Woodwell Climate Research Center

149 Woods Hole Road
Falmouth, MA 02540-1644

woodwellclimate.org
508 540 9900

info@woodwellclimate.org

Via website: comments.cftc.gov:

October 7, 2022

Christopher Kirkpatrick
Secretary of the Commission
Commodity Futures Trading Commission
Three Lafayette Centre, 1155 21st Street NW
Washington, DC 20581.

Re: **Climate-Related Financial Risk RFI**

Dear Mr. Kirkpatrick,

We appreciate the opportunity to provide comment on climate-related financial risk. Our comments will be focused on the Commission's questions related to carbon markets.

The Woodwell Climate Research Center ('Woodwell") is a scientific research organization that works with a worldwide network of partners to understand and combat climate change. We bring together hands-on research experience, and 37 years of policy impact to find societal-scale solutions that can be put into immediate action by policymakers and decision makers. Woodwell scientists work in more than 20 countries on six continents, collaborating with a wide range of partners, including national, subnational and local governments, nonprofit organizations, universities, and private sector companies in the investment, financial, banking, and agricultural sectors. Woodwell's Carbon Program develops comprehensive strategies to promote natural climate solutions for reducing carbon in the atmosphere.

Low-carbon and climate-resilient growth is possible, the capital for the necessary investments is available, and the potential for innovation is vast. Strong political leadership and credible, consistent policies are vital to drive this progress. The next two to three decades will be critical, as the global economy undergoes a deep structural transformation that will determine the future of the world's climate system.

Around 50% of the world's forest carbon is locked up in just 1% of the old growth large diameter trees [1] in primary, intact forests. Conservation of existing intact primary forests (avoided deforestation) is perhaps the single most important approach to limiting future forest carbon emissions. This is particularly significant as these old growth landscapes (e.g. temperate, tropical and boreal forests) come under increasing threat from expanding agriculture and forestry operations. Also given the time lag in sequestration benefits from reforestation and restoration activities, primary intact forests should be prioritized in the establishment of forest carbon credits.

In addition to climate mitigation, forest conservation projects can also generate broader environmental, social, and economic benefits, ranging from increased biodiversity, job creation, and support for local communities, and health benefits from avoided pollution. Managing forests for climate change mitigation requires action by multiple stakeholders in diverse jurisdictions from nation states and regional governments, to private enterprises (large and small) and local communities, with overlapping objectives and spatial impacts. When forest conservation projects are aggregated in a wider landscape, the power of their co-benefits is multiplied, securing broader habitat connectivity and local micro-climatic benefits, increasing resiliency and further reducing exposure to risk from global climate

change. Additionally, a significant share of potential forest carbon projects is located in less developed economies, thus carbon credits can generate flows of private capital to these growing markets.

Global efforts now turn to the challenge of scaling impact, achieving results through voluntary markets for carbon and compliance markets driven by regulation. To rapidly develop impact at scale, the platform of market trading rules and procedures needs innovation to accelerate action.

Agricultural and forest production are sensitive to changes in climate [2], including changes in temperature and precipitation, more frequent and severe extreme weather events, and increased stress from pests and diseases. At the same time, climate change poses an added risk to many forests due to ecosystem disturbance and tree mortality through wildfire, insect infestations, drought, and disease outbreaks. Climate change will affect the location, timing, and productivity of agricultural and forest systems, with economic consequences for and effects on food security and timber production. These factors create risk and uncertainty in the future performance of the carbon credits.

The 1.5 C IPCC report [3] states that an increase in global forest area of 1 billion ha will be *necessary* to limit global warming to 1.5°C by 2050. Estimates of the carbon sequestration potential of global restoration run from 42 GtC to up to 200 GtC [4], but there will be a significant time lag between implementation and maximum sequestration benefits, as trees take decades to mature. Forests are capable of providing 23% of cost-effective climate mitigation needed before 2030, yet they receive just 3% of available climate mitigation finance. Key public sector investment has necessarily focused on developing the framework for carbon markets to operate, so despite the sluggish progress, the global and national architecture to manage the complexities of the compliance and voluntary markets is moving forward.

At present, companies and countries are increasingly making de-carbonization commitments, and forest carbon credits have the potential to be a key source of capital to secure the global forest estate. The projects generating these carbon credits can be broadly grouped into two categories: i) GHG avoidance/reduction projects, such as avoided deforestation or renewable energy and ii) GHG removal/ sequestration projects, such as reforestation or technology-based e.g. carbon capture and storage.

How are forest carbon credits generated?

Conceptually forest carbon credits are generated through a technical and accounting process for forest carbon certification from avoided deforestation, reforestation/restoration or improved forest management practices. In a spatially defined impact area, an evaluation is made of forest and land-based emissions under a "business as usual (BAU)" scenario (without change to local practices) versus under an emission reductions scheme. The difference between the BAU scenario and the intervention is the amount of "additional' carbon that would otherwise have been emitted or can now be sequestered as a result.

There is a wide gulf between the potential and actual supply of forest carbon credits. All projects come with risks, and many struggle to attract financing because of the long lag times between initial investment and eventual issuance of credits. The Taskforce on Scaling Voluntary Carbon Markets [5] estimates that the voluntary carbon markets need to grow by more than 15-fold by 2030 in order to support the investment required to deliver the 1.5°C pathway. The report cites many issues with the carbon market, including (but not limited to):

No publicly accessible pricing or rating information

Carbon credits themselves are uncertain investments due to multiple accounting and verification methods (standards often vary in criteria) and because project co-benefits (such as community economic development and biodiversity protection) are seldom well defined. Recent advances in globally consistent, spatially explicit data on forest carbon stock and quality estimates (including degradation) [6], ecological integrity [7] is not currently straightforward to

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access. It is also not straightforward for buyers to access pricing or rating information on carbon credits. This is a concern for carbon credits because not all forests are created equal in terms of carbon sequestration value and co-benefits, but this is not priced into the market.

Insufficient understanding of offsetting from the buyer

Due to the complexity of carbon crediting mechanisms, it is difficult for forest carbon credit buyers to understand what and where a carbon loss has mitigated in the offset that they have purchased or any environmental and social co benefits, and what happens to the forest asset after the offset has been purchased in terms of risk to site level permanence and leakage in the landscape.

Vulnerability to Fraud

The Commission has asked specifically about aspects of voluntary carbon markets that are susceptible to fraud and merit enhanced oversight. Today the market lacks a central governance body to combat fraud. In particular, the voluntary carbon markets have seen scandals with credits sold off-registry multiple times to individuals who do not understand the market.

Lack of centralized registries between voluntary and compliance markets

Currently there are no centralized registries between voluntary and compliance markets, let alone specifically on forest carbon credits. Globally, several forest carbon-monitoring systems have been developed for different regions using various data, methods and assumptions, making it difficult to monitor mitigation performance consistently across scales. This means that it is challenging for a buyer to verify that the credit that they have bought has not been double counted between different markets or jurisdictions. Suppliers face long lead times when verifying the quality of new credits and when selling those credits, bear unpredictable demand and can seldom find cost effective prices. Overall, low liquidity, scarce financing, inadequate risk-management services, and limited data availability typify the market.

Demand Side Solutions

A focus on the demand side for carbon credits is needed in order to improve the flow of capital into the market. We believe that there are three priority areas that can be addressed in forest carbon securities using available technologies combined with organizational and institutional know-how. Without resolving these three priority issues it will be impossible to establish and safeguard the integrity of the market at scale:

1) Technological improvements to enable the traceability of carbon credits: First, the diverse array of risks and co-benefits and verification standards creates potential for errors and fraud. A robust digital process by which projects are registered and credits are verified and issued is needed. Credit buyers must be able to track a project's performance (impact and risk) at regular intervals, not just hope for the best from beginning to end of a 70-100 year timeframe. Novel approaches to develop large scale, spatially consistent pan-tropical forest carbon measures at high resolution (30m) have been recently achieved [8] by the Woodwell Climate Research Center. Globally, a 500m resolution product for global forest cover is already in operation and a global 30m resolution product is forthcoming. Such products can resolve issues concerning global alignment and transparency in setting priorities and tracking collective progress towards forest-specific climate mitigation goals.

2) Systematic and globally comparable assessment and disclosure of risk and returns: Spatially explicit digital certification of credits will promote the usage of a consistently defined and verifiable set of additional attributes of forest carbon credits (ecological and social co-benefits, climate, permanence and leakage risk).

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This, in turn, would support the creation of structured finance products for project developers (e.g. active and passive funds and bonds).

3) Improved access and transparency of market data: Precise and timely data are essential for all capital markets and such data are not presently readily available even though they exist, as the forest carbon market is difficult to track outside of sub-regional or national jurisdictions. An advanced data infrastructure and reference portal would promote the transparency of forest credit ratings data and transactions, and buyers and suppliers would benefit from novel reporting and analytics services that consolidate reference data from multiple registries.

We deeply appreciate the CFTC's leadership on carbon markets and the opportunity to comment. If you have any questions about our comments or would like any additional information, please contact me at the email or phone number listed below.

Very truly yours,

David McGlinchey
Chief of External Affairs
Woodwell Climate Research Center
dmcglinchey@woodwellclimate.org
508-444-1509

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[1] Lutz et al (2018). Global importance of large diameter trees. Global Ecology and Biogeography. 00; 1-16. https://doi.org/10.1111/geb.12747

[2] Joyce, L.A., S.W. Running, D.D. Breshears, V.H. Dale, R.W. Malmsheimer, R.N. Sampson, B. Sohngen, and C.W. Woodall. 2014. Ch. 7: Forests. Climate Change Impacts in the United States: The Third National Climate Assessment, J.M. Melillo, Terese (T.C.) Richmond, and G.W. Yohe, Eds., U.S. Global Change Research Program. DOI:10.7930/JOZ60KZC.

[3] Intergovernmental Panel on Climate Change (IPCC), *An IPCC Special Report on the Impacts of Global Warming of 1.5 °C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways*(IPCC, 2018).

[4] The global tree restoration potential | Science (sciencemag.org)

[5] https://www.iif.com/Portals/1/Files/TSVCM_Consultation_Document.pdf

[6] Baccini et al (2017) Tropical forests are a net carbon source based on aboveground measurements of gain and loss. Science, 358, 230-234.

[7] Rogers et al (2021) using ecosystem integrity to maximize carbon mitigation and minize risk in inetrnaotinal forest policy. In press.

[8] Baccini et al 2017 Tropical forests are a net carbon source based on aboveground measurements of gain and loss. Science, 230-234: Walker et al 2020. The role of forest conversion, degradation, and disturbance in the carbon dynamics of Amazon indigenous territories and protected areas. PNAS, 117 (6) 3015-3025.