



Greenhouse Gas Emissions in Uganda

Uganda Numbers at a Glance (2012)

49 MtCO₂e*

Total GHG emissions (0.10% of world total)
World: 47,599 MtCO₂e

36,345,860

Population
World: 7,043,181,414

1.36

tCO₂e per capita
World: 6.76 tCO₂e

US\$15,201 Million
GDP**

World: US\$55,261 Billion

3,251

tCO₂e/million US\$ GDP
World: 861 tCO₂e/million US\$ GDP

+16 MtCO₂e (+50%)

Change in annual GHG emissions (1990–2012)

World: +13,661 MtCO₂e (+40%)

Source: WRI CAIT 2.0, 2015
Emissions including Land-Use Change and Forestry

*Million metric tons of carbon dioxide equivalent

**Gross Domestic Product (GDP) in constant 2005 US\$

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Greenhouse Gas (GHG) Emissions by Sector

Agriculture was the leading source of GHG emissions in 2012, with land use change and forestry (LUCF) as the second most significant source.¹ Energy sector emissions from WRI CAIT and the International Energy Agency (IEA) are not available, but are discussed below.

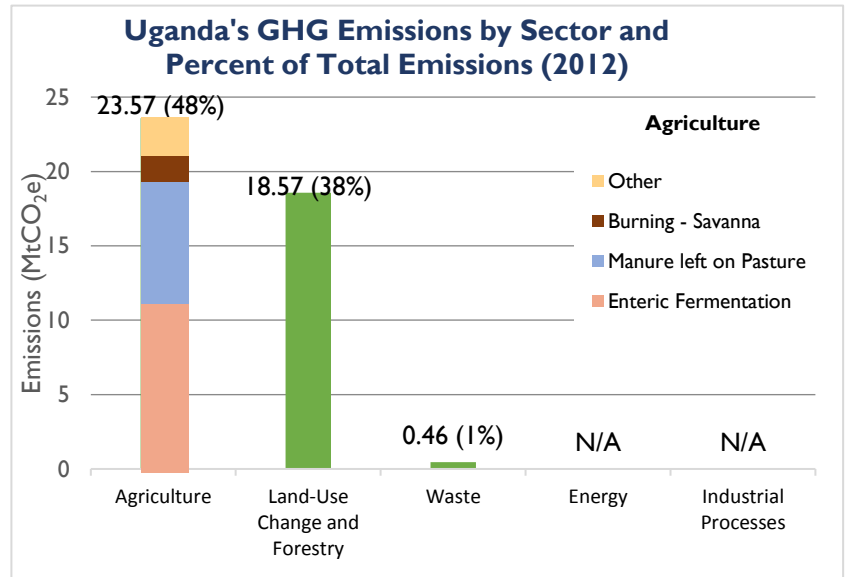
Change in GHG Emissions in Uganda (1990-2012)

Uganda's GHG emissions grew 50% from 1990-2012.² The average annual change was 2%, with sector-specific annual change as follows: agriculture (4%), LUCF (0%), industrial processes (23%), and waste (4%).

In its [Second National Communication \(SNC\)](#) to the UNFCCC, which includes a national GHG inventory for the year 2000, Uganda describes the business-as-usual (BAU) scenarios of each sector, projected future emissions for 2035, and key emitting activities.³

Agriculture: According to the SNC, activities that drive agriculture sector emissions are livestock production, inefficient animal waste management systems under pasture range and paddock, and the cultivation of organic soils. Paddy rice production and use of nitrogen fertilizers are also included in the BAU. Activities that would reduce agriculture emissions are intensive livestock management systems using improved breed quality and improved feed, fodder and pasture quality that is more digestible; adoption of manure management practices including biogas production and utilization; adoption of minimum tillage practices on cultivated land (including organic soils); and increased use of fertilizer accompanied by precision planting techniques to enhance efficiency.

LUCF: The LUCF sector is expected to remain a net emitter through the 2030s, although the SNC notes that with interventions, the sector could become a major sink as early as 2025. Its 2010 analysis of land use trends showed forested land to be decreasing while crop land and bush increasing. Forest degradation was highest outside of protected areas and in areas where agriculture expanded. Fires were also a major source of degradation of land cover, with fires commonly seen in central and northern Uganda. Direct drivers of deforestation and forest degradation are subsistence agriculture and biomass extraction for timber, charcoal, and



Sources: WRI CAIT 2.0, 2015; FAOSTAT, 2015

Note: Percentages do not add up to 100% due to limited data availability

¹ World Resources Institute Climate Analysis Indicators Tool (WRI CAIT) 2.0, 2015.

² WRI CAIT, 2015.

³ Uganda Ministry of Water and Environment, 2014. Uganda Second National Communication (SNC) to the UNFCCC.

commercial fuel wood. More recently, commercial farms, infrastructure, urban development, and mining are increasingly reducing forest cover in some areas.

Energy: Approximately 93% of Uganda’s energy needs are met by biomass, which is used by households and small-scale industries.⁴ With 12% of the population connected to the power grid, electricity consumption accounts for only 1% of energy use, and the remaining 6% of energy needs are met by oil. The SNC in 2010 projected that transportation would be the largest driver of growth in energy sector emissions through 2035, followed by residential, then manufacturing and construction.

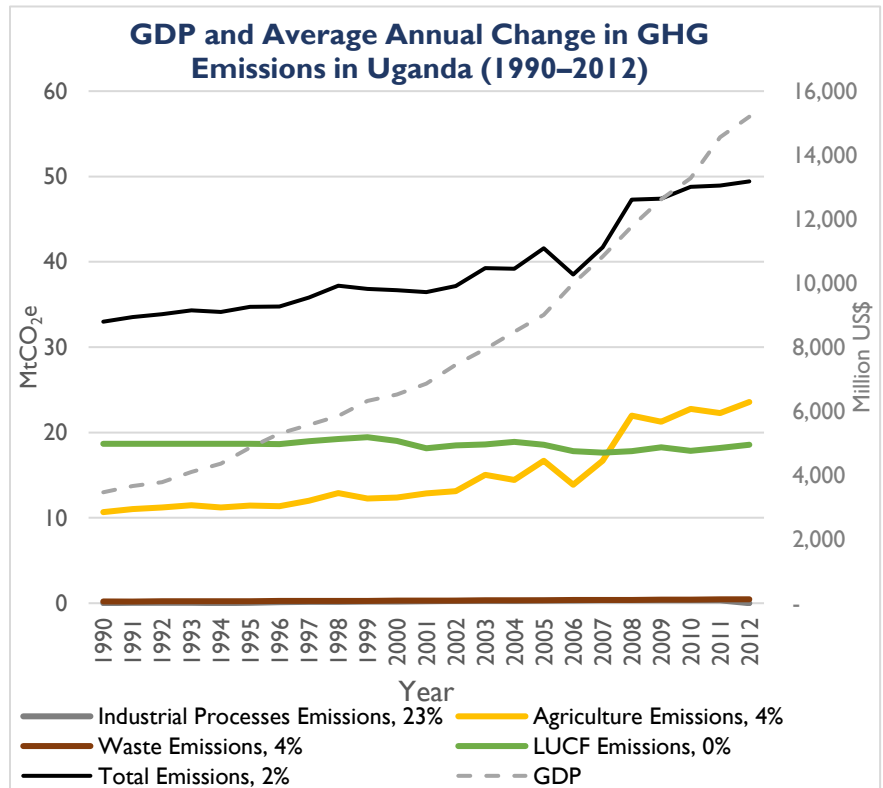
Carbon Intensity: GHG Emissions Relative to Gross Domestic Product (GDP)

Uganda’s GDP grew by US\$11.7 billion from 1990-2012.⁵ GDP during this period increased at a more rapid rate than total GHG emissions, signaling that Uganda’s carbon intensity in 2012 had decreased relative to 1990.

The SNC identified petroleum and gas as playing a major role in economic development, which is projected to increase emissions after 2020. Commercial quantities of petroleum reserves have been discovered and the SNC notes that Uganda will prioritize building a refinery, instead of exporting crude oil, to save the country from importing refined petroleum products. Increased domestic consumption would likely affect future GHG intensity.

Climate Change Mitigation Targets and Plans

Uganda proposes in its [Intended Nationally Determined Contribution \(INDC\)](#) to undertake a suite of policies and measures that may result in national emissions that are 22% below projected 2030 BAU emissions.⁶ Uganda notes that the BAU projection is presented for illustration purposes only. The country pledges to complement mitigation actions it will undertake to develop an enabling infrastructure and enabling environment for electric power development, forestry, and wetland management. The additional actions are contingent upon receiving international finance, technology, and capacity building support for the following actions:



Source: WRI CAIT 2.0, 2015

Sector	Measure
Energy (demand)	<ul style="list-style-type: none"> Energy efficiency in hospitals National Appropriate Mitigation Action (NAMA) for Integrated Sustainable Energy Solutions for Schools Promotion and wider uptake of energy efficiency cook stoves or induction cookers Promotion and wider uptake of solar energy systems Development and enforcement of building codes for energy efficient construction and renovation
Energy (transportation)	<ul style="list-style-type: none"> Development and implementation of a long-term transport policy accounting for climate change mitigation Fuel Efficiency Initiative NAMA to promote cleaner fuels and more fuel efficient vehicle technology
Agriculture	<ul style="list-style-type: none"> Climate smart agriculture techniques for cropping Livestock breeding research and manure management practices

⁴ Grantham Research Institute on Climate Change and the Environment, 2015. The 2015 Global Climate Legislation Study – Uganda.

⁵ WRI CAIT, 2015.

⁶ Uganda Ministry of Water and Environment, 2015. Uganda’s Intended Nationally Determined Contribution (INDC).