

Dataset Information:	
<b>Title</b>	Cropland
<b>Abstract</b>	Greenhouse gas (GHG) emissions data from cropland are currently limited to emissions from cultivated organic soils. They are those associated with carbon losses from drained organic soils. Computed at Tier 1 and complemented by use of geo-spatial data, 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.
<b>Supplemental</b>	<p>This domain contains data on GHG emissions, associated emission factors and underlying activity data.</p> <p>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.</p>
<b>Creation Date</b>	2012
<b>Last Update</b>	2012
<b>Data Type</b>	Climate Change - Greenhouse Gases
<b>Category</b>	Environment
<b>Time Period</b>	1990 - 2010
<b>Periodicity</b>	Annual
<b>Geographical Coverage</b>	World
<b>Spatial Unit</b>	Country
<b>Language</b>	Multilingual (EN, FR, ES)

Methodology and Quality Information:	
<b>Methods and processing</b>	<p>GHG emissions data from cropland are currently limited to emissions from cultivated organic soils. They are those associated with carbon losses from drained organic soils. The FAOSTAT data are computed at Tier 1 following IPCC, 2006, Vol. 4, Ch. 5.</p> <p>The emissions are estimated at pixel level, using the formula:</p> $Emission = A * EF$ <p>where:</p> <p><i>Emission</i> = Annual emissions, in units of tonnes C yr<sup>-1</sup>;  <i>A</i> = Activity data, representing the annual area of cultivated organic soils, in hectares (1).  <i>EF</i> = Tier 1, default IPCC emission factors, expressed in units of tonnes C ha<sup>-1</sup> (2).</p> <p>(1) Data are obtained through the stratification of different global datasets:</p> <ul style="list-style-type: none"> <li>- The area covered by organic soils have been defined by extracting the Histosols classes from the Harmonized World Soil Database (FAO <i>et al.</i>, 2012). The data on soils have been produced in a large time span, from 1971 to 2005.</li> <li>- The cultivated area has been identified from the global land cover dataset, GLC2000 (EU-JRC, 2003), using the three “cropland” classes. The mosaic classes have been reduced proportionally to the general share of the cropland per pixel per each class, according to the following values (You <i>et al.</i>, 2008):</li> </ul> <ul style="list-style-type: none"> <li>• Cultivated and managed areas: 100% cropland</li> <li>• Mosaic: cropland/tree cover/Other natural vegetation: 50% cropland</li> <li>• Mosaic: cropland/Shrub and/or grass cover: 10% cropland</li> </ul> <p>(2) The EF values are those specified in IPCC, 2006: Vol. 4, Ch. 5, Tab. 5.6. The EF were assigned at pixel level to the relevant climate zone, as defined in IPCC, 2006: Vol. 4, Ch. 3, Annex 3A.5. The climatic zones map used has been developed by the Joint Research</p>

Centre of the European Commission (EC-JRC, 2010), following the IPCC prescriptions.

The analysis was carried out is GIS, combining the above datasets, and the global emissions dataset was summarized by country. Dimensionless conversion factors used are:

12/44, to convert the emissions from tonnes C to tonnes CO<sub>2</sub> gas;

10<sup>-3</sup>, to convert the emissions from tonnes C to Gg C

The cultivated organic soils domain contains the following data categories available for download: country-level GHG emissions in both Gg C, Gg CO<sub>2</sub> and Gg CO<sub>2</sub>eq; implied emission factors; and activity data. The analysis was performed worldwide. Cultivated organic soils are found in 96 countries and territories listed in FAOSTAT. The data are reported also following standard FAOSTAT regional aggregations, plus Annex I and non-Annex I groups.

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 cultivated organic soils, more detailed information are available in the guidelines (IPCC, 2006: Vol. 4, Ch. 5, Section 5.2.3.5).

#### References

EC-JRC. 2003. Global Land Cover 2000 database.

Available at <http://bioval.jrc.ec.europa.eu/products/glc2000/glc2000.php>

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Available at [www.fao.org/nr/land/soils/harmonized-world-soil-database/en/](http://www.fao.org/nr/land/soils/harmonized-world-soil-database/en/)

IPCC. 1996. Climate Change 1995 - The Science of Climate Change: Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.

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.

Liangzhi You, Stanley Wood, Kate Sebastian, 2008. Comparing and Synthesizing Different Global Agricultural Land Datasets for Crop Allocation Modeling. ISPRS – Proceedings of the 21st Congress, Beijing. [www.isprs.org/proceedings/XXXVII/congress/7\\_pdf/9\\_ThS-17/06.pdf](http://www.isprs.org/proceedings/XXXVII/congress/7_pdf/9_ThS-17/06.pdf)

**Data Collection** Computed

**Method**

**Completeness** 100%

**Links** [www.fao.org/climatechange/micca/ghg/](http://www.fao.org/climatechange/micca/ghg/)  
[www.ipcc-nggip.iges.or.jp/public/](http://www.ipcc-nggip.iges.or.jp/public/)

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