Forest Carbon Partnership Facility (FCPF)

Carbon Fund

Emission Reduction Delivery Risk Assessment Model for the FCPF Carbon Fund

December 2016

This note provides a summary of the new Emission Reduction Delivery Risk Assessment model

To support the management of their respective portfolios, the BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL) and the FCPF Carbon Fund have developed a probabilistic model that calculates the risk of ER delivery from its programs over time. ER delivery risk is understood as the probability of a particular program generating its projected ERs (i.e., as captured in ERPDs or according to best available estimates). Based on this probability, the model projects the volume of ERs that can be expected from each program and from the portfolio overall. The primary purpose of these projections would be to inform ERPA contracting, business planning and portfolio management, in order to ultimately ensure that the respective portfolios deliver as a whole and that capital is allocated wisely.

The model projects the expected ER delivery volume by discounting the estimated ER potential of a program by a risk factor, determined based on the program's probability to deliver. These risk-adjusted ERs are then considered in light of the program's ERPA commitment (expected or actual), in order to provide the expected ER delivery from each respective ERPA. In turn, this provides a measure of the ER delivery risk of the FCPF Carbon Fund portfolio at an aggregate level.

The ER delivery risk assessment model builds on the World Bank's Framework for Management of Risk in Operations and its Systematic Operations Risk-rating Tool (SORT)[1], which is qualitative tool applied to each World Bank operation. The objective of this tool is to identify, assess and manage risks based on likelihood and degree of impact on development outcomes. It consists of nine risk categories[2], plus an overall risk rating[3], and is updated systematically throughout the operations cycle. SORT ratings are disclosed in the public documents related to the operation, including the Program Appraisal Document (PAD) and the Implementation Status Reports (ISRs).

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[1] Please refer to the SORT Guidance Note for detailed information:
http://www.worldbank.org/content/dam/Worldbank/document/SORT_Guidance_Note_11_7_14.pdf
[2] The SORT risk categories are: (1) Political and governance; (2) Macroeconomic; (3) Sector strategies and policies; (4) Technical design of project or program; (5) Institutional capacity for implementation and sustainability; (6) Fiduciary; (7) Environment and social; (8) Stakeholders; (9) Other.
[3] Each SORT risk category can be rated as high (H), substantial (S), moderate (M) and low (L).

In order to develop a quantitative model to project ER delivery based on SORT, the SORT risk categories were unpacked to consider the contributing factors in each category explicitly (please refer to Box 1 for these unpacked factors). This makes it possible to compute probabilities for different factors that contribute to ER delivery risk. Moreover, it also allows the FCPF Carbon Fund and the ISFL to systematically track and address particular issues that are contributing to high risk ratings across the portfolio. The inputs to the model are program-specific information based on SORT.

The ER delivery risk assessment model was developed using the collective expertise and experience of the Facility Management Team (FMT) and the World Bank. The process included: (i) identifying the major causes and sources of ER delivery, in alignment with SORT; (ii) establishing the interdependencies among the various factors and their impact on the ER delivery through various causal chains; (iii) quantifying those dependencies in terms of probability estimates that were elicited from the team of experts; and (iv) testing, calibrating and validating the model. As such, this is a knowledge-based model that can also learn from data. Over time as it is applied, its parameters could be adjusted based on evidence collected and lessons learned from implementation (i.e., the probabilistic influences among various factors).

As the ER delivery risk assessment model is new, preliminary estimates at an aggregate level will be shared during the Carbon Fund meeting, as well as the results of two hypothetical cases to illustrate how the model works. Going forward, it is expected that ER delivery projections will be shared with Carbon Fund Participants in advance of each fund meeting.

Box 1: SORT risk categories and unpacked ER delivery risk assessment factors

1. Political and governance

2. Macroeconomic

3. Sector strategies and policies

   - Government ownership
   - Relevant sectoral policies, including those outside of the forest sector
   - Land tenure

4. Technical design of project or program

   - Addresses the drivers of deforestation/degradation/land use change
   - Prioritizes proposed program activities from the available strategic options
   - Incorporates appropriate incentives tailored to different types of stakeholders
   - Proposed approaches are sufficiently diverse
   - Resources are flexible enough
   - Program costs have been appropriately identified
   - Proposed program activities have a track record of being effective
   - Program design reflects capacity of stakeholders involved in implementation

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5. Institutional capacity for implementation and sustainability

- Capacity of coordinating entity and stakeholders involved in implementation
- Program complexity
- Monitoring, reporting and verification (MRV)
- Monitoring and evaluation

6. Fiduciary

- Secured financing

7. Environment and social

8. Stakeholders