United Nations Framework Convention on Climate Change

Agenda item 4.1. (c) (i)
Paragraph 29 of the annotated agenda

NM108: Emission reduction by application of Dry-cultivated Water-saving and Drought-resistance Rice (D-WDR) in rice cultivation

CDM EB 124

Bonn, Germany, 19-21 March 2025

UNFCCC Secretariat
Mitigation Division

Procedural background

- SSC-NM108 was received on 21 December 2022. The submission was assessed at MP90, and MP91 wherein the MP assessed the draft methodology and requested clarifications from the methodology proponent.
- At MP93, MP agreed to recommend the draft methodology for approval.
- At EB121, the Board requested the MP to further work on the draft methodology.
- MP further assessed the submission at MP94, MP95 requesting the submitter to undertake further changes and at MP96 it agreed to recommend the draft methodology for approval to EB.

Purpose

The draft methodology applies to project activities introducing Dry-cultivated Water-saving and Drought-resistance rice (D-WDR) in existing flooded rice cultivars within the host country.

Applicability

The proposed small-scale methodology applies to project activities introducing Dry-cultivated Water-saving and Drought resistance rice (D-WDR) in rice cultivation.

Key applicability conditions:

- Baseline involves irrigated, flooded fields (upland, rainfed and deep-water rice are not eligible). This shall be demonstrated for all fields;
- No D-WDR has been planted within the project boundary prior to the implementation of the project;
- The project activity does not lead to a decrease in rice yield, nor does it require changes of farmland management practices;
- The project participant shall sign an agreement with the landowner to avoid double counting of ERs.

Baseline emissions:

$$BE_y = \sum_s BE_s$$

$$BE_s = \sum_s (BE_{s,CH4} + BE_{s,N2O})$$

$$BE_{s,CH4} = \sum_{g=1}^{G} EF_{BL,s,g,CH4} \times \min(A_{s,g}, A_{s,bsl}) \times 10^{-3} \times GWP_{CH4}$$

$$BE_{s,N2O} = \sum_{g=1}^{G} EF_{BL,s,g,N2O} \times \min(A_{s,g}, A_{s,bsl}) \times 10^{-3} \times GWP_{N2O}$$

The baseline emission factor shall be determined as per one of the following approaches (in order of priority):

(a) Measurement on reference fields;

(b) Calculation based on regional or global default values.

Baseline emissions

Project emissions:

$$PE_y = \sum_s PE_s$$

$$PE_s = \sum_s (PE_{s,CH4} + PE_{s,N2O})$$

$$PE_{s,CH4} = \sum_{g=1}^{G} EF_{PJL,s,g,CH4} \times A_{s,g} \times 10^{-3} \times GWP_{CH4}$$

$$PE_{s,N2O} = \sum_{g=1}^{G} EF_{PJ,s,g,N2O} \times A_{s,g} \times 10^{-3} \times GWP_{N2O}$$

- Project emission factor shall be determined following similar approach as in the baseline (measurement on reference fields or based on default values).
- Project participants shall take into account potential losses of soil organic carbon caused by the implementation of the project activity

Leakage emissions

Leakage emissions from the theoretical planting area of baseline rice cultivars outside the project boundary:

$$LE_y = \sum_s LE_s$$

$$LE_s = \sum_s (LE_{s,CH4} + LE_{s,N2O})$$

$$LE_{s,CH4} = \sum_{g=1}^{G} EF_{BL,s,g,CH4} \times A_{s,theoretical,g} \times 10^{-3} \times GWP_{CH4}$$

$$LE_{s,N2O} = \sum_{g=1}^{G} EF_{BL,s,g,N2O} \times A_{s,theoretical} \times 10^{-3} \times GWP_{N2O}$$

Key issues and proposed solutions

The following key solutions were implemented in the draft methodology addressing issues from EB 121:

a) It is only applicable if project activities do not lead to a decrease in rice yield, nor require changes of farmland management practices. For conservativeness, Leakage emissions from a potential increase in the planting area of the baseline rice cultivar outside the project boundary in case of a decrease in rice yield due to unforeseen reasons shall be calculated;

b) The term “cultivation practice” is consistently used, replacing the terms “cultivation pattern”, “cultivation method” and “farmland management practices”;

c) The use of the DNDC model was removed as an option from the methodology (the model is for non-commercial purposes only);

Key issues and proposed solutions (2)

d) The introduced cultivation practices, including specific cultivation elements, technologies and crop protection products, shall not be subject to any regulatory restrictions. Further, baseline cultivation practices shall not be subject to any regulatory restrictions and the project cultivation practices are not mandated by any regulation;

e) Remote sensing is introduced as a measure to determine key factors, such as the cultivated area, and the baseline cultivation practice for all project fields;

f) It contains a conservative approach for the estimation of baseline emissions and accurate project emission factor;

g) It includes provisions to calculate project emissions resulting from potential losses of soil organic carbon (SOC) caused by the implementation of the project activity.

Impacts

The new methodology will allow the estimation of emission reductions for project activities implementing Dry-cultivated Water-saving and Drought-resistance rice (D-WDR) in existing flooded rice fields and facilitate their implementation in the host country.

Recommendations to the Board

The MP recommends that the Board adopt the new small-scale methodology.