

Methodology for Quantifying Nitrous Oxide (N₂O) Emissions Reductions from Reduced Use of Nitrogen Fertilizer on Agricultural Crops (version 1.0)

Errata & Clarification

May 2017

This is a supplemental document to the ACR *Methodology for Quantifying Nitrous Oxide (N₂O) Emissions Reductions from Reduced Use of Nitrogen Fertilizer on Agricultural Crops (version 1.0)*, hereafter referred to as “the Methodology”. The Methodology was adopted for use with the ACR in July 2012. This document describes errata and clarifications to the Methodology and are effective upon the date of posting on ACR’s website. All listed projects must incorporate and adhere to these errata and clarifications as part of any validation or verification criteria. All project developers and validation/verification bodies must refer to this document to ensure that the most current guidance is adhered to in project design, validation and verification. It is intended that topics in this document will be incorporated into any forthcoming versions of the ACR *Methodology for Quantifying Nitrous Oxide (N₂O) Emissions Reductions from Reduced Use of Nitrogen Fertilizer on Agricultural Crops*. As supplemental information or clarifications are needed on future versions of this methodology, updates may be found on ACR’s website. Errata and clarifications are listed by methodology section below.

2.3 Project Emissions

- a. The Methodology states:

“Both direct and indirect pathways of N₂O emissions are eligible.”

The Methodology goes on to explain the various sources of indirect N₂O emissions.

Errata: Indirect pathways of N₂O are ineligible.

Clarification: Only direct pathways of N₂O emissions are eligible.

3.1 Spatial Boundary

- a. The Methodology states:

“The spatial boundary encompasses the results of actions that are under the project proponent’s control. This includes direct and indirect emissions of N₂O (section 1.2) resulting from a reduction of N fertilizer rate at the project site (Figure 1). The spatial boundary includes the project site and indirect emissions from beyond the site of N fertilizer addition.”

Errata: The spatial boundary encompasses the results of actions that are under the project proponent’s control. This only includes direct emissions of N₂O (section 1.2) resulting from a reduction of N fertilizer rate at the project site (Figure 1). The spatial boundary includes the project site.

- b. Figure 1 Caption states:

“Schematic depicting the project spatial boundary for N₂O emissions (dotted line). Direct N₂O emissions from the site of N fertilizer addition (black arrow), and indirect emissions from beyond

the site of N fertilizer addition (white arrows) are shown. Arrow sizes do not reflect the magnitude of N fertilizer addition or N₂O emissions.”

Clarification: Although Figure 1 displays indirect N₂O emission reductions, any emission reductions resulting from indirect project activities are ineligible. Only direct emission reductions from the reduced application of N fertilizer are eligible.

3.3 Greenhouse Gases

- a. Table 1 of the Methodology states that indirect N₂O emissions due to N fertilizer addition are included in the baseline. Table 1 of the Methodology states that indirect N₂O emissions due to N fertilizer addition are included in the project.

Errata: Indirect emissions of N₂O are ineligible for emission reductions. Only emission reductions resulting from direct emissions of N fertilizer reduction are eligible. Indirect N₂O emissions shall not be included.

6.0 Emissions Measurements

- a. The Methodology states:

“All emissions of N₂O (baseline and project, direct and indirect) are reported in units of Megagram of carbon dioxide equivalents (Mg CO₂e).”

The Methodology also states:

“In calculating direct and indirect emissions of N₂O, the methodology utilizes terminology and rationale presented in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (revised Aug. 2011).”

Clarification: All emissions of N₂O (baseline and project, direct) are reported in units of Megagrams of carbon dioxide equivalents (Mg CO₂e).

In calculating direct emissions of N₂O, the methodology utilizes terminology and rationale presented in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (revised Aug. 2011).”

6.1 Baseline Emissions

- a. Equation (1) calculates overall baseline emissions:

$$N_2O_{B \text{ total, } t} = N_2O_{B \text{ direct, } t} + N_2O_{B \text{ indirect, } t} \quad (1)$$

Errata: Indirect emission reductions of N₂O are ineligible. Only direct emission reductions of N₂O are eligible.

$$N_2O_{B \text{ total, } t} = N_2O_{B \text{ direct, } t} \quad (1\text{-NEW})$$

6.1.2 Indirect Emissions

- a. The Methodology states:

“Equations (7) through (9) calculate baseline indirect N₂O emissions from N fertilization.”

Errata: Disregard section 6.1.2 in its entirety. Equations 7-9 shall not be used. Indirect emission reductions of N₂O are ineligible. Only direct emission reductions of N₂O emissions are eligible.

6.2 Project Activity Emissions

- a. Equation (10) calculates overall project emissions:

$$N_2O_{P \text{ total}, t} = N_2O_{P \text{ direct}, t} + N_2O_{P \text{ indirect}, t} \quad (10)$$

Errata: Indirect pathways of N₂O are ineligible. Only direct pathways of N₂O emissions are eligible.

$$N_2O_{P \text{ total}, t} = N_2O_{P \text{ direct}, t} \quad (10-NEW)$$

6.2.2 Indirect Emissions

- a. The Methodology states:

“Equations (16) through (18) calculate indirect, project N₂O emissions from N fertilization.”

Errata: Disregard section 6.2.2 in its entirety. Equations 16-18 shall not be used. Indirect emission reductions of N₂O are ineligible. Only direct emission reductions of N₂O emissions are eligible.

8 Uncertainty Assessment

- a. The Methodology states:

“Annex F (Table F1) provides information on uncertainty ranges for IPCC Tier 1 emissions factors for direct and indirect N₂O emissions and other factors used in the methodology.”

Errata: Disregard uncertainty ranges for IPCC Tier 1 emissions factors for indirect N₂O emissions listed in Annex F. Indirect emission reductions of N₂O are ineligible. Only direct emission reductions of N₂O emissions are eligible.

F Annex F: Default Factors

- a. Table F1 in Annex F contains default (Tier 1) values for calculating direct and indirect emissions of N₂O from baseline and project scenarios, and from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Revised Aug. 2011, Vol. 4, Ch. 11, IPCC 2006).

Errata: Disregard default Tier 1 values listed for indirect N₂O emissions in table F1. Indirect emission reductions of N₂O are ineligible. Only direct emission reductions of N₂O emissions are eligible.