

DNDC structural uncertainty deduction factors for ACR methodology *Voluntary Emission Reductions in Rice Management Systems, v1.0*

-Updated September 2016-

The ACR methodology *Voluntary Emission Reductions in Rice Management Systems* requires projects to apply a structural uncertainty deduction factor. The structural uncertainty deduction factors are derived based on validation of the DNDC model using measured methane flux data. Because additional validation data is expected to become available on an ongoing basis, allowing the structural uncertainty deduction factors to be updated, the tables below will be periodically replaced with new versions.

All projects must use the latest version of the table(s) below at the time of GHG Project Plan validation. As additional regional calibration modules are added to the methodology, additional tables providing the structural uncertainty deduction factors for those regions will also be made available in this document.

1 Structural uncertainty deductions for projects in California and the Midsouth

Below are the DNDC structural uncertainty deduction factors corresponding to the ACR-approved version of the model dated July 8, 2016. It was confirmed that the model performance for this version of the model was the same across the California, Mississippi Delta and Gulf Coast regions. Therefore, this updated uncertainty analysis applies to all three regions.

Table A-1. Structural uncertainty deduction factors for projects in California and the Midsouth,

Area size (n) [ha]	Structural uncertainty deduction per ha [kg CO ₂ -eq ha ⁻¹]*	u_{struct} [kg CO ₂ -eq]
405 (minimum)	71.5	28,963
500	64.4	32,182
1000	45.5	45,512
2500	28.8	71,960
5000	20.4	101,767
10000	14.4	143,920

This methodology requires that a minimum of five individual Rice Fields or 405 ha (1000 acres) be included in the Project Activity. Per table A-1 above, the minimum

* Note: these values have been rounded to a single decimal place.

area of 405 ha corresponds to an uncertainty deduction of 71.5 kg CO₂-eq per hectare and year.

The uncertainty deduction for an individual Project can be calculated based on the total area of all the Projects currently enrolled by ACR. Please contact ACR staff to confirm the total rice program area that will determine which uncertainty value to apply. So, for a total area of 25,000 ha, the Project Proponent shall subtract 71,960 kg CO₂-eq, or 28.8 kg CO₂-eq per ha.

Note that u_{struct} is defined as the absolute deduction for structural uncertainty for the whole Project [kg CO₂-eq].

For projects with areas between the thresholds identified in table A-1 above the Project Proponent shall apply the structural uncertainty deduction that is associated with the lower threshold value, or they may apply the per ha calculation provided below.

These deduction factors correspond to the following formula for calculating the per ha uncertainty deduction in units of kg CO₂eq/ha/yr:

$$\text{Structural uncertainty deduction per ha} = \frac{1,439}{\sqrt{n}}$$

where n = number of hectares of the project.