

The Challenge of Estimating the Uncertainty for GHG Emission Estimates at a Continental Scale on the Example of Agriculture

Adrian Leip

*European Commission – Joint Research Centre,
Institute for Environment and Sustainability*

Abstract

The estimation of quality level and uncertainty of a greenhouse gas inventory that is build from 15 individual and independent greenhouse gas inventories, as this is the case for the inventory of the European Communities, presents a particular challenge. It is possible only if homogeneous information is available for all Member States, if the approach to estimate the quality level is put on a more quantitative basis, and if a proper evaluation of correlation between Member States is performed. We present a methodology that estimates the quality level and the uncertainty for the categories in the agriculture sector. The method differs from the approach suggested in the IPCC guidelines as quantitative information from the lowest available level – if possible the individual parameters used in the inventory calculations – is used to come up with an – also quantitative – estimate for the quality level and finally the uncertainty estimate. Not surprisingly, N₂O emissions from agricultural soils are found to be dominating the uncertainty of not only the agricultural sector, but also the overall GHG inventory for many countries.

Key words:

uncertainty calculation – agriculture – agricultural soils – European Communities