Dataset Information:

Title	**Grassland**
Abstract	Greenhouse gas (GHG) emissions data from grassland are currently limited to emissions from grassland organic soils. They are those associated with carbon losses from drained histosols under grassland . Data is 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 to present.
Supplemental	This sub-domain contains data on GHG emissions, associated emission factors and underlying activity data. The GHG emission estimates refer to the year 2000, corresponding to the reference year of the land cover map used (EC-JRC, 2003). Values for the year 2000 are replicated over the entire time series 1990-present. 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	2013
Last Update	2013
Data Type	Climate Change - Greenhouse Gases
Category	Environment
Time Period	1990-present
Periodicity	Annual
Geographical Coverage	World
Spatial Unit	Country
Language	Multilingual (EN, FR, ES)

Methodology and Quality Information:

Methods and processing

GHG emissions data from grassland are currently limited to emissions from grassland 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. 6.

The emissions are estimated at pixel level, using the formula:

*Emission = A * EF*

where:

Emission = Annual emissions, in units of tonnes C yr^{-1};
A = Activity data, representing the annual area of grassland organic soils, in hectares (1).
EF = Tier 1, default IPCC emission factors, expressed in units of tonnes C ha^{-1} (2).

(1) Data are obtained through the stratification of two different global datasets:

i. The Harmonized World Soil Database (FAO *et al*., 2012), used to estimate the area covered by Histosols classes.

ii. The Global Land Cover dataset, GLC2000 (EC-JRC, 2003), used to estimate the amount of cropland and grassland area in each pixel.

For grassland, two “herbaceous” and two mosaics GLC2000 classes are used, in line with the FAO Land Cover Classification Scheme (LCCS):

CLASS	NAME	GRASSLAND SHARE PER PIXEL
13	Herbaceous Cover, closed-open	100%
14	Sparse herbaceous or sparse shrub cover	50%
17	Mosaic: Cropland/Tree Cover/Other natural vegetation	25%
18	Mosaic: Cropland/Shrub and/or grass cover	45%

iii. The Gridded Livestock of the World for cattle and sheep (Wint and Robinson, 2007), used as an additional mask over grassland histosols as a proxy to estimate drained area. With this mask, only those pixels with non-zero drained grassland histosols area and livestock density >1 head/ha are included.

For the period 1990-present, the activity data reported in this sub-domain are a constant value, representing the year 2000, i.e., the reference year of the GLC2000 database.

(2) The EF values are those specified in IPCC, 2006: Vol. 4, Ch. 6, Tab. 6.3. 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 Centre of the European Commission (EC-JRC, 2010), following the IPCC prescriptions.

The analysis was carried out in 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_2 gas;
10^{-3}, to convert the emissions from tonnes C to Gg C

The grassland sub-domain contains the following data categories available for download: country-level GHG emissions in both Gg C, Gg CO_2 and Gg CO_2eq; implied emission factors; and activity data. The analysis was performed worldwide for all 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 grassland, more detailed information are available in the guidelines (IPCC, 2006: Vol. 4, Ch. 6, Section 6.2.3.5).

References

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Data Collection Method	Computed
Completeness	100%
Links	www.fao.org/climatechange/micca/ghg/ www.ipcc-nggip.iges.or.jp/public/

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