The Global Methane Budget 2000 - 2012

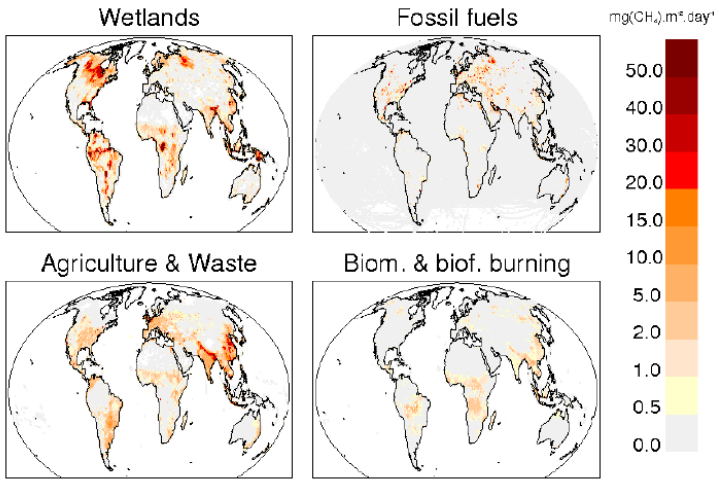

Figure 1. Methane emissions from four source categories: natural wetlands, biomass and biofuel burning, Agriculture and Waste and Fossil fuels for 2003-2012. The wetland emission map represents the mean daily emission average over the eleven biogeochemical models used.

Saunois, M., …, W.J. Riley, …, X. Xiyan, *et al.* Global Methane Budget: 2000-2012. *Earth System Science Data* **8**, 697-751, doi:10.5194/essd-8-697-2016 (2016).

Scientific Achievement

Atmospheric CH_4 is now rising faster than at any time in the past 20 years. Our analysis suggests these changes were from increased biogenic emissions mostly from agriculture, rather than increases from fossil fuels or wetlands.

Significance and Impact

CH_4 is a potent greenhouse gas 28 times more powerful than CO_2, and its concentration in the atmosphere has increased by 150% since 1750. Global emissions are estimated at 559 $TgCH_4$ y^{-1} [540-570] for 2003-2012 as inferred by an ensemble of 'top-down' approaches.

Research Details

- Anthropogenic emissions represent about 60% of total methane emissions
- Of the anthropogenic emissions, agricultural activities and waste management represent about 60%.
- Fossil fuel production and use contributed about one third of anthropogenic methane emissions