

GREENHOUSE GAS EMISSIONS

from Agriculture, Forestry and Other Land Use

Food Security and Agriculture face major challenges under climate change, in terms of expected negative impacts on productivity as well as implementation of sectoral actions to limit global warming. Agriculture's greenhouse gas emissions continue to rise – although not as fast as emissions from other human activities. Better national data on emissions from farming, livestock-raising, fisheries and forestry can help countries identify opportunities for reducing emissions while addressing their food security, resilience and rural development goals – and gain access to global funding to pursue them.

The new FAOSTAT emissions database represents the most comprehensive knowledge base on agricultural greenhouse gas emissions ever assembled. Updated annually, it provides a global point of reference on emissions and mitigation opportunities in the sector. Emissions are measured in CO₂ equivalent (CO₂ eq) – a metric used to compare different greenhouse gases.



Global emissions by sources from agriculture, forestry and other land uses were nearly

**10 billion tonnes
CO₂ eq**

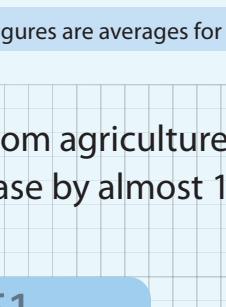
Global removals by sinks from agriculture, forestry and other land uses were nearly

**2 billion tonnes
CO₂ eq**

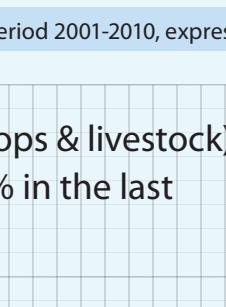
Sources and sinks in the agriculture, forestry and other land use sectors include:



crops & livestock
(+5.0)



net forest conversion
(+3.7)



forest
(-1.9)



biomass fires
(+0.3)



degraded peatlands
(+0.8)

Figures are averages for the period 2001-2010, expressed in billion tonnes CO₂ eq

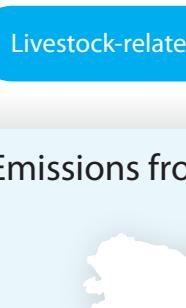
Global emissions from agriculture (crops & livestock) continued to increase by almost 100% in the last 50 years

1961
**2.7 billion tonnes
CO₂ eq**

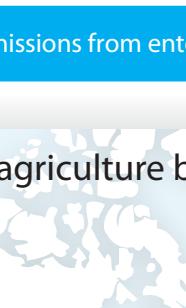
2012

**5.4
billion tonnes
CO₂ eq**

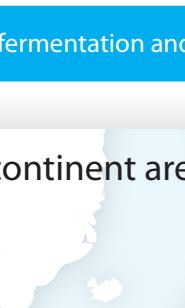
The largest emitters in agriculture are:



Enteric
fermentation



Manure left
on pasture



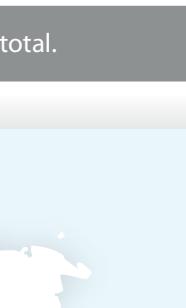
Synthetic
fertilizers



Paddy rice



Manure
management

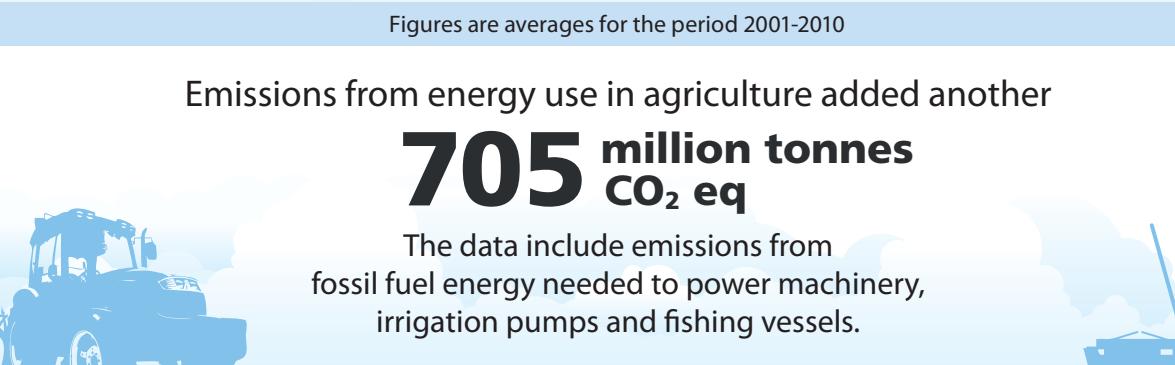


Burning of
savannahs

Figures are averages for the period 2001-2010

Livestock-related emissions from enteric fermentation and manure contributed nearly two-thirds of the total.

Emissions from agriculture by continent are:



Figures are averages for the period 2001-2010

Emissions from energy use in agriculture added another

**705 million tonnes
CO₂ eq**

The data include emissions from fossil fuel energy needed to power machinery, irrigation pumps and fishing vessels.

Figures are averages for the period 2001-2010

The FAOSTAT Emissions database was first launched in Dec. 2012 as a service to all FAO member countries. It provides the basis for GHG emissions data analysis for all agriculture, forestry and land use change related activities in the upcoming Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). FAOSTAT Emissions data are also published in the FAO Statistical Yearbook suite of products in 2013 and 2014. The Emissions database was implemented by the "Monitoring and Assessment of GHG Emissions in Agriculture" (MAGHG) Project of the MICCA Program of the Climate, Energy and Tenure Division and Statistics Division of FAO, with generous funding by the Governments of Germany and Norway.



Food and Agriculture
Organization of the
United Nations

http://faostat3.fao.org/faostat-gateway/go/to/download/G1/*/
<http://www.fao.org/climatechange/micca/ghg/en/>

©FAO - March 2014

