, and that the use of such credits by buyers also reflects high integrity. The ICVCM's Core Carbon Principles — and related Assessment Framework — are an example of how norm-setters are calling for carbon suppliers to undergo increasingly strict tests to verify specific characteristics of social and environmental integrity. ICVCM focuses primarily on ensuring the accurate quantification of CO_2 impacts, confirming the permanence of those impacts, and addressing potential leakage. To demonstrate accurate quantification of CO_2 impacts, for example, jurisdictional REDD+ program developers must meet certainty thresholds to validate their emissions reductions estimates. Reaching a high-level of certainty in large-scale REDD+ programs is extremely difficult in light of the variability of terrestrial ecosystems. A certainty threshold that is set too high becomes impossible to meet and may end up disincentivizing large-scale forest conservation, explained Seymour.

CASE STUDY: GUYANA

Seymour described the case of Guyana to illustrate the accomplishments and challenges of the jurisdictional approach to forest carbon crediting. Guyana issued the first jurisdictional- scale credits under the ART TREES standard in December 2022. The issuance of 33 million credits was immediately followed by the first transaction of jurisdictional-scale credits, totaling $750 million over a 10-year period. However, the credits are being purchased by an oil and gas company, and there are claims that the HFLD credits are not additional, leading to controversies around the transaction. Further, a leading Indigenous activist group is claiming that the consultation process with Indigenous people was inadequate. This case study reflects the various issues on the demand and supply side of jurisdictional-scale forest carbon crediting discussed in this presentation.

History of International Cooperation on Tropical Forest Conservation with Emphasis on the Brazilian Amazon REDD+

WATCH SESSION RECORDING

Paulo Moutinho

LEARN MORE

Presented: January 26, 2023

PAULO MOUTINHO, PhD, *Senior Scientist, Amazon Environmental Research Institute*

Summary by: Grace Bachmann

Paulo Moutinho, senior scientist and co-founder of Amazon Environmental Research Institute (IPAM), began his talk by emphasizing the fundamental aim of the United Nations program for reducing emissions from forest degradation and deforestation in developing countries (REDD+). Moutinho underscored that REDD+ is about the preservation of life and is not simply a mechanism for reducing greenhouse gas emissions with a market-based approach. Moutinho described REDD+ as a tool for reducing poverty, promoting economic prosperity, and protecting forest cover. He then zeroed in on the Amazon basin's global significance for carbon storage — its 90-100 billion tons of stored carbon is equivalent to a decade of global emissions — and thus its role as the home of REDD+.

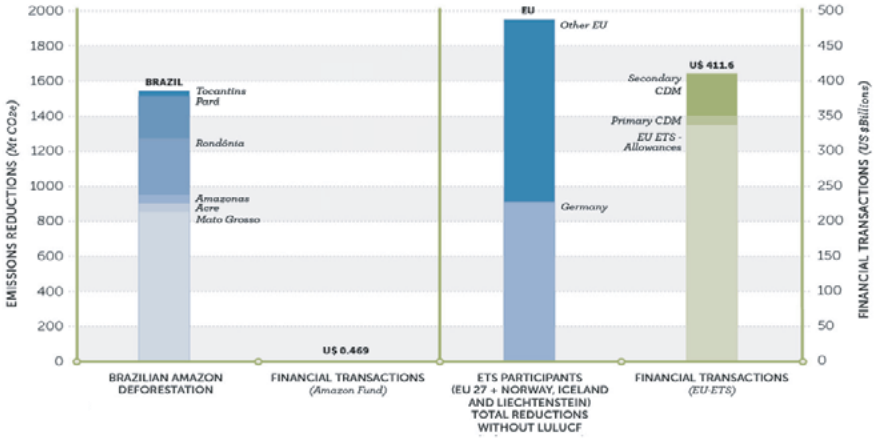
Deforestation in the Amazon has threatened Indigenous language, culture, and knowledge as well as biodiversity and ecosystem services beyond the Amazon basin's borders over the last 40 years. Moutinho described the positive feedback loops of climate change, deforestation, and degradation, leading to a drier Amazon prone to fire and food insecurity. These compounding factors form an unshakable local and global rationale for REDD+.

In laying out REDD+'s historic evolution, Moutinho posed the foundational REDD+ question: If emissions from deforestation are part of the climate problem, why not be part of the solution? Since the development of the Kyoto Protocol, parties like Brazil — with pressure from IPAM, the Amazon Brazilian Civil Societies, and other

organizations — have pushed for inclusion of avoided emissions from deforestation in the Clean Development Mechanism (CDM). The Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) has acted as the primary venue for governments to debate and negotiate the workings of the REDD+ mechanism. At COP9 in Milan in 2003, IPAM and the Brazilian government shared their proposed concept for compensated reduction of deforestation: developing countries would receive compensation if they elect to reduce national-level deforestation to below historic levels and commit to either stabilize or further reduce deforestation in the future.

Emissions Reductions (CO_2) and Finance

Brazilian Amazon and EU – ETS (Emissions Trading Scheme), 2008-2010



Between 2008 and 2010, the nine Brazilian Amazon states reduced nearly the same level of GHG emissions through their REDD+ programs as the E.U. Emissions Trading Scheme (ETS). However, the Amazon states generated only $400 million while the EU-ETS generated $400 billion. Figure courtesy of Paulo Moutinho.

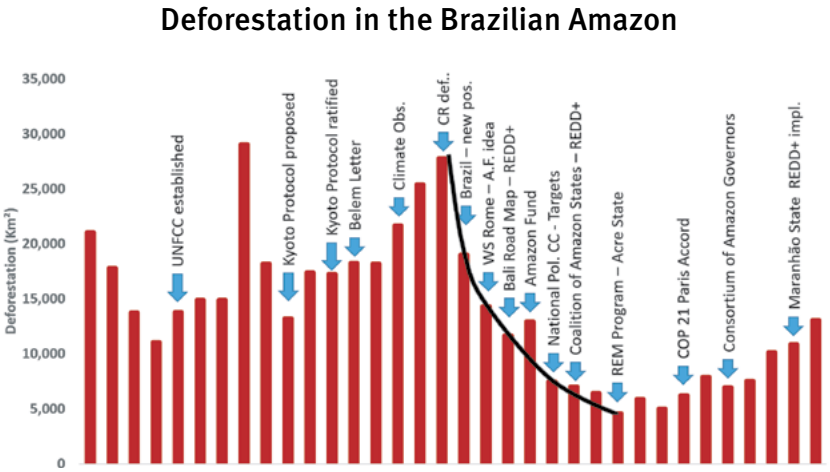
Subsequent COP meetings saw progressive evolution of REDD+ and its incorporation into the UNFCCC's DNA, while Brazil continued to demonstrate the function and flaws of each REDD+ iteration. In 2007, REDD+ was ultimately ratified at COP13 in Bali and played a critical role in climate change mitigation under the

Bali Road Map. Through these advances, the UNFCCC secretariat paved the way for its present role as the hub for reporting country-level reference levels, readiness, and results — all of which are requisites for results-based financing.

In 2009, the UNFCCC enumerated five activities that qualify as REDD+: reductions of emissions from deforestation, reduction of emissions from degradation, forest protection, enhancement of forest carbon stocks, and sustainable forest management. The same year, with the launch of the National Policy for Climate Change, Brazil continued its trailblazing role in REDD+ with support from the Norwegian government's Amazon Fund. Over the next decade, the governments of Brazil's nine Amazonian states developed their own state-level REDD+ strategies to drive the national strategy around jurisdictional REDD+. In 2011, the REDD for Early Movers (REM) program aided several Brazilian states and other jurisdictions globally to adopt REDD. Despite this rapid progress and Brazil's leadership, early financial transactions fell below expectations. Brazilian states received a negligible fraction of compensation through the Amazon Fund (~$400 million) when compared to the European Union Emissions Trading Scheme (~$400 billion). Nevertheless, the nine Brazilian states continued to develop their own jurisdictional plans for REDD under several partnerships and phases.

Brazilian states received a negligible fraction of compensation through the Amazon Fund (~$400 million) when compared to the European Union Emissions Trading Scheme (~$400 billion).

Moutinho shared the strengths and weaknesses of project-scale and jurisdictional-scale programs. He identified the use of historic baselines as a strength of jurisdictional REDD+ when compared to REDD+ projects, which use hypothetical alternative scenarios of emissions that would occur without the project as their baseline. Moutinho also discussed the difficulty of aligning the goals and outcomes of individual projects, and he noted that project objectives often lead to social conflicts, land grabs, and infringement on land rights.



Deforestation rates in the Brazilian Amazon declined significantly with the onset of state level Jurisdictional REDD+ programs in 2003. Figure courtesy of Paulo Moutinho.

While these challenges are severe, Moutinho pointed to several opportunities for Brazil to better integrate REDD+ at jurisdictional scales and to prevent conflicts. Currently undesignated public forests are vulnerable to land grabbing, illegal deforestation, and illegal occupation. The government, however, has the power and mandate to designate these public forests for conservation, sustainable use, or as Indigenous land. Moutinho closed by connecting forest protection through REDD+ with Brazil's political history, demonstrating that REDD+ success is contingent on how governments do or do not take seriously their mandate to address deforestation.

REDD+ Crediting from the Perspective of Supplier Countries

WATCH SESSION RECORDING

Presented: February 2, 2023

ROSELYN FOSUAH ADJEI, *Director for Climate Change and REDD+ Coordinator, Forestry Commission of Ghana*

Summary by: Maude Gibbins

Roselyn Adjei

LEARN MORE

Roselyn Adjei, director of climate change at Ghana's Forestry Commission and coordinator for the National REDD+ Focal Point for Ghana, joined YFF to share a supplier nation's perspective on REDD+ crediting. Adjei introduced Ghana as a country whose major commodities include forest products, namely cocoa and timber. The Forestry Commission of Ghana is a state agency responsible for regulating the utilization and conservation of forest and wildlife resources. The Commission designs and facilitates the implementation of climate change mitigation and adaptation strategies. This involves working with multiple stakeholders, in particular local communities, as well as international climate finance sources via the REDD+ framework.

Considering REDD+ as a whole, Adjei noted that forests receive only about 3-5% of global climate finance, despite the Paris Agreement's recognition that forests are expected to contribute up to a third of global emissions reductions and carbon sequestration, which are needed to limit climate warming to 1.5 degrees Celsius.

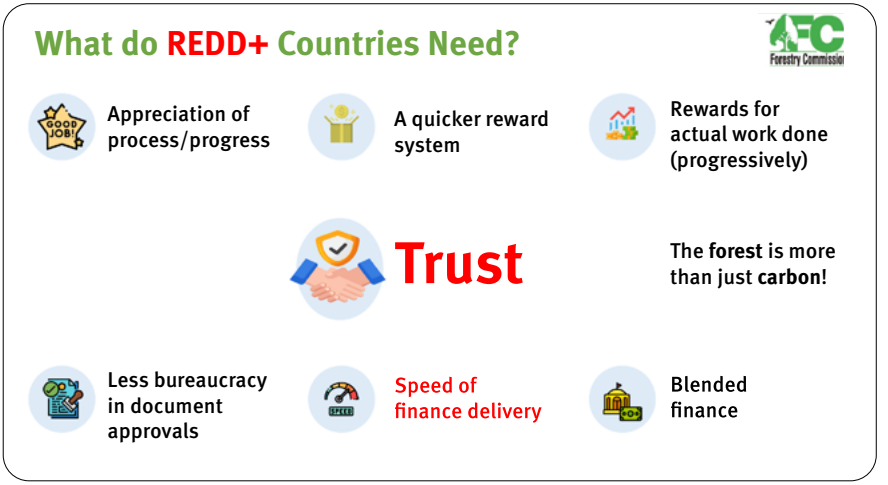
IMPLEMENTING REDD+ IN GHANA

Countries engaging with REDD+ implement the crediting process over three stages. First, there is the "readiness stage," which involves developing national strategies to address the drivers of deforestation. Second, the "piloting stage" involves implementing national policies or action plans to incorporate the strategies. Ghana has completed both stages and, with support from the Forest Carbon Partnership Facility (FCPF) and the Green Climate Fund (GCF), is currently in the third and final

"results-based stage." This stage involves deploying actions at scale, measuring, reporting, and verifying results, and receiving payment. An important challenge in this phase is governing at the landscape level to ensure inclusivity for all people, including all genders and marginalized groups.

Countries may implement REDD+ nationally or using subnational zones. Ghana implements REDD+ sub-nationally. The Forestry Commission distinguishes regions based on ecological zones ranging from savannah to tropical forest to properly address the specific drivers of deforestation within each zone. The high-forest zone — where cocoa production occurs — has reached the results-based stage and is receiving payments from the FCPF. In the first six-month monitoring period, $4.8 million was paid for 972,456 tons of CO_2 sequestered. Ghana is the second country in Africa and the fourth country in the world to receive such results-based payments. Mozambique, Costa Rica, and Indonesia preceded Ghana in reaching this stage.

The results-based phase also gives countries the option to engage with carbon markets. There are a range of standards in both the compliance and voluntary markets under which supplier countries



For true progress to take place, REDD+ countries must receive support in their efforts to reduce emissions from deforestation from a variety of corporate, governmental, and donor entities. Figure courtesy of Roselyn Fosuah Adjei.

Ghana. Photo courtesy of Roselyn Fosuah Adjei.

like Ghana can choose to sell offsets. The differences between the standards raise a challenge for suppliers. For example, within the same geographical area, supplier countries need to consider different reference periods to be eligible for different standards. On the country scale, this leads to the need to understand how various regions and jurisdictions will respond to the different standards. Often, just a single team is tasked with carbon project implementation across an entire country, requiring expertise in the nuances of the various standards.

In the context of these challenges, there are several improvements that would support countries in implementing REDD+. The most needed is up-front financing to support capacity-building. This includes more rapid rewards for work done progressively and recognizing that funding is needed for the first two stages before results-based payments can be earned.

Furthermore, Adjei suggested that improvements to the voluntary carbon market (VCM) such as increased transparency, recognition of the values that forests provide beyond carbon sequestration, and an increased appreciation and understanding of the communities involved on the supply side of credits would lead to an even more meaningful contribution of VCMs to forest preservation.

WATCH SESSION RECORDING

REDD+ Crediting from the Perspective of Buyer Countries and Corporations

Sean Frisby

LEARN MORE

Presented: February 9, 2023

SEAN FRISBY, *Managing Director, Emergent*

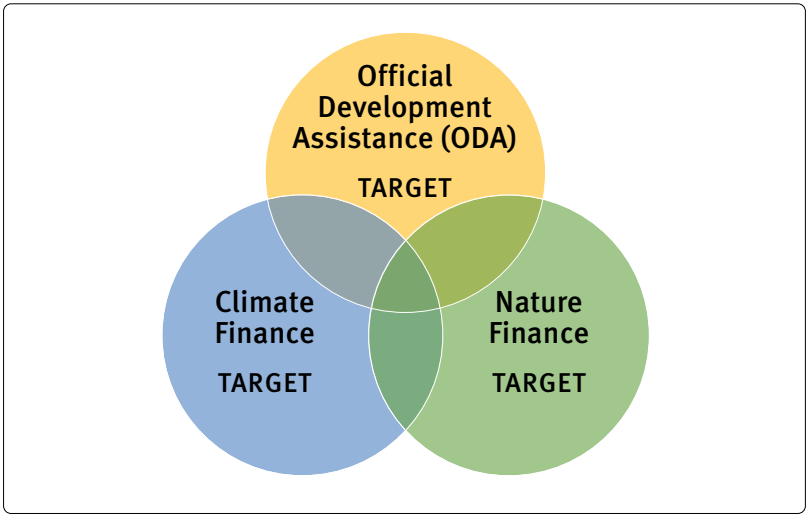
Summary by: Jinsui Song

Sean Frisby, managing director at Emergent, joined YFF to examine REDD+ from the buyer's perspective through the lens of donor governments and private corporations. Government aid budgets have been the primary historical funding source for REDD+ finance, while corporate investment in REDD+ is growing with the emergence of more robust forest-related carbon markets. Frisby focused on the motivations of both donor governments and corporate buyers, how their differing interests shape their REDD+ engagements, and how they can work together to catalyze efforts to reduce deforestation on the ground.

Frisby explained that donor governments support REDD+ for numerous reasons including good faith obligations to international agreements, aid-effectiveness, and political motives. Financial support for REDD+ sits at the intersection of development assistance, climate finance, and nature finance, and is seen as an obligation that countries have agreed to as part of the REDD+ framework. While many donor governments do not seek to buy carbon credits for their own use, they do play a crucial role in providing results-based aid.

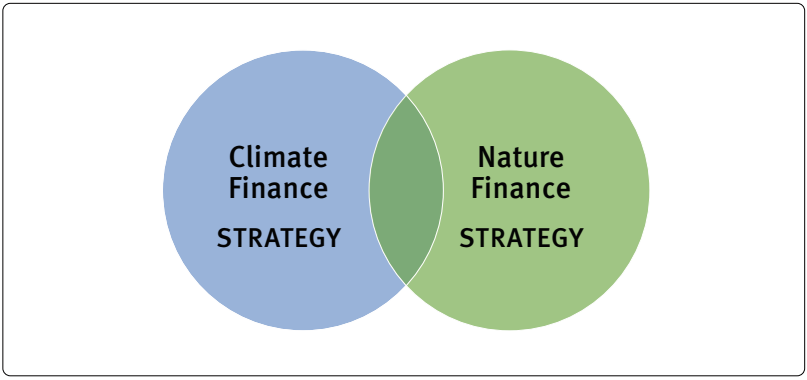
While donor and buyer governments allow for flexibility in financing structures, pricing contracts, and credit delivery, Frisby highlighted the risks to double-burden forest countries by replicating the requirements of ex-ante aid provided before the generation of REDD+ results in the ex-post results-based payments delivered after measuring, reporting, and verification (MRV). REDD+ results-based payments are intended to reward

environmental and social investments already made and outcomes already achieved. However, funds received by forest countries in results-based REDD+ activities risk facing the same level of upfront vetting and scrutiny as those received in more traditional grant-style programs, a phenomenon Frisby called the "aidification of REDD+." He instead suggested that implementers of the REDD+ framework must recognize the leadership and autonomy of forest countries, especially in efforts to harness finance from private markets.



A small number of donor governments are typically motivated to financially support REDD+ because it contributes to their official development assistance targets and to their climate finance pledges through the framework of the Paris Agreement. Figure courtesy of Sean Frisby.

For private corporations, participation in REDD+ is an evolving story, marked by a massive surge of interest in recent years. Frisby explained that corporate forerunners are motivated by the desire to demonstrate best practices, enhance resilience, and communicate corporate action on climate and increasingly on nature. Corporate participation in REDD+ emphasizes environmental and social integrity — as well as systemic action — and is therefore gravitating toward jurisdictional credits and independent standards for



Corporate donors and buyers are increasingly motivated to support REDD+ to meet their internal targets for best practice and impact on climate and biodiversity conservation goals. Figure courtesy of Sean Frisby.

monitoring, reporting, and verification. Frisby further pointed out that corporations' need for on-time delivery and cost minimization is also a shaping force in the REDD+ market.

Frisby suggested that private REDD+ interests can be further catalyzed by donor governments' roles in providing seed investment and technical assistance to carbon projects and offering assurance to the availability and delivery of credits to private buyers. However, he also called for complementary efforts between governments and corporations to avoid supplanting each other's interests and funds. Pointing to the significant gaps in the capital necessary for forest conservation and restoration, Frisby called for more formal recognition of private corporations that have gone the extra mile to inset and offset their carbon emissions through voluntary markets. Finally, Frisby highlighted the potential for the REDD+ market to accelerate the achievement of results on the ground through increased upfront investment and advance payments.

REDD+ Crediting from the Perspective of Indigenous Peoples

WATCH SESSION RECORDING

Presented: February 16, 2023

JUAN CARLOS JINTIACH (SHUAR PEOPLE), *Executive Secretary, Global Alliance of Territorial Communities; Technical Advisor to the Coordinator of Indigenous Organizations of the Amazon Basin*

RENATO RÍOS, *Economist, Peru; Executive Director, Sustainable Rural Development; Technical Advisor to the Coordinator of Indigenous Organizations of the Amazon Basin and ANECAP*

Juan Carlos Jintiach

Renato Ríos

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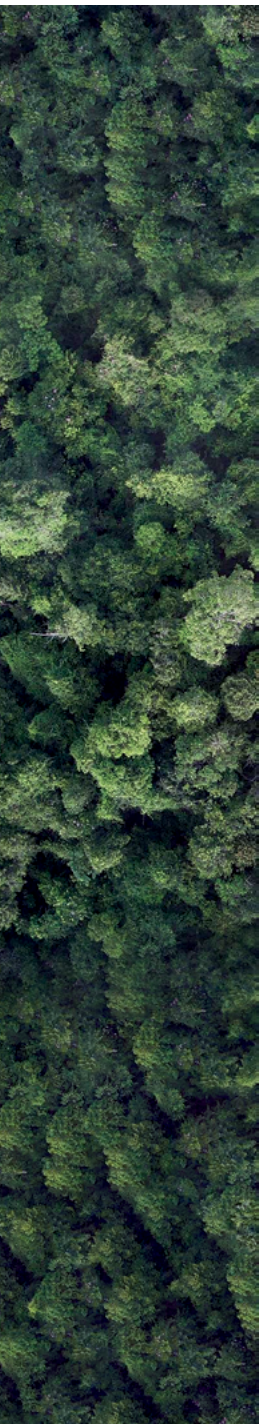
Summary by: Emma Grover

YFF welcomed Juan Carlos Jintiach and Renato Ríos to share their insights on Indigenous peoples' perspectives on voluntary carbon markets in the tropics. Both Jintiach and Ríos are technical advisors to the Coordinator of Indigenous Organizations of the Amazon Basin (COICA). Jintiach is a member of the Shuar people of the Ecuadorian Amazon and serves as the executive secretary to the Global Alliance of Territorial Communities (GATC). He advocates for the rights of Indigenous peoples and strives to create space for Indigenous communities in international work. Ríos serves as the executive director of Sustainable Rural Development (DRIS) and as a technical advisor to ANECAP. He is an economist working with Indigenous and local communities in the Amazon to support efforts to protect Indigenous lands and promote Indigenous climate action.

The pair emphasized the diversity and wealth of resources, including land, languages, cultural traditions, and ancestral knowledge, held within Indigenous and local societies. The two visually illustrated the extensive range of land under Indigenous care across all tropical regions, emphasizing that each community is unique with its own societal structures and modes of governance.



The autonomy of Indigenous communities to organize based on their unique traditional beliefs is essential, specifically in the context of carbon projects. In their roles, Jintiach and Ríos begin all projects at the local scale to better understand and account for location-specific context, moving to national and international discussions only after this is accomplished.

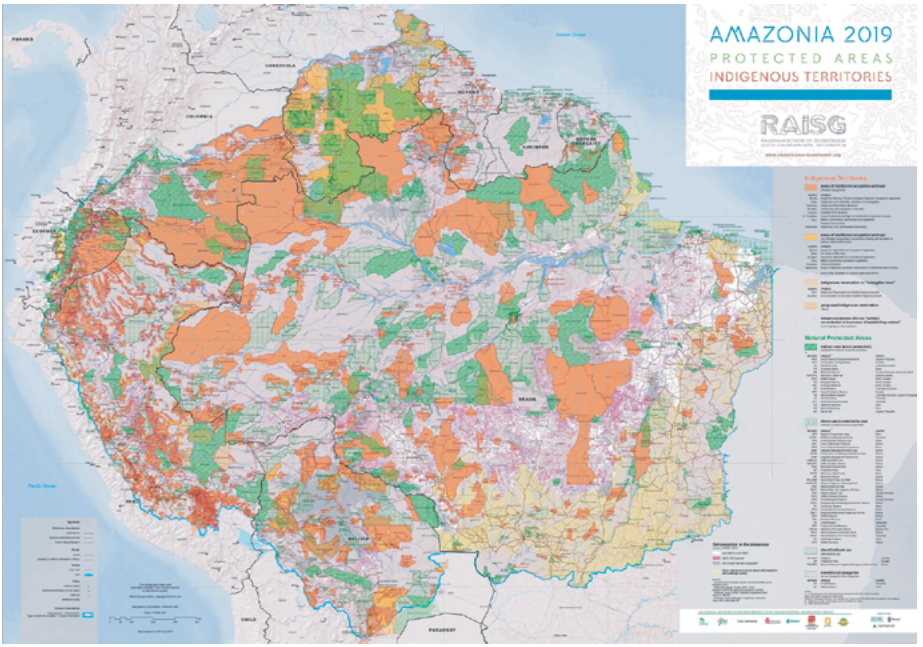
COICA advocates for effective participation and fair access to climate funds, in addition to the implementation of real safeguards for Indigenous peoples. As new opportunities to access funds emerge, COICA believes there is a need to review and evaluate existing standards from Indigenous communities' perspectives. In addition, there is a great need for transparent communication, bringing in experts that can share rapidly developing information on carbon markets with local communities. Information exchange that decreases the use of long acronyms and scientific jargon is crucial for a more inclusive system. Respectful collaboration and partnerships are key to increasing information flows and ensuring Indigenous peoples take their deserved seat at the carbon market table. True collaborative partnerships mean giving Indigenous communities an equal voice in decision making processes and enabling receipt of a fair distribution of benefits. Those outside of these communities must acknowledge the value of contributions from local communities and honor traditional community knowledge.

Jintiach and Ríos noted that natural climate solutions can bring significant co-benefits to Indigenous peoples and local communities while also helping to preserve forests. In the Amazon, REDD+ is Indigenous peoples' strategy for climate change mitigation, adaptation, and resilience. For REDD+ to see positive results, it must be conducted from the bottom up in close collaboration with forest-dwelling communities. REDD+ projects must recognize Indigenous economies, ancestral understandings, and local governance, while also prioritizing sustainable finance and vigilant, on-the-ground monitoring of forests. Following Amazon Indigenous REDD+ (RIA) guidelines, Indigenous communities must take the lead on projects, and credit trading must be done only with sustainable companies that aim to decrease their negative environmental impact outside of just their carbon offset portfolio.

Photo: Bibiana Alcântara Garrido

Edge habitat between forestland and pasture, Brazil. Photo: Bibiana Alcântara Garrido

Jintiach and Ríos ended their talk by highlighting key areas for growth, touching on themes that are critical for both respecting Indigenous communities and for carbon credits to successfully protect tropical forest landscapes. Indigenous peoples and local communities must be full partners — not solely beneficiaries — in processes and discussions related to carbon markets. Participatory methods that involve and value Indigenous perspectives are indispensable, and they must be considered beyond conversations on safeguards. Moreover, upfront finance is needed to enable conditions that allow local communities to effectively participate as equal stakeholders. There must be greater access to public funds as well as alliances with the private sector to sustainably finance projects.



Indigenous communities steward substantial portions (in orange and yellow) of the Amazon Basin, with these territories often adjacent to protected areas (green). Figure: Amazon Geo-referenced Socio-Environmental Information Network, 2019.

As frameworks and methodologies undergo change, greater emphasis must be placed on HFLD areas, making sure that those who have practiced sustainable forest stewardship for centuries receive proper benefits within the system. According to Jintiach and Ríos, the implementation of carbon finance that simultaneously supports Indigenous peoples, such as RIA, must recognize the historical debts for unrecognized forest and biodiversity conservation as well as stolen land. Jintiach asked listeners to "remember that this is the long haul for [Indigenous peoples]," whose entire lives are intimately connected to their forest homes. In closing, he stressed that "[Indigenous peoples] have been made invisible for years, and that is something that needs to change."

A Trader's Perspective on REDD+ Crediting

WATCH SESSION RECORDING

Presented: February 23, 2023

JESSICA ORREGO, *Director of Natural Climate Solutions and Energy Trading, Mercuria*

Summary by: Vincent Haller

Jessica Orrego

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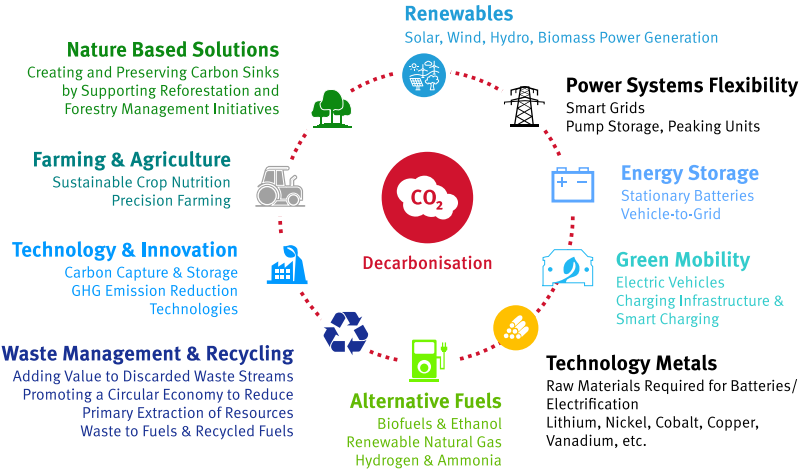
Jessica Orrego, director of natural climate solutions and energy trading at Mercuria, joined the YFF series to discuss REDD+ crediting from the perspective of credit traders. Mercuria is the third largest private trading group globally, covering a wide array of commodity markets. Orrego shared that Mercuria has recently shifted their focus to only investing in industrial sectors that contribute to the energy transition by 2025 and net-zero by 2050. Currently, they are present in all key environmental markets, including the voluntary carbon market (VCM). Even though they invest in many types of assets, the focus of this presentation was on jurisdictional REDD+ (JREDD) activities.

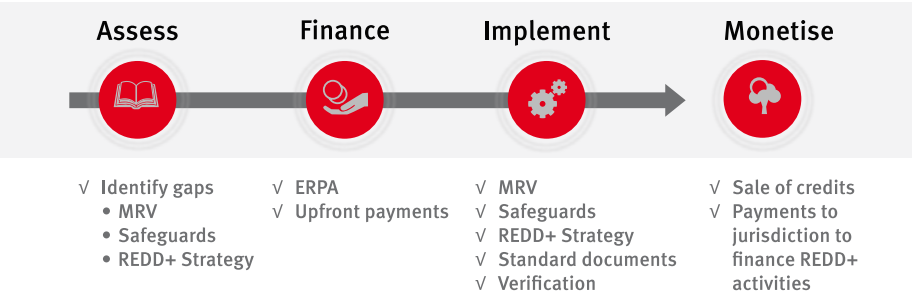


Mercuria has mandated that all new investments go to sectors working toward decarbonization of the economy, including nature-based solutions, such as forest management. Figure courtesy of Jessica Orrego.

DESCRIPTION AND ADVANTAGES OF JREDD

Orrego outlined the general steps in Mercuria's JREDD activities. First, they assess opportunities for investment within the JREDD landscape. Then they will help finance identified gaps with upfront payments. Lastly, Mercuria monetizes the issued credits to finance ongoing JREDD activities.

JREDD was originally created by the parties of the UNFCCC to guide and help fund activities in forests to reduce deforestation and degradation. To achieve this, the parties described three phases: the readiness phase, the implementation phase, and the result-based payments phase. The readiness phase includes government capacity building activities and the development of the REDD+ structure, including an action plan, a monitoring, reporting, and verification (MRV) system, a Forest Reference Emission Level (FREL), and other components. The implementation phase consists of applying the policies and measures to achieve emissions reductions within the jurisdiction. These emissions reductions are then to be rewarded with funding in the result-based payments phase.



Mercuria employs a four-step process to fund JREDD activities helping with the entire process from addressing gaps upfront, to providing upfront finance for activities, assisting with implementation processes, and facilitating credit sales. Figure courtesy of Jessica Orrego.

In this context, new standards have emerged that issue emission reduction credits for use in the VCM, including Architecture for REDD+ Transaction's The REDD+ Environmental Excellence Standard (ART TREES) and Verra's Jurisdictional and Nested

REDD+ (JNR) standard. JREDD activities are also required to respect the Cancún safeguards through a safeguard information system, fairly distribute earnings among landowners through a benefit sharing system, and consult relevant stakeholders about the impacts of the project. To generate monetizable carbon credits, the FREL estimates the average REDD+ emissions from a period directly prior to activity implementation. All emissions reductions that fall below this baseline are eligible for crediting once the JREDD activity starts — only after deductions are taken to address leakage, non-permanence risk, and uncertainty — and upon completion of third-party verification.

Orrego shared that Mercuria is interested in investing in JREDD credits because the market is moving in that direction and the approach brings many benefits. These include larger impacts in broader geographic landscapes, more conservative and additional baselines, and mitigating leakage and reversal risk by encompassing a broader project area. Mercuria therefore expects that JREDD credits will be well received in the market, considering the private sector's interest in them.

Mercuria is currently supporting JREDD activities in the Ucayali province of Peru and in the Misiones province of Argentina, which both have high forest cover and biodiversity richness, including endangered species. To address the increasing deforestation produced by expansion of agricultural activities and forestry plantations, both provinces have developed JREDD projects focused on improving the economic condition of local communities, sustainable land management, and governance.

JREDD OBSERVATIONS

Orrego shared the following lessons learned by Mercuria regarding JREDD and the VCM markets:

Working with governments:

- Having JREDD champions within governments is extremely important. Internal skills and capacity need to be developed at national and subnational levels.

Using trees to reforest pasture systems, Panama. Photo: Leah Andino

- There are often lingering finance gaps even though initial funding has been provided to develop key REDD+ components like MRV systems and REDD+ strategies.
- There is a clear need for robust frameworks, such as benefit sharing and safeguard information systems, since they provide important incentives for forest owners to reduce emissions, while ensuring respect for social and environmental safeguards for buyers.

Carbon accounting:

- Aligning national and subnational governments in carbon accounting is key to avoid double counting and to show consistency across strategies and MRV systems.
- The development of nesting systems is extremely relevant to avoid double counting, since there is an overlap of emission reductions when national, subnational, and stand-alone project-based REDD+ activities are implemented in the same area. Currently, these nesting systems are not required by all standards, but buyers and standard setting bodies are announcing further interest in considering these systems. Verra's JNR standard will require a nested baseline approach.

MARKET OUTLOOK FOR THE VCM

Orrego reflected that there has been an increased issuance of carbon credits in recent years, a third of these credits are from nature-based solution projects, including the first issuance of JREDD credits to the market by Guyana in 2022. At the time of Orrego's talk, current and potential demand sources include: the voluntary market (with 4,300 companies committed to net-zero pledges), demand from governments through Article 6.2 of the Paris Climate Agreement, and potential new compliance demand from the aviation sector. Even though the growing trend in carbon markets slowed down in 2022 and 2023, the weighted average market price in 2022 was $8.80 per ton, with a premium for nature-based credits. While interest in these types of credits is expected to grow, Orrego noted buyers are seeing purchases as non-discretionary and are engaging in significant due diligence processes to assure quality credits, with a preference for removal credits due to the guidance of the SBTi.

Pasture reforestation in Panama. Photo: Leah Andino

REDD+ Crediting from the Perspective of Project Developers

WATCH SESSION RECORDING

Presented: March 2, 2023

HASSAN SACHEDINA, PhD, *CEO and Co-Founder, Sayari Earth; Founder and Former CEO, BioCarbon Partners*

Summary by: Nadia Ahmad

Hassan Sachedina

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Hassan Sachedina, a conservationist with over 25 years of experience, is the founder of BioCarbon Partners (BCP) and Sayari Earth. He aims to benefit millions of people and millions of hectares of globally significant biodiversity areas through high-impact, carbon-financed conservation.

Sachedina started working for Wildlife Works soon after its establishment. Working with the organization and seeing the field of conservation funding and carbon markets develop from its infancy, he noticed that project developer competition at the time was centered in European capital cities and San Francisco, California, with primary attention being paid to the conservation of tropical rainforests.

On the other hand, Sachedina recognized that certain dryland regions of Africa present unique conservation and poverty alleviation issues deserving of attention. These regions were frequently disregarded since they store less carbon, even though they influence the lives of over half a billion people and hold conservation significance. Sachedina wanted to achieve long-term sustainability and resilience in Africa, so he worked to discover the mechanisms that would allow conservation efforts to be successful in these overlooked regions. He noted that while efforts to preserve the environment on a global scale are essential, these efforts also need to be tailored to meet the specific problems of individual regions down to the household level of impact.

Sachedina uses community forest projects in Zambia as success stories for creating localized solutions to forest conservation. Image courtesy of Sachedina.

In his remarks at YFF, Sachedina mentioned the necessity of undertaking massive global steps to end deforestation and adopting a more comprehensive conservation strategy. He pointed out that there is a need to first address systemic problems in conservation to locate effective local solutions. He used the example of a project in Zambia that has conserved a billion trees to emphasize that it is not just about money but also appropriate policies. Effective engagement with the government and local people was essential to the success of the project. He noted that BCP sought to collaborate with local people to devise methods of land management that are environmentally friendly and to draft conservation agreements that place limits on tree cutting. BCP, Sachedina said, contributes to the preservation of biodiversity and helps to minimize the effects of climate change by protecting forests. BCP's concept has been successful in both improving the lives of local populations and producing resources for conservation, demonstrating that conservation efforts can be beneficial to both people and the earth, according to Sachedina.

Sachedina discussed Sayari Earth's goal to impact nine million people, remove 45 million tons of carbon, and co-manage 45 million hectares of land by the year 2032. He noted that — at the time of his presentation — only six years remained until July 2029, when global average temperatures are expected to rise 1.5 degrees Celsius above pre-industrial levels. Because of this accelerated climate change, he argued that the methods of carbon trading must be re-engineered, and the process of restoring nature should be industrialized. Sachedina emphasized the need for an "and-and" strategy as opposed to an "either-or" one — including the notion that developers feel market regulation will accelerate the sector. Sayari Earth works to create a comprehensive strategy for the protection of important ecosystems by integrating elements of conservation, community development, nature-based carbon removals, and environmentally responsible economic practices, according to Sachedina.

Sachedina emphasized the need for an "and-and" strategy as opposed to an "either-or" one — including the notion that developers feel market regulation will accelerate the sector.

Sachedina recognized that the voluntary carbon market could be perceived as immature and unregulated, but he urged consideration of large-scale measures to curb deforestation through carbon markets. He acknowledged concerns about the importance of proper carbon accounting and the underreporting of the impacts of carbon. In responding to concerns about the effectiveness and utility of carbon markets, Sachedina recommended caution and a more holistic understanding of carbon markets. He also highlighted the need for future work on the integration of REDD+ projects into jurisdictional-scale accounting through nesting. His presentation illustrated the necessity of large-scale initiatives to eliminate deforestation and adopt a more comprehensive approach to conservation. Sachedina encouraged tackling systemic challenges and industrializing nature restoration to ensure a more sustainable future.

WATCH SESSION RECORDING

Jurisdictional-Scale Crediting for REDD+: An Architecture to Ensure Social and Environmental Integrity

Mary Grady

LEARN MORE

Presented: March 9, 2023

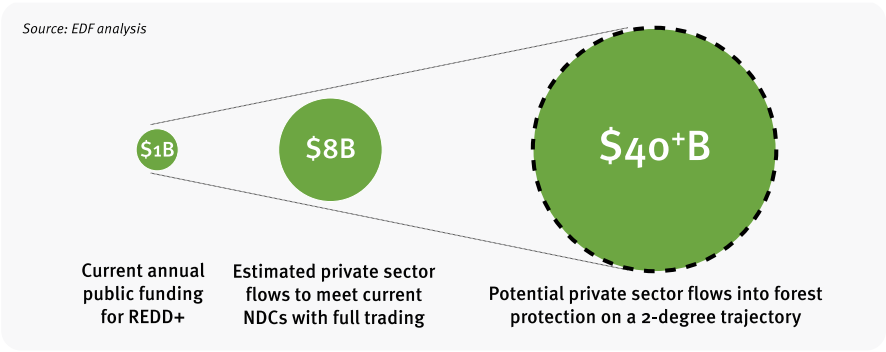
MARY GRADY, *Executive Director, Secretariat for the Architecture for REDD+ Transactions, Winrock International*

Summary by: Leah Andino

Mary Grady, executive director at the Secretariat for the Architecture for REDD+ Transactions, joined YFF to discuss the process of developing high quality jurisdictional-scale carbon credits. Architecture for REDD+ Transactions (ART) was made to ensure and maintain the integrity of REDD+ carbon credits to unlock large-scale financing through both the voluntary and compliance carbon markets. ART is independent of governments or donor countries and is composed of experts from around the world. Credits are only issued at the national and large subnational level, because only governments can regulate land use, enforce the law, and recognize Indigenous people's rights. According to Grady, jurisdictional scales also inherently involve lower risks of reversals and leakage than smaller projects. Allowing subnational crediting in the short term provides an opportunity for jurisdictions to directly participate in the carbon market if their national government is not yet willing or able to participate in ART. After 2030, ART will allow only national crediting.

Grady elaborated that ART has four goals: (1) develop and approve high standards and methodologies, (2) review and list GHG emissions reductions and removals projects and jurisdictional programs, (3) oversee independent validation and verification by accredited entities, and (4) issue serialized credits on a transparent registry and record credit retirements and cancellations. To meet these goals, ART is working on standardizing the current best practices developed from prior carbon market protocols. Under

this aim, ART has created a new standard for jurisdiction-scale crediting called The REDD+ Environmental Excellence Standard (TREES). TREES requires that jurisdictions all use the same historical average period, deductions for leakage, and buffer pool contributions, meaning that credits issued are comparable among different jurisdictions and fungible in markets. The standard also includes measures to avoid double counting under Article 6 of the Paris Agreement and the CORSIA guidelines. Finally, monitoring and reporting on safeguards is integral to TREES credit issues. Participants are required to conform in 16 key areas based on the UNFCCC Cancún safeguards for the environmental and social risks of REDD+.



Existing systems and public funds alone are insufficient to financially support the full scale of potential emissions reductions possible through REDD+. Leveraging private funding has the potential to increase available REDD+ funding by more than 40 times. Figure courtesy of Mary Grady, data source: EDF.

Non-carbon benefits of tropical forests are now being considered in addition to carbon storage. ART has engaged with various Indigenous and forest-dependent communities who have emphasized all the benefits of maintaining forests that are unrelated to carbon. In response, ART has launched an optional co-benefit certification that can be additional to the results that jurisdictions achieve under TREES. The co-benefit certification is split into three modules: (1) sociocultural values to Indigenous people and local communities, (2) biodiversity benefits, and (3) non-CO_2 climate benefits. At the time of Grady's talk, ART hoped to combine all three modules together into one certification to be launched later in 2023. Jurisdictions will be able to use this certification to sell their TREES credits for a higher value.

WATCH SESSION RECORDING

Creating Incentives for the Protection of High Forest, Low Deforestation (HFLD) Areas

Jason Funk

Stephanie Wang

LEARN MORE

Presented: March 30, 2023

JASON FUNK, *Director of REDD+ Strategy, Conservation International*

STEPHANIE WANG, *Associate Director of Climate Finance Policy, Wildlife Conservation Society*

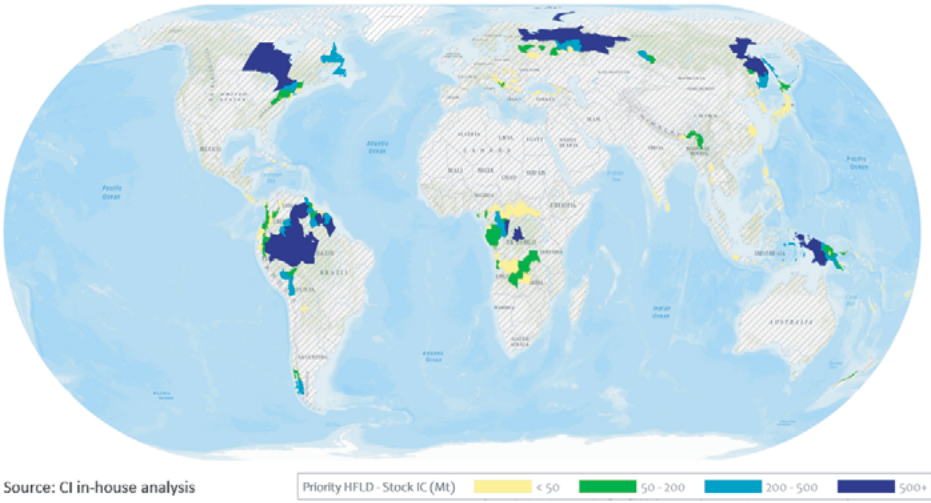
Summary by: Katie Michels

Stephanie Wang, associate director of climate finance policy at the Wildlife Conservation Society, and Jason Funk, director of REDD+ strategy at Conservation International, discussed the unique role of High Forest, Low Deforestation (HFLD) areas in carbon sequestration and ecosystem conservation. They made the case that these areas should be a priority for protection and described how voluntary carbon markets can be a tool to ensure funding for it.

HFLD areas — also known as stable forests, primary forests, and intact forests — are defined by the Wildlife Conservation Society as countries and jurisdictions "with very extensive, ecologically intact forests and low past rates of deforestation." The concept was created in a 2008 paper which defined HFLD regions as those with over 50% of the original forest cover and a historical deforestation rate of less than 0.22% per year (then the global average).

HFLD areas have been systematically missing from previous carbon crediting approaches which rely on a baseline of historic deforestation rates to determine future credit allocation. However, HFLD areas face significant risks, particularly in tropical regions. Over the past twenty years, 26% of global carbon emissions were a result of the loss of primary forests, and 22% of carbon emissions came from tropical HFLD forests. One quarter of total emissions associated with deforestation have come from intact

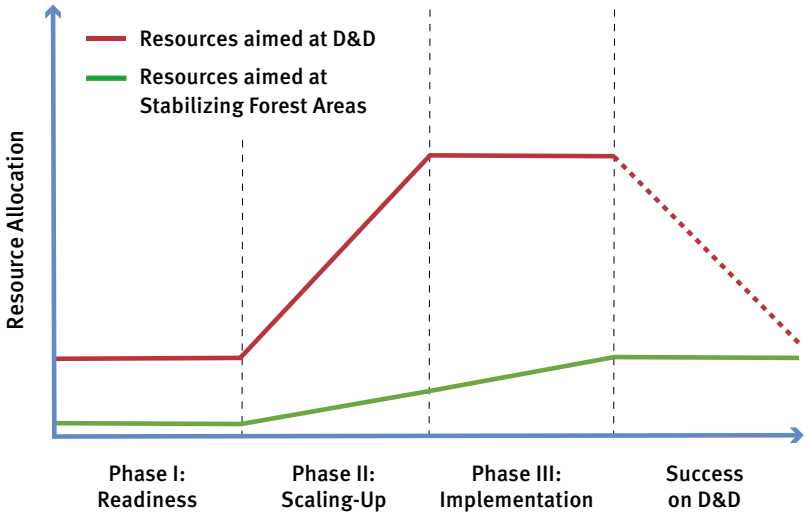
tropical forests. Many HFLD areas are some of the most biodiverse and ecologically sensitive forests in the world — including the Amazon, Congo Basin, and forests of Southeast Asia. The status and risks facing forests can change rapidly: between 2010 and 2019, five countries lost their HFLD status. In the future, increasing demands for forest and wood resources will increase demand for forest products and pressures on forested lands.



Some HFLD jurisdictions contain irrecoverable carbon — stored carbon that once lost cannot be recovered within a human time scale — making forest protection particularly important. Jurisdictions with the highest quantities of irrecoverable carbon are mapped in blue. Figure: Conservation International.

Funk and Wang emphasized that many forests in HFLD regions exist because Indigenous peoples have fought to keep them intact, at times dying for their protection. They shared a statement from Juan Carlos Jintiach, an earlier speaker in the YFF series and the coordinator of COICA, about the work of Indigenous forest protectors: “It has not been easy; it has not been free. But it has been essential.” Carbon credit methodologies like ART TREES have worked with COICA to ensure that Indigenous perspectives are included.

Funk and Wang outlined four main forest protection mechanisms: international climate agreements, national climate policies, philanthropic efforts, and voluntary activities among non-state actors. According to a recent analysis, most of these mechanisms provide no or few protections for HFLD areas, and very few provide permanent protections. The biggest identified opportunities for protection are voluntary actions by non-state actors. The ART TREES standard creates a mechanism to use REDD+ financing to pay for voluntary carbon credits for HFLD forest protection, which is particularly exciting because the voluntary carbon market already exists and is expected to grow to $1 trillion.



The resources needed to help avoid deforestation and degradation (D&D) decline as those projects are successfully implemented, while the resources to ensure continuing stability of forests in HFLD jurisdictions will be needed as long as those areas are under threat. Figure: Funk et al., 2019.

Funk and Wang made the case that carbon credits are an important, additional, and high-quality tool to protect HFLD forests. They used the example of a statistical study of the effects of carbon crediting in Guyana that found that, without the additional incentives, forest loss would have been about 35% greater. The recent Project Preservation report — with WCS among its authors — and the Voluntary Carbon Credit Integrity Guides make the case that HFLD credits are additional and high quality. The ART TREES methodology for HFLD forests, which Funk and Wang described as "conservative," issues credits for 0.05% of standing forest carbon stocks annually in HFLD jurisdictions, based on an approximation of the threat faced. Using the ART TREES crediting methodology, up to 69 million tons of carbon dioxide sequestration could be credited in 11 HFLD countries and 26 additional jurisdictions.

To date, $750 million worth of HFLD credits have been sold under ART TREES from the country of Guyana to the Hess Corporation, an oil company based in the United States. These credits sold for 600% more than "regular" REDD+ credits, suggesting the higher value of HFLD credits. Funk and Wang are hopeful that more HFLD carbon projects will soon be implemented to protect the important carbon and biodiversity resources stored in HFLD regions.

Cloud forests in Ecuadorian Andes. Photo: Yeim We

WATCH SESSION RECORDING

Forest Carbon Credits in Sub-national Jurisdictions: Experience from the Governors' Climate and Forests Task Force

William Boyd

Jason Gray

LEARN MORE

Presented: April 6, 2023

WILLIAM BOYD, *Project Lead, Governors' Climate and Forests Task Force*

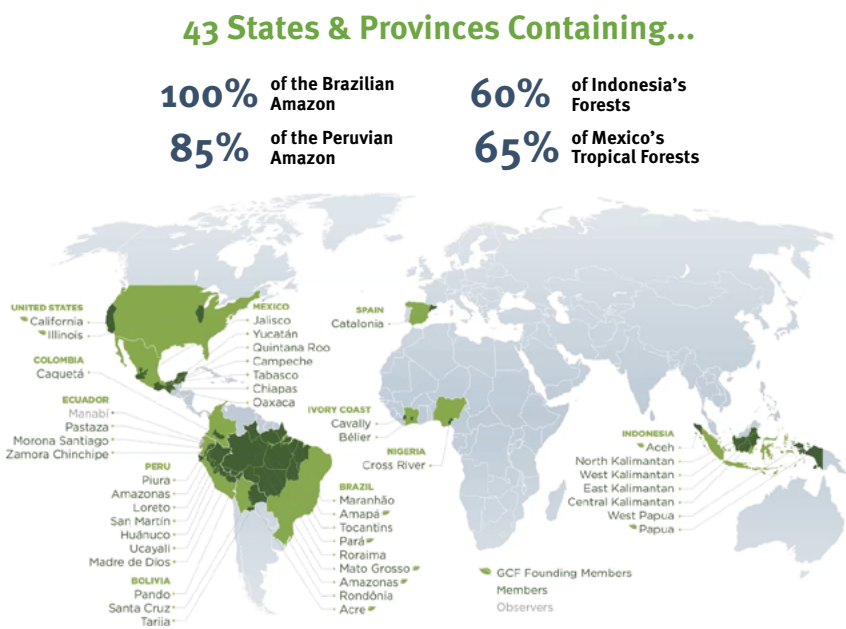
JASON GRAY, *Project Director, Governors' Climate and Forests Task Force*

Summary by: Caro Sanchez

William Boyd and Jason Gray, project lead and project director at the Governors' Climate and Forests Task Force, respectively, described the role of subnational jurisdictions in developing forest carbon credits. The Governors' Climate and Forests Task Force (GCF TF) grew out of an effort led by Governor Arnold Schwarzenegger in 2008 to convene governors from around the world to cooperate on the topic of forests and climate. At the time, the Kyoto Protocol had spurred significant climate action, and there was growing recognition that states and provinces around the world were laboratories for the experimentation and innovation necessary to drive climate solution implementation. The GCF TF was officially launched in 2009 and, as of March 2023, consists of members from 43 states and provinces of 11 different countries.

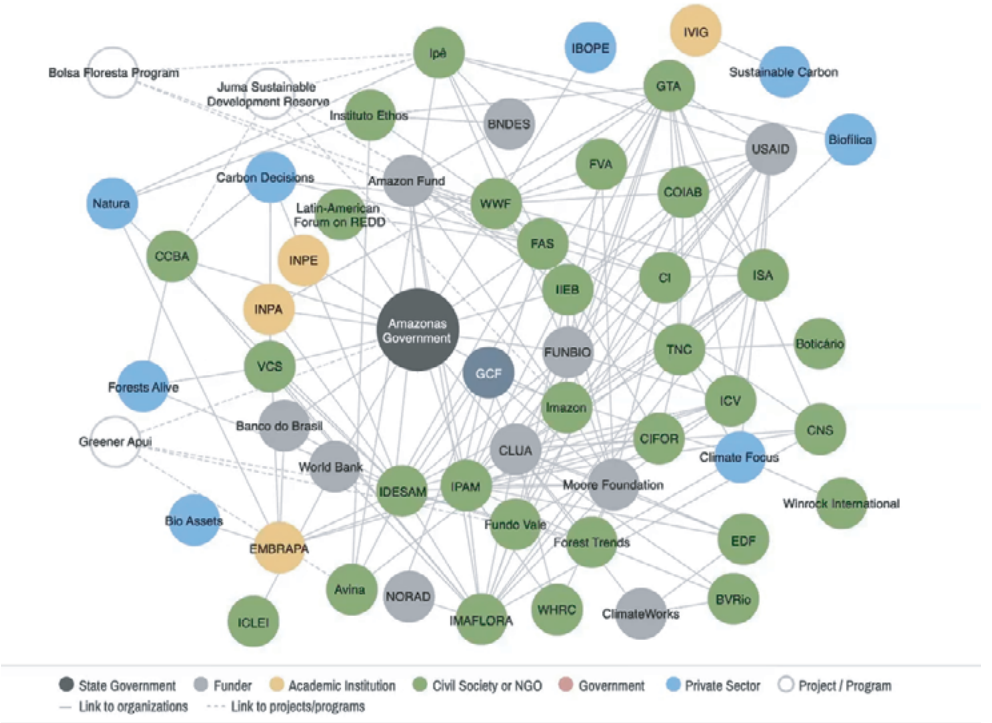
The GCF TF focuses on coordinating efforts between states and provinces to push for national-level policies that have an impact on forests and climate. There are two levels of engagement within the task force. First is engagement with governors and their teams, who are in office for shorter terms. Second is engagement with civil servants that stay in the government over multiple administrations and can consistently advocate for changes that require more time. The GCF TF is committed to a jurisdictional approach to forest governance and focuses on

connecting local governments with a network of stakeholders, including government, civil society, private sector, and academic institutions. Given the uncertainty involved in this work, the GCF TF aims to empower governments and partners to test solutions and share learnings with the network.



43 states and provinces from 11 different sovereign nations, including those with substantial proportions of the world's tropical forests, have joined the GCF TF. Figure: Governors' Climate and Forests Task Force.

The threats faced by tropical forests have been recognized internationally since the 1980s, but most of the approaches that have aimed to reduce tropical deforestation (e.g., Tropical Forestry Action Plan, Debt-for-Nature Swaps, Forest Certification Schemes, Protected Areas, etc.) have not worked at scale. The GCF TF is looking at the potential role that REDD+ jurisdictional and subnational approaches could play in addressing this issue. They recognize that REDD+ initiatives are not fast, easy, or cheap, and are subject to different views and controversies.



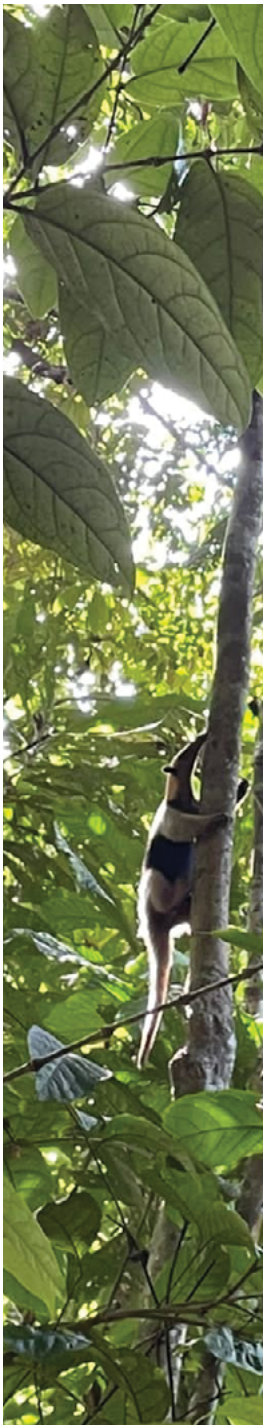
The GCF TF connects member governments with funders, academic institutions, NGOs, and private sector partners to help support projects. For example, the government of Amazonas, Brazil has connected with more than 50 partners. Figure: Governors' Climate and Forests Task Force.

Adopted in 2011, the California cap-and-trade program has worked in combination with other climate programs to send price signals across the economy and direct investments to various solutions, including offsets provisions through forests. Despite facing severe criticisms, the program has managed to issue 245 million offset credits, representing $2-3 billion of climate finance. Most of these credits are in U.S. forest projects focused on improved forest management, avoided conversion, and reforestation, of which nearly half are on Tribal and Alaska Native Corporation lands. The building of these relationships between state and Tribal governments, driven by Tribes requesting to be included in the projects, has been one of the main outcomes of the program.

As part of the GCF TF, the California government shared its experience running the program with other subnational governments and civil servants. This included sharing details on topics such as fundraising, budgeting, stakeholder engagement, and implementation. In particular, the program's experience with Tribes has informed how the task force works with Indigenous communities, understanding that Tribal communities must have a seat at the table to co-create solutions. The GCF TF has developed and is implementing a set of guiding principles on this matter.

A desire to leverage the California program to help protect tropical forests through jurisdictional scale REDD+ led to the development of the California Tropical Forest Standard. Although not within the regulation yet, California is the first government to adopt a compliance grade standard that can be utilized for carbon markets and other approaches. The GCF TF member jurisdictions have helped design this standard. Through the Manaus Action Plan, the GCF TF members have set commitments for reduced deforestation, increased reforestation, and supported adaptation efforts, which must be paired with long-term financing sources.

As Boyd and Gray put it, California's carbon market standard is one of many strong standards focused on high quality and integrity. While they admitted that some critiques of these standards are valid, they also reiterated that some are exaggerated and have caused confusion for actors looking to implement jurisdictional or project-scale carbon offset projects. There are existing initiatives to address greenwashing critiques and elevate the science and integrity of offsets, including the Integrity Council for the Voluntary Carbon Market, the Voluntary Carbon Markets Integrity Initiative, disclosure requirements, and tropical forest standards requirements. However, according to Boyd and Gray, these initiatives risk perfection becoming the perpetual enemy of the good. It is important to advance solutions to the climate crisis now, and carbon markets can be an important part of the solutions for some jurisdictions. However, the success of carbon markets will require quickly finding additional sources of financing to support efforts on the ground.



Panama. Photo: Sophie Roberts

WATCH SESSION RECORDING

Forest Carbon Credits in Compliance Markets: Experience from Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

Molly Peters-Stanley

LEARN MORE

Presented: April 13, 2023

MOLLY PETERS-STANLEY, *Negotiator, U.S. Department of State*

Summary by: Will Gardner

Molly Peters-Stanley leads U.S. negotiations on international carbon markets, carbon market-based finance, and carbon trading for the U.S. State Department. Peters-Stanley is also a member of the Technical Advisory Body (TAB), which advises the International Civil Aviation Organization on the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) market-based measure. She joined YFF to share her experiences and insights on CORSIA.

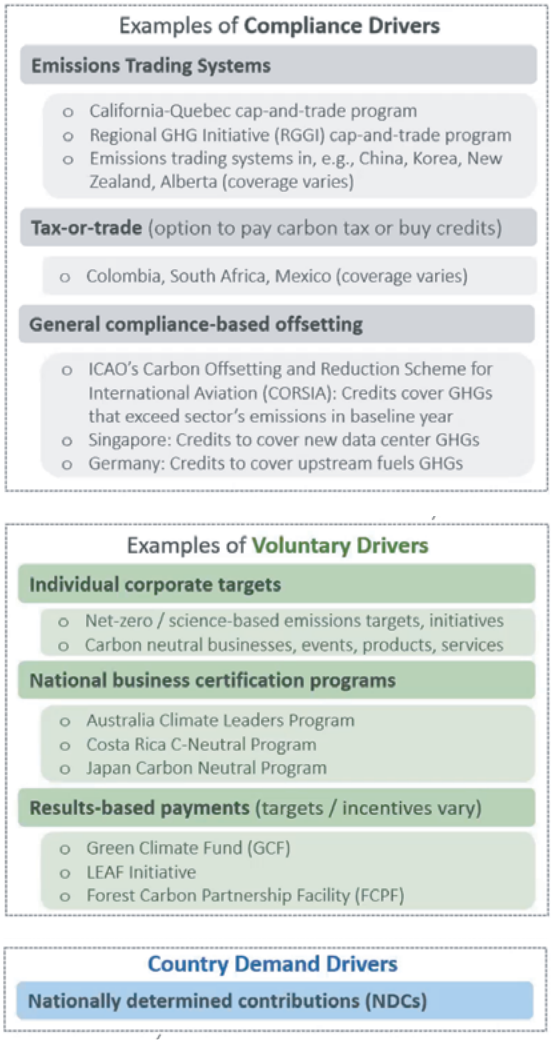
Peters-Stanley covered three main areas: (1) a look at the current state of carbon markets, (2) the CORSIA experience and approach to REDD+, and (3) the challenges and opportunities for growth that may arise in future carbon markets.

THE CURRENT STATE OF CARBON MARKETS

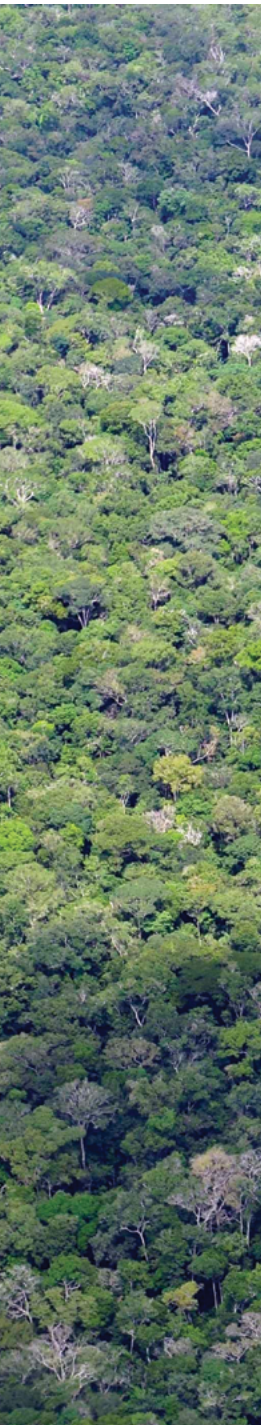
When considering carbon markets in a broader context, Peters-Stanley suggested looking at drivers of credit demand rather than separately considering voluntary and compliance markets. Following Quebec's and California's admittance of independently registered credits in their compliance markets, the same standards are increasingly used to generate credits for both compliance and voluntary markets.

While there are voluntary markets, domestic compliance markets, and one global compliance market (CORSIA), they all sit within national efforts to meet the Paris Agreement. For example, some governments use carbon credits toward meeting emissions reductions targets as part of their nationally determined contributions (NDC) under the Paris Agreement, including credits transacted and surrendered by the private sector. Both voluntary and compliance markets seek ways to accommodate the rules articulated under the Paris Agreement.

Article 6 of the Paris Agreement is an important piece of guidance for developing carbon markets. It provides a lower bound of carbon issuance rules and contains a crediting mechanism. CORSIA aims to combine Article 6 with the Warsaw Framework for REDD+ credits while providing a practical interpretation of these rules.



Demand for carbon credits may derive from voluntary or compliance markets, but increasingly, the same credits are being applied to both types of markets. Figure courtesy of Molly Peters-Stanley.



CORSIA AND REDD+

CORSIA was created to cover airline emissions in international airspace, which would otherwise be excluded from national carbon inventories. Thus, CORSIA is governed under the International Civil Aviation Organization (ICAO) rather than the UNFCCC national emissions agreements. While airlines report their compliance information to ICAO, ICAO is not an enforcement agency. Instead, member states are responsible for legal enforcement.

At a very high level, CORSIA sets a global emissions baseline, over which emissions must be paid for by airlines either using approved credits or by purchasing sustainable aviation fuels. CORSIA has five three-year compliance cycles, for which the first two cycles — from 2021 to 2026 — are voluntary. By 2027, membership will be mandatory for all states. At the time of Peters-Stanley's presentation, over 100 member states had opted in to CORSIA.

Peters-Stanley detailed the Technical Advisory Board's (TAB) role in approving carbon crediting standards eligible under CORSIA. The TAB applies the emissions unit criteria adopted by the ICAO council and determines if credits issued by various standards meet the ICAO criteria. The ICAO criteria are intentionally high-level and cover areas such as clarity of protocol methodology and development process, transparent accounting, legal ownership, inclusion of safeguard systems, and sustainable development criteria.

The TAB produces two key documents. The first includes the eligibility constraints which include general parameters that apply to all standards as well as incremental additional requirements applying to specific standards. Second, TAB issues recommendation reports for eligibility status of various standards to the ICAO council who make the final decision. The TAB does not interact with standard setters. That interaction is left up to the ICAO council. These reports also include explanations of instances when the TAB felt that it had to do additional interpretation of the ICAO criteria.

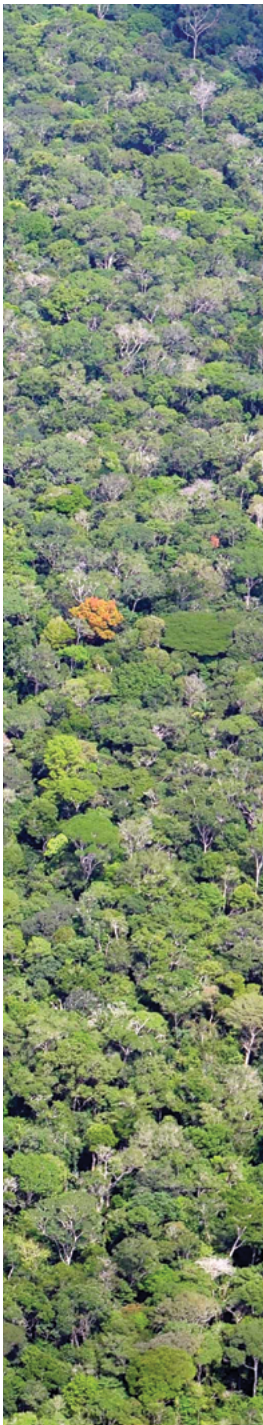
Photo: 2011CIAT/NeilPalmer.

The TAB did not want to disincentivize larger scale implementation of REDD+ in their consideration of standards that met ICAO criteria. The TAB accepted two REDD+ standards into the first phase: the Architecture for REDD+ Transactions' The REDD+ Environmental Excellence Standard (ART TREES) and the American Carbon Registry (ACR). The TAB considered how to allow project level eligibility in some circumstances and jurisdictional crediting in others. They sought to incorporate the benefits of the flexibility and speed of project-based crediting, while reflecting the leakage protections offered by national monitoring and jurisdictional crediting.

When deciding if jurisdictional crediting was required, TAB considered: whether the activities covered by the standard could be categorized as REDD+, if the activities are being implemented in geographic jurisdictions pursuing REDD+ crediting, whether the jurisdiction itself considers these activities part of its REDD+ program, and the size of the project.

CHALLENGES AND GROWTH

Looking ahead, Peters-Stanley touched on three areas where crediting is likely to see significant development. She shared that some of the key methodological issues included getting the concept of REDD+ crediting off the ground, deciding on how to structure baselines, determining whether distributed baselines are required, and demonstrating additionality and robust baseline setting. Issues in emerging markets include how to design jurisdictional crediting to avoid leakage, align with national policies, and determine how meta-standards such as ICVCM will recognize jurisdictional methods. Finally, the last remaining challenge is to identify the other finance options that are available for jurisdictions where offset crediting may be less appropriate, especially for HFLD geographies. These alternatives may include results-based climate finance or "contribution" claims.



WATCH SESSION RECORDING

REDD+ in Global Carbon Market Initiatives: Integrity Council for the Voluntary Carbon Market (ICVCM)

Daniel Ortega Pacheco

LEARN MORE

Presented: April 20, 2023

DANIEL ORTEGA PACHECO, *Co-Chair, Voluntary Carbon Market Council Expert Panel; Director, Center for Public Policy Development at Escuela Superior Politécnica del Litoral (EPSOL Polytechnic University); Visiting Lecturer, ESPAE, EPSOL School of Management*

Summary by: Nadia Ahmad

Daniel Ortega Pacheco serves as a director in the Center for Public Policy Development at ESPOL Polytechnic University and as a visiting lecturer at ESPAE School of Management. Ortega Pacheco joined the Yale Forest Forum to discuss the Integrity Council for the Voluntary Carbon Market (ICVCM), which promotes jurisdictional and project-based carbon market credibility and reliability. ICVCM addresses concerns about carbon market integrity and examines ways to optimize its advantages for low-carbon programs to meet Paris Climate Agreement commitments.

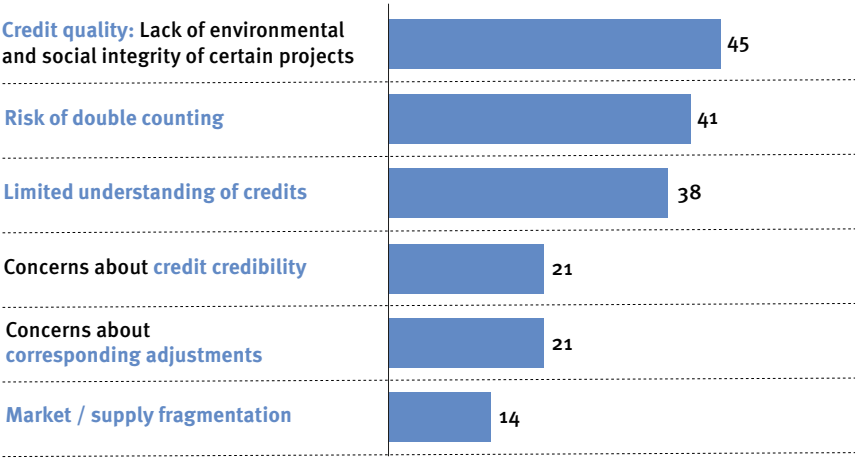
The voluntary carbon market (VCM) furthers the goal of global climate action, but Ortega Pacheco noted that market participants' confidence is needed for full program buy-in. Many parties see risks and opportunities related to tackling tropical forest conservation, climate change, and Indigenous rights. Ortega Pacheco argued that the VCM's ability to address these difficulties is widely questioned, and the VCM's environmental and social integrity is called into doubt by those who distrust government and market forces.

Concerns over VCM legitimacy and the need for broad consultations shaped the formation of ICVCM. As market players realized these issues needed to be addressed to maintain market confidence, ICVCM became a vital actor in carbon market credibility and integrity. By creating an impartial body of specialists from across

governments, NGOs, academia, and the commercial sector, ICVCM aims to provide an authoritative and unbiased perspective on the VCM. This led to ICVCM's Core Carbon Principles (CCPs), which address market transparency, efficacy, and environmental integrity. ICVCM develops, evaluates, and updates the CCPs to keep the market credible and successful in supporting climate action. Stakeholders may then apply ICVCM's recommendations — which are based on specialist knowledge — to help legitimize VCMs.

Pain Points Expressed by Current or Future Buyers[1]

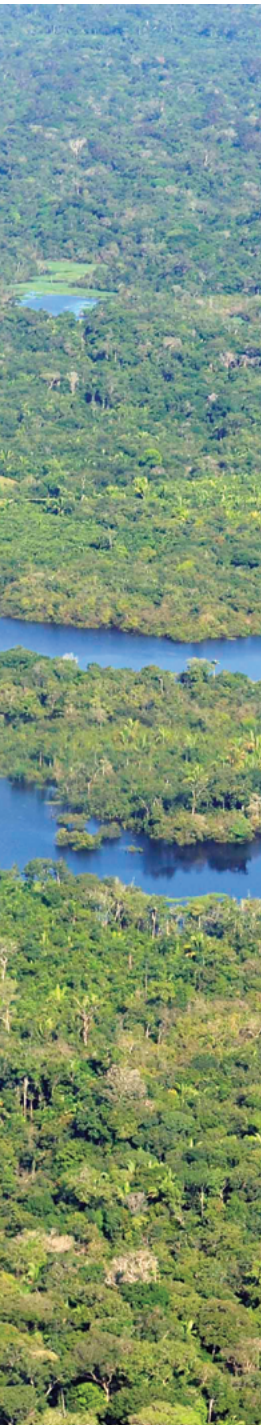
% of Buyers Who Commented on the Survey



Footnotes:

1. Based on buyers' comments expressed in TSVCM Phase I survey, with results as of October 2020. More buyers answered the survey but did not comment on the topics.
2. Replies to the question: Should the "Core Carbon Principles" exclude certain project types, or only allow them with additional safeguards? (independent of project vintage)?
3. Replies to the question: Should the "Core Carbon Principles" exclude projects of a certain vintage? 46% of respondents would exclude all projects from a certain vintage; 11% would exclude some projects of specific vintages.

According to a survey of current or future carbon credit buyers, the biggest concerns and areas needing clarification were credit quality, double counting risk, and transparency around the function and development of carbon credits. Figure courtesy of Daniel Ortega Pacheco.



Pacheco noted that fairness and human rights are a significant component of a carbon trading program's integrity. The purchasers of carbon reduction and removal credits, he also argued, deserve fair treatment and a return on their investments. ICVCM focuses on credit-level, participant-level, and process-level fairness, and legal and accounting requirements to strengthen carbon market governance. These efforts are part of establishing rules and guidance based on the concerns of intermediaries' duties and the people impacted by carbon market decisions.

The ICVCM task team has identified and sought to resolve specific carbon credit issues. The task force initially examined its members' views on credit quality, double counting, members' limited understanding of credits, credit credibility, corresponding adjustments, and market/supply fragmentation. Pacheco discussed how each of these areas are critical to the VCM's integrity and successful operation. Credit quality matters because projects with poor environmental and social integrity weaken the carbon market. Double counting — when multiple parties claim credit for cutting emissions — threatens the system's integrity. Borrower creditworthiness, market participants' uncertainty, and general mistrust of credits might further erode market confidence. Fragmentation can reduce market efficiency.

Pacheco concluded by saying that ICVCM's advice to project developers, verifiers, and other stakeholders helps to maintain carbon market validity. The council guides market players through the market's intricacies to ensure that VCM credits are credible and contribute to climate mitigation. ICVCM's continual market observation and evaluation shows its commitment to validity. The council keeps the market updated by identifying improvement areas and providing recommendations to promote ongoing market confidence in the product of the carbon credit system.

Photo: 2011CIAT/NeilPalmer.

Seeing the Forest for the Trees: Building Buy-Side Confidence by Finding Common Ground

WATCH SESSION RECORDING

Presented: April 27, 2023

JO ANDERSON, *Director of Finance and Sales, Carbon Tanzania*

ROCIO SANZ CORTÉS, *Head of Origination, Emergent*

EMILIO SEMPRIS, *Regional Director for Latin America and Caribbean, Coalition for Rainforest Nations*

Summary by: Lucía Parra Arce, Chomri Khayi, and Calla Rosenfeld

Jo Anderson

Rocio Sanz Cortés

Emilio Sempris

The final session of the Yale Forest Forum's series brought together experts from across the global carbon market landscape to discuss the opportunities and challenges of three market approaches that are often seen as distinct — project-based, jurisdictional scale, and sovereign initiatives under the United Nations system. Jo Anderson from Carbon Tanzania, Rocio Sanz Cortés from Emergent, and Emilio Sempris from the Coalition for Rainforest Nations represented each of the three approaches, respectively. They considered how they might find common ground and identify the best path forward for the forest carbon market to instill buy-side confidence.

Jo Anderson is the co-founder and director of finance and sales at Carbon Tanzania, which applies REDD+ methodology at the project level. With a background in biology and environmental management, Anderson and his co-founder recognized a need to bring value to the habitats and forests outside of large conservation areas in Tanzania. REDD+ emerged as a solution that allows for the conservation of these areas primarily under the stewardship of local communities while generating economic benefits. For Anderson, focusing on small-scale projects can help control the risk of project failure and allows project developers to respond to highly varied local socio-ecological contexts in which many projects are implemented. Key advantages of project-scale REDD+ are the ability to build relationships with communities and to remain flexible while allowing communities to access

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financing more rapidly. However, one major limitation of this approach is the challenge of accounting for emissions leakage.

Rocio Sanz Cortés is the head of origination at Emergent. Emergent is a non-profit organization that coordinates the LEAF coalition, a public-private alliance that aims to mobilize finance for reducing deforestation through jurisdictional REDD+ forest protection programs. Emergent works with JREDD programs to ensure the social and environmental integrity of forest carbon credits, especially for Indigenous Peoples and Local Communities (IPLCs). Sanz Cortés believes that a global challenge like climate change requires large-scale impacts that can be facilitated through JREDD. She also noted that they: 1) work with one standard, ART TREES, 2) focus on national and sub-national governments that have nationally determined contributions (NDCs) with forest targets, and 3) have independent third-party validation and verification by accredited Validation and Verification Bodies (VVBs), which provides a high level of integrity based on the Paris Agreement. Since the time of this talk, Emergent has started working with the World Bank's Forest Carbon Partnership Facility (FCPF) Standard.

Emilio Sempris is the regional director of the Coalition for Rainforest Nations and the former Minister of Environment of Panama. During this session, Sempris presented on sovereign REDD+ initiatives under the U.N. system. He highlighted the importance of the large-scale approach to REDD+ initiatives represented by Article 5 of the Paris Agreement to: standardize different REDD+ efforts; help governments, the U.N., and the private sector "speak in the same language"; and ensure these parties understand each other more effectively. Sempris remarked that he was part of the drafting team of the Paris Agreement, in which he advocated for REDD+ to be included. One of the main concerns while writing the REDD+ section of the Paris Agreement, he added, was to prevent leakage. However, he pointed out that such leakage has inevitably happened, mainly in the subnational and project approaches of REDD+ initiatives. Nevertheless, Sempris remains optimistic that there is common ground between approaches. He emphasized the importance of project and subnational based REDD+ initiatives in following the IPCC guidelines and the UNFCCC mandates on the Paris Agreement to tackle present and future challenges.

Photo left and right: 2011CIAT/NeilPalmer.

IDEAS TO INCREASE COORDINATION WITH AND CONFIDENCE FROM BUYERS

One approach to increase coordination with and confidence from buyers is for each party to recognize each other's role in achieving the Nationally Determined Contributions (NDCs) outlined in the Paris Agreement. From the perspective of a communications and sales role, Anderson believes it is important to emphasize that the private sector has a significant role to play in reaching Paris Agreement goals. One suggestion is for the private sector to agree on a moratorium on negative communications that are not based on full facts or are inaccurate. This can help build trust between buyers and project developers by ensuring that information is presented in an accurate and transparent manner. Ultimately, building confidence in the accuracy of information presented to buyers will lead to greater coordination and cooperation between stakeholders, leading to more effective implementation of REDD+ projects.

Moving forward, Sanz Cortés added that forest carbon markets need endorsements from influential leaders and organizations on the role of voluntary markets in mitigating the climate and nature crises. For example, SBTi already has a strong influence on corporate climate and sustainability policy. Sanz Cortés also emphasized a great need for storytelling to demonstrate real on-the-ground impacts of forest carbon investments on forest conservation and forest-dwelling communities.

Finally, Sempris called attention to the importance of focusing on the overlapping interests of the different approaches. He said that the three approaches can and should work together and benefit from the already existing IPCC carbon accounting framework used by more than 190 governments reporting to the United Nations. He believes following the REDD+ methodology adopted by the Paris Agreement would help build integrity, trust, and positive public image while also reducing reputational risk. Sempris concluded by stating to create synergies, build buy-side confidence, reduce leakage, and not hinder one another, it is essential to follow the national REDD+ approaches so as to follow the same standards.

Conclusion

By: Luke Sanford

The Yale Forest Forum's spring 2023 webinar series, "How Can the Voluntary Carbon Market Make a Meaningful Contribution to Protecting Tropical Forests?" underscored both the urgency and the complexity of this question. Tropical forests are being lost at an alarming rate, with devastating consequences for the global climate, biodiversity, and forest-dependent communities. REDD+ programs to incentivize forest protection in developing countries have made important strides but continue to face challenges in accessing adequate and consistent financing.

The voluntary carbon market represents a major opportunity to scale up funding for REDD+ and direct significant capital to tropical forest conservation. Demand from companies and individuals for forest carbon credits is growing rapidly. However, the market faces valid concerns around the integrity of these credits. REDD+ projects must demonstrate real, additional, and permanent emissions reductions while equitably engaging local communities and respecting the rights of Indigenous peoples. The treatment of High Forest, Low Deforestation areas under REDD+ requires careful consideration to ensure these important geographies are appropriately credited.

Over the course of the series, expert speakers offered valuable insights on addressing these challenges.

Frances Seymour and **Paulo Moutinho** provided overviews of the state of tropical forests and the history and current status of REDD+. **Roselyn Fosuah Adjei** shared perspectives from Ghana's experience implementing REDD+ at a jurisdictional scale. **Sean Frisby** examined the interests and roles of donor governments and the private sector in funding REDD+. **Juan Carlos Jintiach** and **Renato Rios** emphasized the need for REDD+ projects to fully respect the rights, knowledge, and leadership of Indigenous peoples. **Jessica Orrego** and **Hassan Sachedina** shared

Photo: Skye Hellenkamp

their organizations' approaches to developing high-quality forest carbon projects.

Mary Grady introduced the ART TREES standard for jurisdictional REDD+ crediting. **Jason Funk** and **Stephanie Wang** made the case that High Forest, Low Deforestation areas should be a priority for protection through carbon markets. **William Boyd** and **Jason Gray** discussed California's innovations in integrating jurisdictional REDD+ credits into its compliance market. **Molly Peters-Stanley** explained how the CORSIA aviation carbon market is creating demand for jurisdictional REDD+ credits. **Daniel Ortega Pacheco** shared how the Integrity Council for the Voluntary Carbon Market is working to strengthen credit quality.

In the final session, **Jo Anderson**, **Rocio Sanz Cortés**, and **Emilio Sempris** explored how project-level, jurisdictional, and U.N. sovereign approaches to forest carbon crediting can be better integrated and coordinated to build confidence from credit buyers.

While significant work remains, the speakers expressed optimism that with robust standards, transparent accounting, equitable benefit sharing, and close coordination across scales and stakeholders, the voluntary carbon market can make a meaningful contribution to protecting the world's tropical forests.

Mobilizing this finance is essential for meeting global climate goals, conserving irreplaceable biodiversity, and supporting sustainable development. Tropical forest countries, Indigenous peoples and local communities, carbon market actors, NGOs, and governments all have vital roles to play. The Yale Forest Forum hopes this speaker series has helped advance the conversation on how these stakeholders can work together to determine the viability and future of carbon markets for tropical forests. Ongoing critical analysis, collaboration, and rigorous scrutiny will be needed to assess credit integrity, ensure robust social safeguards, and evaluate the equitable distribution of benefits. The future of the world's tropical forests, and all they sustain, depends on finding effective and just conservation solutions.

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