



Buffer Guidelines

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Buffer Guidelines

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1. Introduction

Through its Carbon Fund, the FCPF is seeking to pilot the implementation of REDD+ ER Programs in a diverse set of countries, via the use of positive incentives. Specifically, CF Participants will fund forest carbon Emission Reductions achieved by discrete, country-level REDD+ ER Programs. The terms of such funding will be stipulated in an ERPA signed for each ER Program.

All the ERs achieved by a REDD+ ER Program are subject to both Uncertainty and Reversal Risks. Specifically:

1. Improved observation methods and data, may indicate that the emission reduction were overestimated for prior reporting periods.
2. Certain physical disturbances may cause forest carbon emissions that reduce the total number of ERs achieved.

To help manage these risks, the CF may rely on an ER Program CF Buffer to be managed by the Buffer Manager. As part of the ER Program CF Buffer, three (3) separate buffer reserve accounts will be established:

1. an 'Uncertainty Buffer' to create incentives for improving (reducing) uncertainty associated with the estimation of ERs and manage the risk that the emission reductions were overestimated for prior reporting periods;
2. a 'Reversal Buffer' to insure against potential Reversals; and
3. a 'Pooled Reversal Buffer' to insure against potential large-scale Reversals which exceed the amount of Buffer ERs set aside in the Reversal Buffer (covering, on a pro-rata basis and subject to certain requirements, Reversal Risks that may materialize under any ER Program).

As detailed in these Buffer Guidelines, the proportion of ERs that must be set-aside in each buffer reserve account may change depending on improvements in emissions reductions estimates or revisions to Reversal Risk assessments. Buffer ERs that were set-aside for an initial reporting period may be released after subsequent Reporting Periods pending such improvements or revisions. Thus, the buffer reserves serve a dual purpose of both insuring against potential losses and providing incentives for improved quantification (reduction in Uncertainty) and management of Reversal Risks.

In the event that any transaction of ERs under any ER Program will be carried out by a specific registry which provides for its own buffer rules and procedures such registry's buffer rules and procedures may prevail, if such an arrangement is agreed with the Carbon Fund.

Capitalized terms used in these Buffer Guidelines are defined in the FCPF Carbon Fund Glossary of Terms.

2. References

2.1 The following are references made in the Buffer Guidelines to other documents:

- a) FCPF Methodological Framework: Provides the overarching guidance and act as a standard that is designed to achieve a consistent approach to carbon accounting and programmatic characteristics.
- b) Validation and Verification Guidelines: Provides the procedures for third party Validation and Verification by a Validation and Verification Body.

- c) Process Guidelines: Provides the procedures for the ER Program cycle from ER Program pre-approval to payment for Emission Reductions.
 - d) Guidelines on the application of the methodological framework on technical corrections to GHG emissions and removals reported in the reference period;
 - e) FCPF Glossary of Terms: a separate general reference document providing a consolidated set of definitions of capitalized terms used throughout various instruments under the FCPF Carbon Fund.
- 2.2 Additionally, applicable templates are used to capture data or information required in the FCPF processes and provides pre-defined fields and specific guidance:
- a) ER Monitoring Report: Form and guidance to help REDD Country Participants to prepare a monitoring report describing the results achieved under an ER Program during a Reporting Period.
 - b) Validation/Verification Report Templates: Form and guidance to help Validation and Verification Bodies to prepare the Validation/Verification Report.

3. Use of ER Program Transaction Registries to Manage Buffer Reserves

- 3.1 Criterion 19 of the MF requires ER Programs to manage Reversal Risks through the use of an ER Program CF Buffer managed by the Buffer Manager. Likewise, Criterion 22 indicates that an ER Program CF Buffer shall be used to hold a set-aside of ERs in order to account for quantification Uncertainty.
- 3.2 Criterion 38 of the MF stipulates that ER Programs shall ensure that ERs are not double-counted (or “generated more than once”) and that ERs sold and transferred under an ERPA are not used or claimed by any other entity for any other purpose. These assurances may be achieved through the establishment and/or use of an “ER Transaction Registry” that meets certain criteria and can perform functions in accordance with the methods and definitions of the MF (Indicators 38.1-38.4), an ER Program Entity may establish its own ER Transaction Registry or use a “centralized” ER Transaction Registry managed by a third party on its behalf (Indicator 38.1).
- 3.3 ER Programs shall establish buffer reserve accounts in an appropriate ER Transaction Registry to manage Reversal Risks and Uncertainty through the ER Program CF Buffer.
- 3.4 Three (3) separate buffer reserve accounts shall be established, which together will comprise the ER Program CF Buffer:
- a) An ‘Uncertainty Buffer’ account to hold ERs set aside for the purpose of managing Uncertainty,
 - b) An ER Program-specific ‘Reversal Buffer’ account to hold ERs set aside for the purpose of managing Reversal Risks, and
 - c) A ‘Pooled Reversal Buffer’ account to hold ERs set aside for the purpose of managing Reversal Risks that, if materialized, may exceed the amount of ERs set aside in the Reversal Buffer account (covering, on a pro-rata basis and subject to certain requirements, Reversal Risks that may materialize under any ER Program).
- 3.5 The Buffer Manager(s) will manage these accounts in accordance with the Buffer Guidelines to manage Uncertainty and Reversal Risks, respectively, and to dispose of Buffer ERs set aside in these accounts at the end of the Term of the CF ERPA.

4. Establishing Buffer Reserve Accounts in the ER Program Transaction Registry

- 4.1 At the outset of an ER Program, separate accounts must be created in an appropriate ER Transaction Registry for the exclusive purpose of receiving, disbursing, or canceling Buffer ERs that will be allocated to the Uncertainty Buffer, the Reversal Buffer and the Pooled Reversal Buffer.
- 4.2 The Reversal Buffer and the Pooled Reversal Buffer accounts will exist separately from any reversal risk management accounts established under an ER Program to manage reversal risks for ERs that are not generated during the Crediting Period and are not required to be compliant with the FCPF requirements.
- 4.3 The Buffer Manager shall be given sole authority to access and manage the Uncertainty Buffer, Reversal Buffer and Pooled Reversal Buffer accounts, such that transfers of ERs to and from the accounts, and cancelation of Buffer ERs from the accounts, may only be initiated by the Buffer Manager.
- 4.4 The technical requirements and modalities for managing the Uncertainty Buffer, Reversal Buffer and Pooled Reversal Buffer accounts are elaborated in the operational guidance established for the ER Transaction Registry, in accordance with Criterion 38 (Indicator 38.4) of the MF.

5. Allocation of ERs to the Buffer Reserve Accounts

- 5.1 Each time ERs are reported and verified, a portion of the reported ERs must be set aside in the Uncertainty Buffer, Reversal Buffer and Pooled Reversal Buffer accounts.
- 5.2 Once Total ERs are determined for a particular Reporting Period, the ER Program Entity and the World Bank¹ will instruct, or help instruct, as applicable, the administrator of the ER Transaction Registry to establish serial numbers for the amount of Total ERs.
- 5.3 The ER Program Entity and the World Bank or the Buffer Manager will instruct, or help instruct, as applicable, the ER Transaction Registry administrator to transfer and deposit a portion of the serialized ERs, as Buffer ERs, into the Uncertainty Buffer account. This portion shall be determined following Section 6 of the Buffer Guidelines.
- 5.4 The ER Program Entity and the World Bank or the Buffer Manager will instruct, or help instruct, as applicable, the ER Transaction Registry administrator to transfer and deposit a separate portion of the serialized ERs, as Buffer ERs, into the Reversal Buffer account. This portion shall be determined following Section 7 of the Buffer Guidelines.
- 5.5 The ER Program Entity and the World Bank or the Buffer Manager will instruct, or help instruct, as applicable, the ER Transaction Registry administrator to transfer and deposit a separate portion of

¹ The World Bank refers to the World Bank acting as Trustee of the Carbon Fund.

the serialized ERs, as Buffer ERs, into the Pooled Reversal Buffer account. This portion shall be determined following Section 7 of the Buffer Guidelines.

- 5.6 The ER Program Entity and the World Bank shall instruct, or help instruct, as applicable, the ER Transaction Registry administrator to transfer from the remaining serialized ERs an amount of ERs designated for transfer to the CF or other buyers into one or more account(s) designated to hold ERs.

6. Determining the Quantity of ERs to Allocate to the Uncertainty Buffer

- 6.1 Uncertainty of Emission Reductions associated with deforestation, forest degradation and enhancements are reported separately if measured through separate (i.e., non-integrated) approaches and when degradation is estimated using proxy data. If non-integrated approaches are used, separate quantities shall be determined for the portion of Total ERs that resulted from avoided deforestation and avoided forest degradation respectively.
- 6.2 The quantity of Total ERs associated with avoided deforestation shall be multiplied by the appropriate “conservativeness factor” for the aggregate uncertainty of the estimate for ERs (i.e. RL minus monitored and reported emissions and removals), as presented in the following Table 1 (from Criterion 22 of the Methodological Framework). If an integrated approach is used to measure deforestation, forest degradation and/or enhancements together, the conservativeness factor (see Table 1) is applied to the Total ERs only if spatially-explicit activity data (IPCC Approach 3) and high-quality emission factors (IPCC Tier 2) were used in their calculation. Otherwise, as a default, Clause 6.3 of the Buffer Guidelines applies.

Table 1. Quantification Uncertainty Conservativeness Factors

Aggregate Uncertainty of ERs	Conservativeness Factor
≤ 15%	0%
> 15% and ≤ 30%	4%
> 30% and ≤ 60%	8%
> 60% and ≤ 100%	12%
> 100%	15%

- 6.3 If forest degradation is measured through a separate approach using proxy-based approaches, a general conservativeness factor of 15% is applied to the Total ERs associated with forest degradation.
- 6.4 The portion of Total ERs allocated as Buffer ERs to the Uncertainty Buffer shall be equal to the sum of the two amounts calculated in Clauses 6.2 and 6.3 of the Buffer Guidelines.

7. Determining the Quantity of ERs to Allocate to the Reversal Buffer and the Pooled Reversal Buffer

- 7.5 Reversals can be caused both by natural disturbances and by human activities, which may be driven by a range of factors both internal and external to an ER Program.
- 7.6 A certain quantity of ERs out of the Total ERs shall be allocated as Buffer ERs to the Reversal Buffer and the Pooled Reversal Buffer account to help manage the Reversal Risk. This quantity is calculated following each Reporting Period as a percentage of the Total ERs for that Reporting Period minus the quantity of ERs allocated to the Uncertainty Buffer for that Reporting Period.
- 7.7 The percentage of ERs to be set aside in the Reversal Buffer and Pooled Reversal Buffer accounts shall be determined by the World Bank, following consultations with the Program Entity, or by the Buffer Manager, as applicable, in accordance with the Reversal Risk assessment tool below.
- 7.8 The Reversal Risk assessment tool shall be used to determine the Reversal Risk Set-Aside Percentages for each of the Risk Factors listed in the first column of Table 2 below. The full Reversal Risk Set-Aside Percentage for the whole ER Program is calculated as the sum of the Reversal Risk Set-Aside Percentages for each of the Risk Factors. The Risk Indicators in the second column of Table 2 below are indicative and non-exclusive, and are provided to assess the Reversal Risk for each of the Risk Factors. The Reversal Risk is assessed for each Risk Factor (A-D) separately as high, medium or low. Based on the default Reversal Risk Set-Aside Percentage (Table 2, column 3) and depending on the classification of the Reversal Risk for each Risk Factor (A-D) and the corresponding incremental discount (Table 2, column 4), the resulting Reversal Risk Set-Aside Percentage shall be determined.

Table 2. Determination of Reversal Risk Set-Aside Percentage

Risk Factors	Examples of Risk Indicators	Default Reversal Risk Set-Aside Percentage	Discount (increment)	Resulting Reversal Risk Set-Aside Percentage
Default risk	<ul style="list-style-type: none"> Not applicable, fixed minimum amount 	10%	Not applicable	10%
A. Lack of broad and sustained stakeholder support	<ul style="list-style-type: none"> Are stakeholders aware of, and/or have positive experience with FGRM, benefit sharing plans etc. or similar instruments in other contexts? Have occurrences of conflicts over land and resources been addressed? 	10%	Reversal Risk is considered high: 0% discount; OR	10%
			Reversal Risk is considered medium: 5% discount; OR	5%

			Reversal Risk is considered low: 10% discount	0%
B. Lack of institutional capacities and/or ineffective vertical/cross sectoral coordination	<ul style="list-style-type: none"> • Is there a track record of key institutions in implementing programs and policies? • Is there experience of cross-sectoral cooperation? • Is there experience of collaboration between different levels of government? 	10%	Reversal Risk is considered high: 0% discount; OR	10%
			Reversal Risk is considered medium: 5% discount; OR	5%
			Reversal Risk is considered low: 10% discount	0%
C. Lack of long term effectiveness in addressing underlying drivers	<ul style="list-style-type: none"> • Is there experience in decoupling deforestation and degradation from economic activities? • Is relevant legal and regulatory environment conducive to REDD+ objectives? 	5%	Reversal Risk is considered high: 0% discount; OR	5%
			Reversal Risk is considered medium: 2% discount; OR	3%
			Reversal Risk is considered low: 5% discount	0%
D. Exposure and vulnerability to natural disturbances	<ul style="list-style-type: none"> • Is the Accounting Area vulnerable to fire, storms, droughts, etc? • Are there capacities and experiences in effectively 	5%	Reversal Risk is considered high: 0% discount; OR	5%
			Reversal Risk is considered medium: 2% discount; OR	3%

	preventing natural disturbances or mitigating ² their impacts?		Reversal Risk is considered low: 5% discount	0%
Actual Reversal Risk Set-Aside Percentage: 10+(Result A+ Result B+ Result C+ Result D) = 10 to 40%				

7.9 From the Actual Reversal Risk Set-Aside Percentage, as determined in accordance with Table 2 above, half of the Default Risk percentage of 10%) shall be deposited as Buffer ERs into the Pooled Reversal Buffer account while the remainder of the Actual Reversal Risk Set-Aside Percentage shall be deposited as Buffer ERs into the Reversal Buffer account.

7.10 In determining the Actual Reversal Risk Set-Aside Percentage after each Reporting Period, the World Bank and the Buffer Manager(s), as applicable, shall take into account the results of any related assessment done by another entity or body authorized by and acting on behalf of the CF (i.e. Validation and Verification Body as described in the Validation and Verification Guidelines).

8. Adjustments to the Uncertainty Buffer

8.1 An ER Program may improve its MRV system, including data sampling or measurement techniques, such that the Uncertainty of Total ERs is reduced and the ER Program qualifies for a lower conservativeness factor, as indicated in Table 1 (above).

8.2 Also, improved data sampling or measurement techniques shall be used to update estimates for prior Reporting Periods. If such updates result in a lower estimate of Total ERs for prior Reporting Periods, Clause 8.3 applies. If such updates result in a higher estimate of Total ERs for prior Reporting Periods, Clause 8.4 applies.

8.3 If updates result in a *lower* estimate of Total ERs for prior Reporting Periods, ERs need to be cancelled from the Uncertainty Buffer account. Then:

- a) The Buffer Manager shall calculate the quantity of Uncertainty Buffer ERs to be canceled using the following formula:

$$Q_c = G_{t-1} - G_{t-1 \text{ updated}}$$

Where:

² Activities to mitigate natural disturbance may include education to reduce the risk of uncontrolled fires resulting from slash-and-burn agriculture; periodic fuel removal; establishment and maintenance of fire breaks and towers; deployment and maintenance of fire-fighting equipment (for fire risk); planting of diverse and resistant tree species (for risk of pests or disease); planting of frost, drought, flood, or wind-tolerant species (for extreme weather risk); and use of salinity-tolerant plant species (for salt-water intrusion risk)

- Q_c = The quantity of Uncertainty Buffer ERs to be canceled
- G_{t-1} = The original estimate of Total ERs for the prior Reporting Periods as estimated in the respective monitoring report(s)
- $G_{t-1 \text{ updated}}$ = The updated estimate of Total ERs for the prior Reporting Periods, based on the improved measurements

Updated estimates shall only affect Buffer ERs already deposited in the Uncertainty Buffer account in prior Reporting Periods. Therefore, if Q_c is greater than the remaining Buffer ERs in the Uncertainty Buffer account from prior Reporting Periods, then the Buffer Manager shall only cancel all Buffer ERs in the Uncertainty Buffer account from prior Reporting Periods and permanently retire their associated serial numbers.

- b) If the updated estimates for prior Reporting Periods show the same or a higher uncertainty, no further action is required. If the updated estimates for prior Reporting Periods can be produced such that the Uncertainty of Total ERs is reduced and a lower conservativeness factor applies as indicated in Table 1, Buffer ERs can potentially be released. The potential quantity of Uncertainty Buffer ERs to be released is calculated as follows:

$$Q_R = D_{t-1} - Q_C - (G_{t-1 \text{ updated}} * CF_t)$$

Where:

- Q_R = The quantity of Uncertainty Buffer ERs to be released
- D_{t-1} = The remaining Buffer ERs in the Uncertainty Buffer account from prior Reporting Periods
- Q_C = The quantity of Uncertainty Buffer ERs to be canceled
- $G_{t-1 \text{ updated}}$ = The updated cumulative estimate of Total ERs for the prior Reporting Periods, based on the improved measurements
- CF_t = The revised conservativeness factor, after improvements in measurements and respective reduction in uncertainty

If Q_R is positive then the Buffer Manager may release ERs from the Uncertainty Buffer equivalent to Q_R and transfer them to an account designated to hold ERs following the instructions of the ER Program Entity or World Bank, as applicable.

If Q_R is negative then no Uncertainty Buffer ERs can be released for prior Reporting Periods.

8.4 If updates result in an *equal or higher* estimate of Total ERs for prior Reporting Periods, then:

- a) As appropriate, Sections 5, 6, and 7 of the Buffer Guidelines shall be followed to determine a new quantity of Total ERs for the prior Reporting Periods, as well as revised quantities for allocations to the Uncertainty Buffer, the Reversal Buffer and the Pooled Reversal Buffer.
- b) If the revised quantity of required allocations to the Uncertainty Buffer for the prior Reporting Periods is greater than the original allocation, then additional ERs shall be allocated to the Uncertainty Buffer to make up the difference.

- c) If the revised quantity of required allocations to the Uncertainty Buffer for the prior Reporting Periods is less than the original allocation, then the Buffer Manager may release ERs from the Uncertainty Buffer and transfer them to an account designated to hold ERs following the instructions of the ER Program Entity or World Bank, as applicable. The quantity to be released shall be equal to the difference between the original and revised allocation requirements.
- d) Additional allocations of ERs to the Reversal Buffer and the Pooled Reversal Buffer shall be made as necessary, following Section 7 of the Buffer Guidelines.

9. Disposal of Uncertainty Buffer ERs at the End of the Term of the CF ERPA

- 9.1 If the ER Program Entity does not wish to maintain an uncertainty buffer reserve beyond the end of the Crediting Period, then the Buffer Manager shall cancel the ERs in the Uncertainty Buffer account in the ER Transaction Registry prior to the end of the Term of the CF ERPA. ERs shall be canceled by removing them from the Uncertainty Buffer account and permanently retiring their associated serial numbers.
- 9.2 If the ER Program Entity wishes to continue maintaining a buffer reserve serving the same function as the Uncertainty Buffer beyond the end of the Crediting Period, then the Buffer Manager shall transfer ERs from the Uncertainty Buffer account in the ER Transaction Registry to an equivalent buffer account designated and controlled by the ER Program Entity or any other entity designated by the ER Program Entity prior to the end of the Term of the CF ERPA.

10. Compensating for Reversals Using the Reversal Buffer and the Pooled Reversal Buffer

- 10.1 A “Reversal” occurs if one or more disturbance event(s) result in the aggregate amount of ERs measured and verified within the Accounting Area for one Reporting Period being less than the aggregate amount of ERs measured and verified within the Accounting Area for the previous Reporting Period(s).
- 10.2 The Program Entity shall inform the World Bank of a Reversal Event and identify the occurrence of a Reversal Event in its period reporting, as specified in an ERPA.
- 10.3 In the event that the Program Entity and the World Bank disagree on the occurrence, cause and/or scope of a Reversal Event, if requested by the Trustee, the occurrence, cause and/or scope of a Reversal Event shall be assessed and Verified by a Validation and Verification Body.
- 10.4 Subject to Clause 10.3 of the Buffer Guidelines, the World Bank determines whether a Reversal has occurred and, if so, notifies the Buffer Manager accordingly. A Reversal can only occur if ERs have been transferred to the CF or other buyers, for at least one prior Reporting Period.
- 10.5 If a Reversal occurs, then Buffer ERs shall be canceled from the Reversal Buffer account to compensate for the Reversal.

10.6 The quantity of Buffer ERs canceled from the Reversal Buffer account shall be equal to the amount of transferrable ERs³ generated in previous Reporting Periods and are proportionally affected by the Reversal. The amount of transferrable ERs affected by the Reversal shall be calculated as follows:

$$R_c = C/T_{t-1} \times (T_{t-1} - T_t)$$

Where:

- R_c = Quantity of Buffer ERs canceled from the Reversal Buffer account
- C = Quantity of transferrable ERs since the Crediting Period Start Date.
- T_{t-1} = Cumulative quantity of Total ERs estimated for prior Reporting Periods (as an aggregate of ERs accumulated since the Crediting Period Start Date)
- T_t = Cumulative quantity of Total ERs estimated including the current Reporting Period (as an aggregate of ERs accumulated since the Crediting Period Start Date)

10.7 Buffer ERs shall be canceled by removing them from the Reversal Buffer account, and permanently retiring their associated serial numbers.

10.8 If the amount of Buffer ERs in the Reversal Buffer account does not suffice to fully compensate for the Reversal, then the shortfall amount of Buffer ERs in the Reversal Buffer account shall be covered through an equivalent amount of Buffer ERs from the Pooled Reversal Buffer.⁴ In this case, the World Bank shall instruct the Buffer Manager(s) to cancel Buffer ERs from each ER Program's Pooled Reversal Buffer account on a pro-rata basis. Buffer ERs shall be canceled by removing them from the Pooled Reversal Buffer account, and permanently retiring their associated serial numbers.

10.9 The ER Program Entity and the World Bank or the Buffer Manager shall instruct, or help instruct, as applicable, the ER Transaction Registry administrator to cancel such Buffer ERs in the Reversal Buffer and Pooled Reversal Buffer account, as applicable.

11. Releasing Buffer ERs from the Reversal Buffer

11.1 Reversal Risk assessments after subsequent Reporting Periods may, in accordance with Table 2 above, determine a reduced risk exposure than was determined after the previous Reporting Period (e.g., from high to medium risk or from medium to low risk). Such reduced risk exposure shall reduce the required actual set-aside percentage for Reversal Risks and allow for a release of a corresponding amount of Buffer ERs from the Reversal Buffer.

11.2 If the Reversal Risk Set-Aside Percentages are increased, the amount of ERs in the Reversal Buffer shall be determined in accordance with Section 7 of the Buffer Guidelines.

11.3 If the required amount of Buffer ERs set aside for the Reversal Buffer for the current Reporting Period was reduced below the required amount of Buffer ERs set aside in prior Reporting Periods,

³ Transferrable ERs are equal to Total ERs minus the set aside Buffer ERs.

⁴ In the event that neither the Reversal Buffer nor the Pooled Reversal Buffer are able to offset the effect of a Reversal in full, the remaining effect of a Reversal will be addressed in accordance with the terms of the Emission Reductions Payment Agreement and the General Conditions applicable thereto.

then the Buffer Manager shall release Buffer ERs from the Reversal Buffer account in an amount equal to the difference of such required amounts of Buffer ERs and transfer those released Buffer ERs into an account designated to hold ERs, following the instructions of the ER Program Entity and the World Bank. The quantity of Buffer ERs to be released from the Reversal Buffer account shall be determined using the following formula:

$$Q_r = (R_{t-1} - R_t) \times N_{t-1}$$

Where:

- Q_r = The quantity of Buffer ERs to be released from the Reversal Buffer account
- R_{t-1} = The actual set-aside percentage for the Reversal Buffer applied to all Reporting Periods prior to the current Reporting Period ⁵
- R_t = The actual set-aside percentage for the Reversal Buffer applicable to the current Reporting Period
- N_{t-1} = The cumulative total of transferrable ERs for all Reporting Periods prior to the current Reporting Period

11.4 If Q_r is greater than the number of Buffer ERs currently in the Reversal Buffer account, then the quantity of Buffer ERs remaining in the Reversal Buffer account may be released.

11.5 The required set aside for the current Reporting Period is calculated following the procedure described in Section 6 above. The respective quantity of Buffer ERs is transferred to the Reversal Buffer account after the quantity of Buffer ERs to be released were transferred out of the Reversal Buffer account.

12. Disposal of Reversal Buffer ERs and Pooled Reversal Buffer ERs at the End of the Term of the CF ERPA

12.1 At the latest one (1) year before the end of the Term of the CF ERPA, the ER Program shall have in place a robust Reversal Management Mechanism that addresses the risk of Reversals beyond the Term of the CF ERPA and is equivalent to the ER Program CF Buffer. A Reversal Management Mechanism is considered to be equivalent to the ER Program CF Buffer if:

- a) It is a buffer;
- b) It covers potential reversals of the units generated under the ER Program during the Crediting Period;
- c) It allows the transfer of the Buffer ERs from the ER Program CF Buffer;
- d) The reversal risk set-aside percentage calculated under the Reversal Management Mechanism is equal to or higher than the actual reversal risk set-aside percentage of the ER Program CF Buffer⁶;

⁵ Because the set-aside percentage is updated and retroactively applied each Reporting Period, the same percentage shall apply to all prior Reporting Periods.

⁶ The Reversal Risk Set-Aside Percentage calculated under the Post-Crediting Period Reversal Management Mechanism and the actual reversal risk set-aside percentage of the ER Program CF Buffer will be determined for the latest Reporting Period ending before the end of the Crediting Period, and will be verified by the Validation and Verification Body at Verification.

- e) It has in place a periodic monitoring and third-party Verification mechanism for a period from the end of the Crediting Period to 31 December 2037 to confirm if there have been Reversals and makes monitoring and verification reports publicly available; and
- f) The Reversal Management Mechanism is operational and able to address identified Reversals.

12.2 If the ER Program has in place a robust Reversal Management Mechanism equivalent to the ER Program CF Buffer prior to the end of the Term of the CF ERPA, then the Buffer Manager shall, prior to the end of the Term of the CF ERPA:

- a) Transfer all Buffer ERs remaining in the Reversal Buffer account in the ER Transaction Registry to such other buffer reserve account designated and controlled by the ER Program Entity or any other entity designated by the ER Program Entity, and
- b) Transfer a portion of the Buffer ERs remaining in the Pooled Reversal Buffer account in the ER Transaction Registry (equivalent to the ER Program's proportional share of any amount of Buffer ERs in the Pooled Reversal Buffer remaining at the end the ER Program's Term of the CF ERPA, but not exceeding the ER Program's original contribution) to such other buffer reserve account designated and controlled by the ER Program Entity or any other entity designated by the ER Program Entity.

12.3 If the ER Program does not have in place a Reversal Management Mechanism equivalent to the ER Program CF Buffer prior to the end of the Term of the CF ERPA, then the Buffer Manager shall, prior to the end of the Term of the CF ERPA:

- a) Cancel all Buffer ERs remaining in the Reversal Buffer account in the ER Transaction Registry, and
- b) Cancel a portion of the Buffer ERs remaining in the Pooled Reversal Buffer account in the ER Transaction Registry (equivalent to the ER Program's proportional share of any amount of Buffer ERs in the Pooled Reversal Buffer remaining at the end of the ER Program's Term of the CF ERPA, but not exceeding the ER Program's original contribution)

Buffer ERs shall be canceled by removing them from the Reversal Buffer and Pooled Reversal Buffer account and permanently retiring their associated serial numbers.

13. CORSIA eligibility

13.1 If an ER Program wishes to supply "CORSIA Eligible Emissions Units" (as defined under CORSIA), the ER Program shall have in place a robust Reversal Management Mechanism that addresses the risk of Reversals beyond the Term of the CF ERPA and is equivalent to the ER Program CF Buffer. A Reversal Management Mechanism is considered to be equivalent to the ER Program CF Buffer if:

- a) It is a buffer;
- b) It covers potential reversals of the units generated under the ER Program during the Crediting Period;
- c) It allows the transfer of the Buffer ERs from the ER Program CF Buffer;

- d) The reversal risk set-aside percentage calculated under the Reversal Management Mechanism is equal to or higher than the actual reversal risk set-aside percentage of the ER Program CF Buffer⁷;
- e) It has in place a periodic monitoring and third-party Verification mechanism for a period from the end of the Crediting Period to 31 December 2037 to confirm if there have been Reversals and makes monitoring and verification reports publicly available; and
- f) The Reversal Management Mechanism is operational and able to address identified Reversals.

13.2 The Reversal Management Mechanism shall be continually managed and operated by the ER Program Entity and allows the World Bank, in its capacity as trustee of funds made available from the FCPF for this purpose, to (i) carry out a desk review of the publicly available monitoring and verification reports of the ER Program for Reversals and (ii) inform CORSIA of any Reversals and compensation (through replacement of the CORSIA Eligible Emissions Units) under the ER Program's Reversal Management Mechanism, from the end of the Crediting Period through 31 December 2037.

⁷ The Reversal Risk Set-Aside Percentage calculated under the Post-Crediting Period Reversal Management Mechanism and the actual reversal risk set-aside percentage of the ER Program CF Buffer will be determined for the latest Reporting Period ending before the end of the Crediting Period, and will be verified by the Validation and Verification Body at Verification.

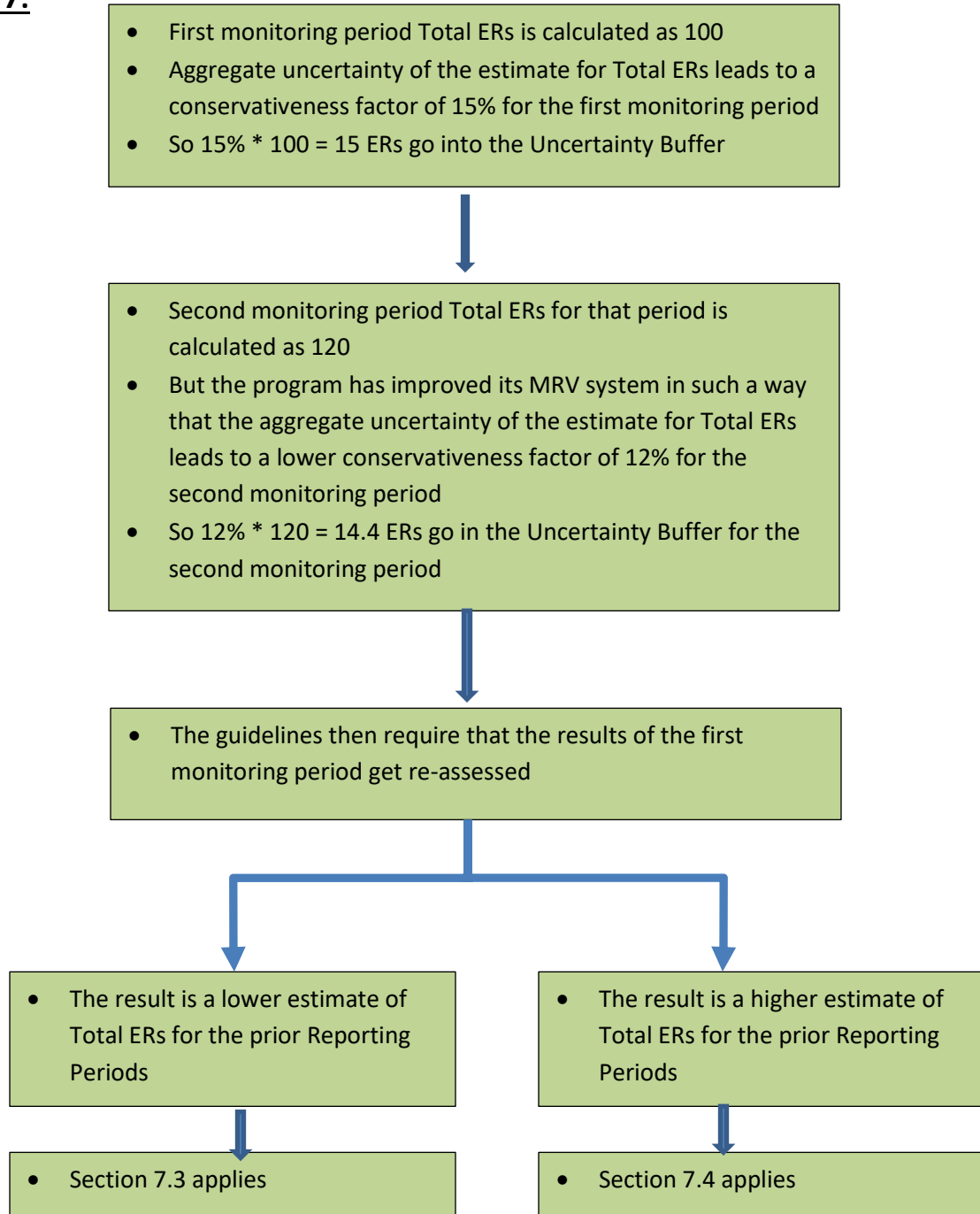
14. Acronyms

CF	Carbon Fund
ERs	Emission Reductions
ERPA	Emission Reductions Payment Agreement
IBRD	International Bank for Reconstruction and Development
FCPF	Forest Carbon Partnership Facility
MF	Methodological Framework of the Carbon Fund dated December 20, 2013

Annex I: Numerical examples

The purpose of this Annex is to illustrate some of the equations in the Buffer Guidelines by providing numerical examples of how they shall be applied. These examples do not supersede the actual text in the guidelines.

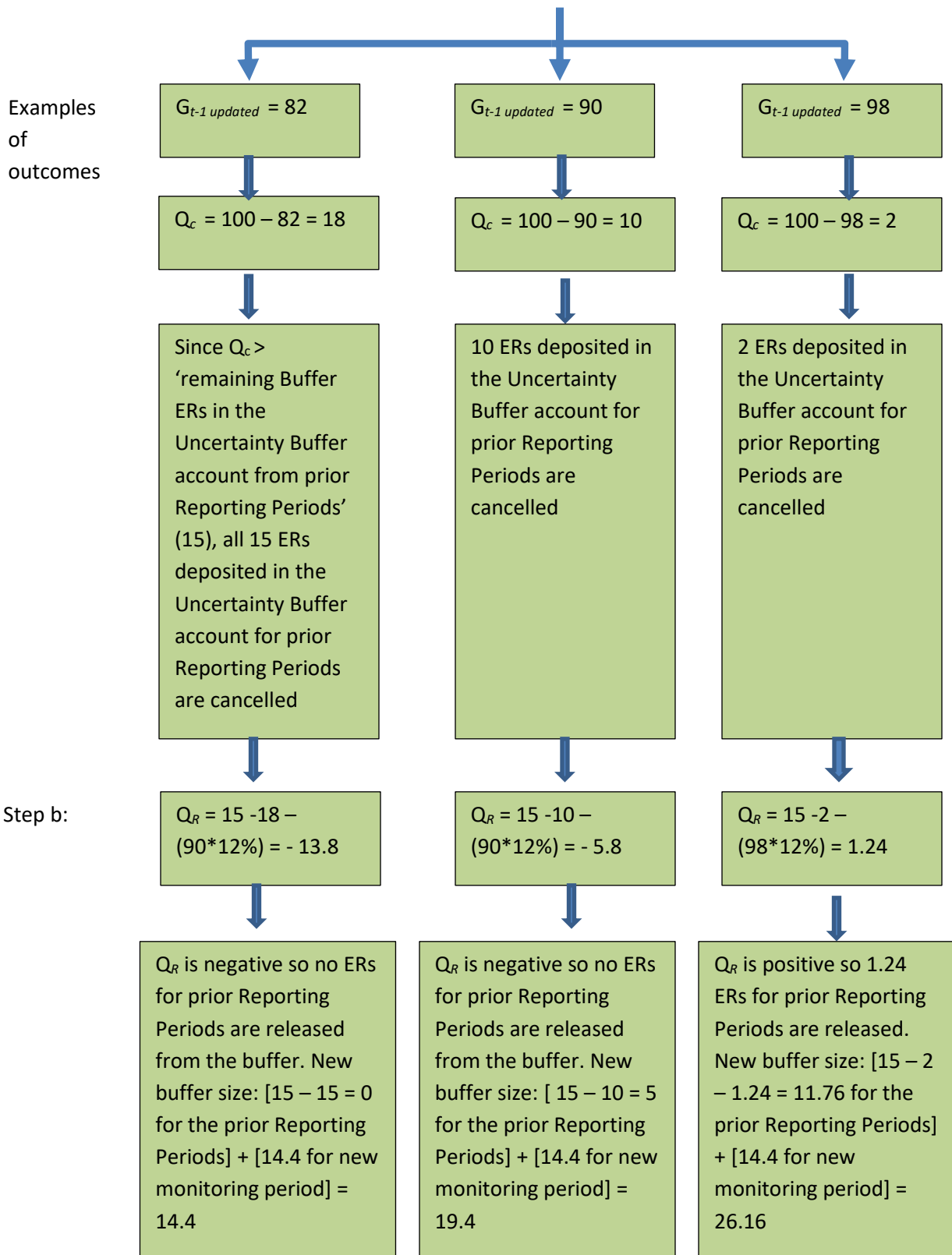
Section 7:



If Section 7.3 applies

$$Q_c = G_{t-1} - G_{t-1 \text{ updated}}$$

Step a



If Section 7.4 applies

Step a

Examples of new quantity of Total ERs

$G_{t-1 \text{ updated}} = 110$

$G_{t-1 \text{ updated}} = 130$

Revised quantities for allocations to the Uncertainty Buffer

Recalculated Buffer:
 $12\% * 110 = 13.2$

Recalculated Buffer:
 $12\% * 130 = 15.6$

Step b

- $13.2 < 15$ (ERs deposited in the Uncertainty Buffer account for prior Reporting Periods)
- So not applicable

- $15.6 > 15$ (ERs deposited in the Uncertainty Buffer account for prior Reporting Periods)
- So 0.6 needs to be added to the buffer

Step c

- $13.2 < 15$ (ERs deposited in the Uncertainty Buffer account for prior Reporting Periods)
- so 1.8 is released back

Not applicable

In addition, $110 - 100 = 10$ new ERs are created

In addition $130 - 100 = 30$ new ERs are created

Section 9:

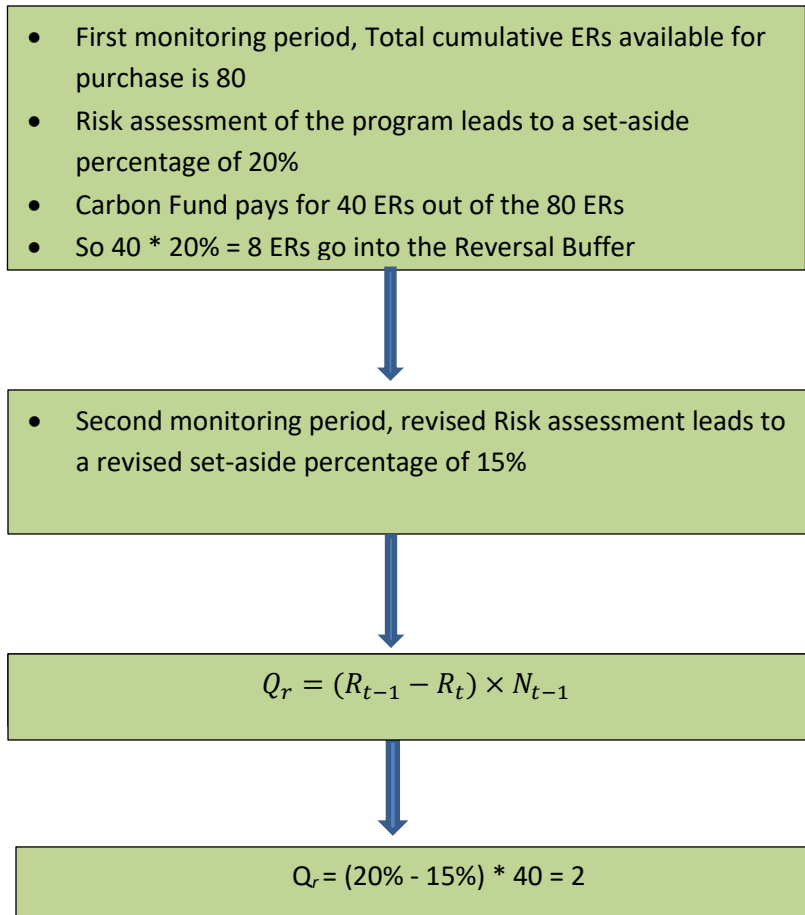
- First monitoring period, Total cumulative ERs available for purchase is 80
- Risk assessment of the program leads to a set-aside percentage of 20%
- Carbon Fund pays for 40 ERs out of the 80 ERs
- So $40 * 20\% = 8$ ERs go into the Reversal Buffer

- Second monitoring period, a Reversal has occurred and the Total cumulative emissions ERs available for purchase over the periods is 70 → Reversal of 10

$$R_c = C/T_{t-1} \times (T_{t-1} - T_t)$$

$$R_c = 40 / 80 \times (80 - 70) = 5$$

Section 10:



Document history

Version	Date	Notes
Version 3.1	May 2022	<ul style="list-style-type: none"> Minor clarifications regarding the calculation of uncertainty buffer ERs.
Version 3	March 2022	<ul style="list-style-type: none"> Section 13 has been added to provide guidance on the procedures, and governance arrangements necessary to ensure monitoring for and compensation of material reversals until the end of the CORSIA's implementation period (2037). This section is applicable to FCPF Programs that wish to generate CORSIA Eligible Emissions.
Version 2	April 2020	<p>Revised version adopted through Resolution CFM/21/2020/02 of 21st Carbon Fund Meeting. Changes made:</p> <ul style="list-style-type: none"> Section 12 of the Buffer Guidelines was revised by requiring the Post-ERPA Reversal Management Mechanism to comply with a set of conditions. The amount of ERs to be set aside in the Reversal Buffer and Pooled Reversal Buffer accounts is based on the Total ERs (minus the ERs set aside in the Uncertainty Buffer account) and not only on the Contract ERs and Additional ERs. The term 'Trustee' was replaced by 'World Bank' where applicable. The terms 'ERPA start date' and 'ERPA term' were replaced with the terms 'Crediting Period Start Date' and 'Crediting Period', where appropriate. Provisions in line with Sections 12.01 (No Reversal of ERs), 13.01 (Notice of Force Majeure Event) and 13.02 (Effect of Force Majeure Event) of the ERPA General Conditions were added. The glossary of terms from the Buffer Guidelines was removed, and such terms were moved to a separate general reference document "FCPF Glossary of Terms. The conditions on the use of the Pooled Reversal Buffer ERs contained in Section 9.6 of the Buffer Guidelines, were removed.
Version 1	December 2015	Initial version approved by CF Participants.