
Dataset Information:

Title	Burning crop residues
Abstract	Greenhouse Gas (GHG) emissions from burning crop residues consist of methane and nitrous oxide gases produced by the combustion of a percentage of the crop residues burnt on-site. Computed at Tier 1 following the 2006 IPCC Guidelines for National GHG Inventories (IPCC, 2006); available by country, with global coverage and relative to the period 1990-2010, with annual updates.
Supplemental	This domain contains data on GHG emissions, associated emission factors and underlying activity data. The FAOSTAT Emissions data are estimates by FAO and do not coincide with GHG data reported by member countries to UNFCCC. The database is intended primarily as a service to help member countries assess and report their emissions, as well as a useful international benchmark. The FAOSTAT Emissions data are disseminated publicly to facilitate continuous feedback from member countries.
Creation Date	2012
Last Update	2012
Data Type	Climate Change - Greenhouse Gases
Category	Environment
Time Period	1990 - 2010
Periodicity	Annual
Geographical Coverage	World
Spatial Unit	Country
Language	Multilingual (EN, FR, ES)

Methodology and Quality Information:

Methods and processing	<p>Greenhouse Gas (GHG) emissions from burning crop residues consist of methane (CH₄) and nitrous oxide (N₂O) gases produced by the combustion of a percentage of crop residues burnt on-site. The mass of fuel available for burning should be estimated taking into account the fractions removed before burning due to animal consumption, decay in the field, and use in other sectors (e.g., biofuel, domestic livestock feed, building materials, etc.). The FAOSTAT data are estimated at Tier 1 following IPCC, 2006, Vol. 4, Ch. 2 and 5.</p> <p>The CH₄ and N₂O emissions are estimated at country level, using the formula:</p> $\text{Emission} = A * EF$ <p>where:</p> <p><i>Emission</i> = GHG emissions in units of gr CH₄ and gr N₂O; <i>A</i> = Activity data, representing the total amount of biomass burned, kg of dry matter (1); <i>EF</i> = Tier 1, default IPCC emission factors, expressed in gr CH₄/kg of dry matter and gr N₂O/kg of dry matter (2).</p> <p>(1) Harvested area statistics are taken from FAOSTAT and used to estimate the amount of biomass burned using mean default crop values of mass of fuel available for combustion (M_B) and combustion factor (C_f) in IPCC, 2006: Vol.4, Ch. 2, Tab. 2.4. The crops included are: wheat, maize, rice and sugarcane. The mass is then reduced by the fraction of crop residue burnt on-site—assumed to be 10%, following IPCC, 2000: Ch.4, Section 4A.2.1.1.</p> <p>(2) Global default EF values taken from IPCC, 2006: Vol. 4, Ch. 2, Tab. 2.5.</p> <p>Dimensionless conversion factors used are: 10⁻³, to convert the activity data from kg to tonnes (dry matter); 10⁻⁹, to convert the emissions from gr CH₄ to Gg CH₄ and gr N₂O to Gg N₂O; GWP- CH₄ = 21 (100-year time horizon global warming potential), to convert Gg CH₄ to Gg CO₂eq and</p>
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GWP-N₂O = 310 (100-year time horizon global warming potential), to convert Gg N₂O to Gg CO₂eq (IPCC, 1996: Technical Summary, Tab. 4 pg. 22).

The burning crop residues domain contains the following data categories available for download: country-level GHG emissions, provided as total, in Gg CH₄, Gg N₂O and Gg CO₂eq; implied emission factors; and activity data. Data is available for 170 individual countries and territories, as well as for standard FAOSTAT regional aggregations, plus Annex I and non-Annex I groups. The data period is 1990-2010, with annual updates.

Uncertainties in estimates of GHG emissions are due to uncertainties in emission factors and activity data. They may be related to, inter alia, natural variability, partitioning fractions, lack of spatial or temporal coverage, spatial aggregation. In the case of burning crop residues more detailed information are available in the guidelines (IPCC, 2006: Vol.4, Ch. 5, Section 5.2.4.4).

References

IPCC. 2000. Good practice guidance and uncertainty management in national greenhouse gas inventories. In: J. Penman et al. (Eds.), IPCC National Greenhouse Gas Inventories Programme, Technical Support Unit, Hayama, Japan.

IPCC. 2006. 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (Eds), IGES, Hayama, Japan.

Data Collection Method Computed

Completeness 100%

Links www.fao.org/climatechange/micca/ghg/
www.ipcc-nggip.iges.or.jp/public/

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www.faostat.fao.org

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