VCS Module

VMD0044

Estimation of emissions from ecological leakage (LK-ECO)

Version 1.0

9 March 2015

Sectoral Scope 14

Module developed by:

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1 SOURCES

This module is one of numerous modules that constitute VCS methodology *VM0007 REDD+ Methodology Framework (REDD-MF)*.

2 SUMMARY DESCRIPTION OF THE MODULE

This module provides procedures for the estimation of ecological leakage in WRC project activities.

3 DEFINITIONS

Definitions are set out in in VCS document *Program Definitions*, and methodology *REDD-MF*. This module does not set out any further definitions.

4 APPLICABILITY CONDITIONS

This module is applicable under the following condition:

- Leakage caused by hydrological connectivity is avoided by project design and site selection, as set out in Section 5 below.

5 PROCEDURES

Under the applicability conditions of this module, ecological leakage affecting the soil (peat) carbon pool does not occur, by ensuring that the effect of hydrological connectivity with adjacent areas is insignificant (ie, causing no significant alteration of mean annual water table depths in such areas). This can be achieved either by an appropriate design (eg, by establishing an impermeable dam, by rewetting peatland surrounded by undrained peatland or by rivers) or by a buffer zone within the project boundary. This buffer zone, if employed, shall be mapped (see module *X-STR*). The width of the buffer zone shall be determined on the basis of quantitative hydrological modeling, or expert judgment.

Therefore:

$$GHG_{LK\text{-}ECO} = 0 \quad (1)$$

6 DATA AND PARAMETERS

6.1 Data and Parameters Available at Validation

Data / Parameter	$GHG_{LK\text{-}ECO}$
Data unit	t CO_2-e
Description	Net GHG emissions due to ecological leakage from the WRC project activity up to year *t**

Equations	1
Source of data	N/A
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	Under the applicability conditions of this methodology, ecological leakage affecting the soil (peat) carbon pool does not occur, by ensuring that the effect of hydrological connectivity with adjacent areas is insignificant, as outlined in Section 5.
Purpose of Data	Calculation of leakage emissions
Comments	N/A

6.2 Data and Parameters Monitored

None.

6.3 Procedures for Monitoring

Water leakage to adjacent areas may cause changes in water table depths outside the project area (compared with the situation without the project intervention) and cause ecological leakage. The absence of significant water leakage (ie, causing flooding outside the project area) to adjacent areas shall be demonstrated with water level gauges. If a buffer zone has been established, these gauges shall be installed in the project area and readings shall be compared with the hydrological assessment on which the establishment of the buffer zone was based. The number and spacing of water level gauges shall be based on hydrological modeling or expert judgment. In the case of an impermeable dam, to demonstrate its effectiveness, water level gauges shall be located outside the dam, which may require agreements with adjacent landowners if the dam is located in the project area. Significant water leakage, if occurring, is limited to accidents that can be repaired (eg, the breaching of a dam). Such accidents and their remediation must be monitored. The repair must occur within 1 year, in which case ecological leakage may be assumed to be insignificant. If the proponent cannot demonstrate adherence to the criteria, the project fails.

7 REFERENCES

None.

DOCUMENT HISTORY

Version	Date	Comment
v1.0	9 March 2015	Initial version