

**CDM-MP75-A08**

## Information note

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Revision to “AMS-III.BK: Strategic feed supplementation in smallholder dairy sector to increase productivity”

Version 01.0



**United Nations**  
Framework Convention on  
Climate Change

## COVER NOTE

### 1. Procedural background

1. The Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM), at its eighty-ninth meeting, considered the concept note on the "Exploration of methodological options for developing 'agriculture CDM'" and requested the Methodologies Panel (MP) to initiate the work on the proposed revisions of approved methodologies (i.e. AMS-III.BK, AMS-III.Y and AMS-III.F).

### 2. Purpose

2. The purpose is to launch a call for public input on the issues and proposed approaches described in this document in response to EB 89 request mentioned above.

### 3. Key issues and proposed solutions

3. The methodology AMS-III.BK is applicable to project activities that use strategic supplementation to improve the digestibility of feedstuff fed to large ruminants (i.e. dairy cows and/or buffalo) in the smallholder dairy sector, for the purpose of increasing milk productivity and thus reducing methane emissions per unit of milk produced.
4. The current version of the methodology has a complex approach to determine baseline and project emissions. Therefore, the MP is currently considering a revision to the methodology in order to:
  - (a) broaden the scope of eligible technologies/measures,
  - (b) simplify the existing requirements of the methodology to reduce transaction costs for project development.

### 4. Impacts

5. The revision of the methodology, if approved, will simplify and broaden the applicability of the methodology which will potentially facilitate the development of more CDM projects and programmes in the livestock sector.

### 5. Subsequent work and timelines

6. The MP, at its 75<sup>th</sup> meeting, agreed on the draft elements of the revision of the methodology as contained in this information note. After receiving public inputs on the document, the MP will continue working on the revision of the approved methodology, at its next meeting, for recommendation to the Board at a future meeting of the Board.

### 6. Recommendations to the Board

7. Not applicable (call for public inputs).

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## **1. Introduction**

1. The Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM), at its eighty-ninth meeting, considered the concept note on the "Exploration of methodological options for developing 'agriculture CDM'" and requested the Methodologies Panel (MP) to initiate the work on the proposed revisions of approved methodologies (i.e. AMS-III.BK, AMS-III.Y and AMS-III.F).
2. The purpose is to launch a call for public input on the issues and proposed approaches described in this document in response to EB 89 request mentioned above.

## **2. Key issues, analysis and proposed solutions**

### **2.1. Issue summary**

3. The methodology AMS-III.BK is applicable to project activities that use strategic supplementation to improve the digestibility of feedstuff fed to large ruminants (i.e. dairy cows and/or buffalo) in the smallholder dairy sector, for the purpose of increasing milk productivity and thus reducing methane emissions per unit of milk produced.
4. The current version of the methodology has a complex approach to determine baseline and project emissions. Therefore, the MP is currently considering a revision to the methodology in order to: i) broaden the scope of eligible technologies/measures, ii) simplify the existing requirements of the methodology to reduce transaction costs for project development.

### **2.2. Proposed revisions**

#### **2.2.1. Scope and applicability**

5. The MP is considering a new approach which quantifies the level of GHG emissions per unit of output produced (e.g. milk and beef) and also assesses the effects of on-farm productivity improvements to GHG mitigation at the “whole-of-enterprise” (WOE) level.
6. Also, while the current version of the methodology limits the scope to the provision of supplement to large ruminants, the MP considered that various technologies/measures to reduce GHG emission intensity should not be considered in isolation. Therefore, the new approach proposed by the MP will cover project activities that reduce the ratio of enteric emissions per unit output generated by all ruminant livestock on farms, through various mitigation technologies/measures, including but not limited to:
  - (a) Improved nutrition;
  - (b) Improved fertility;
  - (c) Changes to herd structure;
  - (d) Non-animal factors (improving crop and pasture productivity).

## 2.2.2. Baseline emissions

7. In the proposed new approach, baseline emissions related to enteric fermentation are determined at the “whole-of-enterprise” (WOE) level, based on the specific methane emissions per unit of output production in the baseline, multiplied by the output production in the project. If the output is dairy only, output is estimated as litres of milk produced.

$$BE_y = (DMP_{BL,y} \times 365 / OUTPUT_{BL,y}) \times OUTPUT_{PJ,y} \times GWP_{CH_4} / 1,000,000 \quad \text{Equation (1)}$$

Where:

$BE_y$	=	Baseline emissions related to enteric fermentation in year y (t CO <sub>2</sub> e/yr)
$DMP_{BL,y}$	=	Daily Methane Production in the baseline of year y (gCH <sub>4</sub> /day)
365	=	Number of days of year y (days)
$OUTPUT_{BL,y}$	=	WOE Output in the baseline of year y (output/year)
$OUTPUT_{PJ,y}$	=	WOE Output in the project of year y (output/year)
$GWP_{CH_4}$	=	Global warming potential of methane (t CO <sub>2</sub> e/t CH <sub>4</sub> )
1,000,000	=	Conversion of kilograms to tonnes (g/tonne)

8. The specific methane emissions in the baseline ( $DMP_{BL,y}$ ) are determined, based on dry matter/gross energy intake in the baseline and the methane conversion factor depending on the feed characteristics. The dry matter/gross energy intake is estimated, taking into account the following factors:

- (a) Total animal net energy requirements (i.e. the sum of energy requirements for maintenance, growth, and lactation) based on animal weight, daily weight increase, daily milk production;

$$MER_{TOTAL,BL,y} = MER_{Mainte,BL,y} + MER_{Growth,BL,y} + MER_{Lactation,BL,y} \quad \text{Equation (2)}$$

Where:

$MER_{TOTAL,BL,y}$	=	Sum of all animal energy requirements in the baseline for year y (MJ/day)
$MER_{Mainte,BL,y}$	=	Energy requirements for maintenance (MJ/day)
$MER_{Growth,BL,y}$	=	Energy requirements for growth (MJ/day)
$MER_{Lactation,BL,y}$	=	Energy requirements for lactation (MJ/day)

- (b) Gross energy content of the feed;

(c) Dry matter digestibility of the feed.

### 2.2.3. Project emissions

9. Similarly, project emissions related to enteric fermentation are determined at the “whole-of-enterprise” (WOE) level, based on the specific methane emissions per unit of output production in the project ( $DMP_{PJ,y}$ ), multiplied by the output production of the project.

$$PE_y = (DMP_{PJ,y} \times 365) \times GWP_{CH_4} / 1,000,000 \quad \text{Equation (3)}$$

Where:

- $PE_y$  = Project emissions related to enteric fermentation in year  $y$  (t CO<sub>2</sub>e/yr)
- $DMP_{PJ,y}$  = Daily Methane Production in the project of year  $y$  (gCH<sub>4</sub>/day)

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### Document information

Version	Date	Description
01.0	28 March 2018	MP 75, Annex 8 Initial publication. A call for public input will be issued for the revision of AMS-III.BK.

Decision Class: Regulatory

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