Dataset Information:

Title	**Net Forest Conversion**
Abstract	Annual CO_2 emissions from net forest conversion consist of carbon stock losses in the living biomass pool (aboveground and belowground biomass) associated with conversion of forest land to other uses occurred in the reported year. They are computed at Tier 1, using the stock difference method, following the 2006 IPCC Guidelines for National GHG Inventories (IPCC, 2006) and using area and carbon stocks data compiled by countries in the FAO Global Forest Resource Assessment of 2010. These data are available by country, with global coverage, and are relative to the period 1990 onwards, with annual updates.
Supplemental	This domain contains data on CO_2 emissions, associated implied emission factors and underlying activity data. The FAOSTAT Emissions data are estimated by FAO and do not coincide with GHG data reported by Parties to the UNFCCC. The database is intended primarily as a resource to help member countries assess and report their emissions and removals, as well as a useful international tool for quality assurance. 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 onwards
Periodicity	Annual
Geographical Coverage	World
Spatial Unit	Country
Language	Multilingual (EN, FR, ES)

Methodology and Quality Information:

Methods and processing	Annual CO_2 emissions from net forest conversion consist of carbon stock losses in the living biomass pool (aboveground and belowground) associated with conversion of forest land to other uses occurred in the reported year. The FAOSTAT data are computed at Tier 1, using the stock difference method, following IPCC 2006 Vol. 4, Ch. 2 and 4. The emissions are estimated at country level, using the formula: *Emission = A * CSCF * -44/12 / 1,000* where: *Emission* = annual CO_2 emissions, in Gg CO_2 yr^{-1}; *A* = Activity data, representing the annual net forest area converted to other land uses, expressed in units of ha yr^{-1} (1); *CSCF* = tons of carbon per hectare in the living biomass pool (aboveground + belowground) of forest land at the beginning of the year to which is applied (which corresponds to the value reported in the timeseries for the year precedent the year to which is applied), expressed in units of t C (2); (1) Data on area of annual net forest conversion have been calculated from annual areas of forest land taken directly from the Global Forest Resource Assessment of FAO (http://www.fao.org/forestry/fra/fra2010/en/). Data for the years 1990, 2000, 2005 and 2010, as provided by GFRA-FAO, for categories *Primary forest*, *Other naturally regenerated forest* and *Planted forest* have been linearly interpolated to compile, for each country, complete timeseries of areas for each category for the period 1990-2010. Timeseries on forest area of GFRA categories: *Primary forest* and *Other naturally regenerated forest*, have been aggregated in a category of Natural Forest prior to calculate area losses between consecutive years; for *Planted forest,* the area losses have

	been calculated directly from the timeseries. For each year, the Activity data is the annual sum of area losses occurring in *Natural forest* plus those occurring in *Planted forest*. (2) The Carbon Stock Change Factor, which corresponds to the per hectare average carbon stock in the living biomass (aboveground + belowground) pools in the country has been taken directly from the Global Forest Resource Assessment of FAO (http://www.fao.org/forestry/fra/fra2010/en/). Data for the year 1990, 2000, 2005 and 2010, as provided by GFRA-FAO, have been linearly interpolated to compile, for each country, a complete timeseries of per hectare average carbon stock, in the living biomass pools, for the period 1990-2010. In countries for which carbon stock data were not available, the regional carbon stock applied has been taken from table T2.21 of GFRA 2010. Dimensionless conversion factors used are: -44/12, to convert from carbon mass to CO_2 emissions; and 10^{-3}, to convert tons in Gg The net forest conversion domain contains the following data: country-level CO_2 emissions in Gg CO_2, carbon stock losses in kt C, implied emission factors (i.e. the CSCFs) and activity data. Data are available for all 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 onwards, with annual updates. FAO GFRA 2005 estimates uncertainties of growing stock, from which living biomass carbon stocks are derived, at ±8% for industrialized countries and ±30% for non-industrialized countries, and uncertainties for the basic wood density at 10 to 40%. The uncertainty in area data differs greatly among countries; uncertainties of area data collected with forest inventories are usually very small (less than 1%) while uncertainties of the sum of data compiled with different methodologies by different experts could be very large (more than 10%). The use of the per hectare carbon stock, averaged across all forest categories (i.e. *Primary forest*, *Other naturally regenerated forest* and *Planted forest*) may cause a systematic underestimation of emissions since deforestation is likely occurring with higher frequency in primary forests. Moreover, when net deforestation is estimated instead of gross deforestation, the implicit assumption in carbon stock estimates is that some deforested areas are replaced by new forested areas with a carbon balance equivalent, within the cultural cycle. Such an assumption is proven to be invalid in case of primary forest conversion, and is not fully reliable in cases of natural forest conversions. The estimates provided in this database could therefore be judged as an underestimation of real emissions associated with conversion of forest land to other uses; further, users should remember that estimates provided here are limited to living biomass pools only, while deforestation always determines carbon stock losses additionally in the DOM (dead organic matter) and SOM (soil organic matter) pools. *References* FAO, 2010. Global Forest Resources Assessment 2010, FAO Forestry Paper 163, Rome. Available at http://www.fao.org/forestry/fra/fra2010/en/. 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. Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html FAO, 2005. Global Forest Resources Assessment 2005, FAO Forestry Paper 147, Rome. Available at http://www.fao.org/forestry/fra/fra2005/en/
Data Collection Method	Computed

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

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