Agriculture, Forestry and Other Land Use Emissions by Sources and Removals by Sinks



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1990-2011 Analysis

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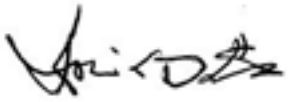
Foreword

The contribution of agriculture, forestry and fisheries to global emissions of greenhouse gases is well recognized. So are the critical gaps in information, knowledge and capacity development which need to be addressed with urgency. Meeting these challenges can allow member countries to reduce their emissions through changes to management practices that can simultaneously improve productivity, reduce hunger and increase the resilience of production systems in the coming decades.

The new work of FAO on greenhouse gas emissions statistics represents a critical step on this important path. The new FAOSTAT Emissions database, developed jointly by the Climate, Energy and Tenure Division and the Statistics Division, is aimed at improving and disseminating agricultural statistical data for better quantification of greenhouse gas emissions and for the identification of the actions needed to reduce them. This report provides the first comprehensive analysis of the challenges and opportunities that exist to this end in the relevant production sectors, at global and regional level, covering the period 1990-2011.

The new FAO database offers broad support to FAO's member countries and provides benefits to users worldwide which include the increased ability to conduct analyses of greenhouse gas emissions from agriculture, forestry and fisheries at national, regional and global level, as well as the provision of improved and continuously updated statistical knowledge in support of agricultural planning. This is underpinned by the recognition that enhanced national statistics are a pre-requisite for identifying climate-smart solutions which bring improved productivity, resilience and mitigation together in one coherent package.

Xiang Jun Yao



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Abstract

This report discusses new knowledge on anthropogenic greenhouse gas (GHG) emissions from agriculture, forestry and other land use (AFOLU) activities made available through the new FAOSTAT Emission database. The database is available globally, with country detail, for all agriculture, forestry and land sub-categories available in FAOSTAT and in the Forest Resources Assessment (FRA). GHG emissions are computed from official national activity data and geo-spatial analyses, applying international standard methodologies of the Intergovernmental Panel on Climate Change (IPCC) to ensure consistency with GHG Inventory processes established under the climate convention. The analysis shows increases in emissions of agriculture (from 4.6 to 5.0 Gt CO_2 eq yr^{-1} in 1990s and 2000s; 5.3 Gt CO_2 eq yr^{-1} in 2011), decreases in deforestation rates (from 4.6 to 3.8 Gt CO_2 eq yr^{-1} in 1990s and 2000s; 3.7 Gt CO_2 eq yr^{-1} in 2010), and decreases in forest sinks, albeit with a reversal since the mid-2000s (from -2.9 to -1.9 Gt CO_2 eq yr^{-1} in 1990s and 2000s values; -2.1 Gt CO_2 eq yr^{-1} in 2010). At the same time, the data show that GHG intensity of products (i.e., GHG emissions per unit commodity produced) decreased during 1990-2010, but that if no further mitigation measures and technical efficiency improvements are implemented, future emissions may further increase by up to 30% by 2050. Better information on AFOLU emissions is critical in many developing countries, given the potential to identify and fund actions that can usefully bridge national food security, resilience, mitigation and development goals into one coherent package.

Key words: Greenhouse Gas, Statistics, Mitigation, Agriculture, Forestry, Land Use

JEL codes:

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