



Greenhouse Gas Emissions in Zambia

Zambia Numbers at a Glance (2011)

120 MtCO₂e*

Total GHG emissions
(0.26% of world total)

World: 46,906 MtCO₂e

13,633,796

Population

World: 6,964,618,177

8.82

tCO₂e per capita

World: 6.73 tCO₂e

US\$13,449 Million

GDP**

World: US\$54,034 Billion

8,943

tCO₂e/million US\$ GDP

World: 868 tCO₂e/million US\$ GDP

+4 MtCO₂e (+3%)

Change in GHG emissions
(1990–2011)

World: +12,969 MtCO₂e
(+38%)

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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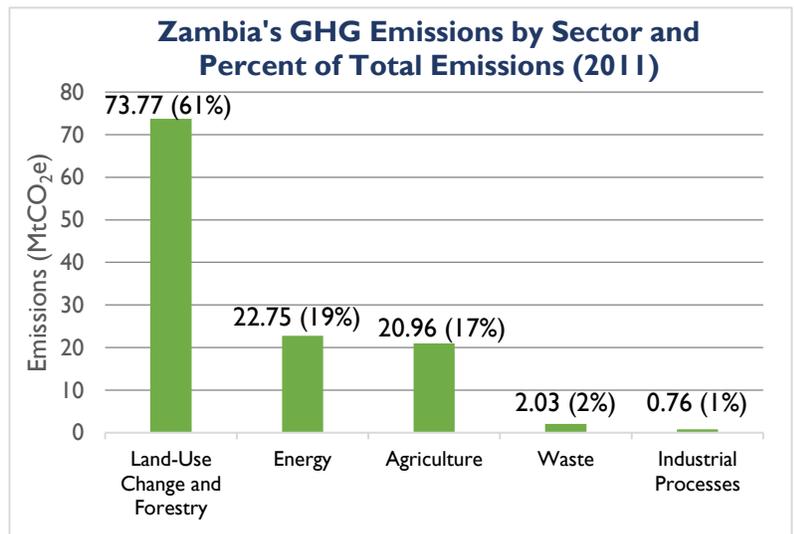
Greenhouse Gas (GHG) Emissions by Sector

Zambia's GHG profile is dominated by emissions from the land-use change and forestry (LUCF) sector, which is responsible for well over half of the country's emissions. Emissions from energy and agricultural activities each represent less than one-fifth of national emissions, with minimal contributions from waste and industrial processes (IP).

Change in GHG Emissions in Zambia (1990-2011)

Zambia's emissions increased 3% from 1990 to 2011.¹ As illustrated by the graph on the next page, the average annual change in total emissions was flat (0%), with sector-specific average annual change as follows: LUCF (0%), energy (1%), agriculture (1%), waste (2%), and IP (7%). Bunker fuels, which are not counted toward national totals but are reported separately, decreased at an average annual rate of -1%.

LUCF: As of 2011, 66% of Zambia's land was forest area.² The annual deforestation rate is estimated to be around 1.5%, with 250,000 to 300,000 hectares deforested per year. Zambia is ranked among the countries with the highest rate of deforestation and trend analysis from 2000-2030 predicts an increase in the deforestation rate, with the Copperbelt Province being the most affected.³ According to REDD+, clearing land for agriculture may account for around 90% of forest cover loss in Zambia, specifically for small-scale farming systems and shifting cultivation. Urbanization and industrialization also drive deforestation through the clearing of land to make way for roads and other infrastructure for mining and other activities. Infrastructure development is often followed by settlements, which drives higher demand for timber for construction. Deforestation is also caused by charcoal production for activities such as curing tobacco or brick manufacturing and the setting of fires to facilitate vegetation control; for the provision of potash; to improve visibility during hunting; and other reasons. According to the [Second National Communication \(SNC\)](#) to the UNFCCC, waste from timber harvesting and from saw mills that is left to decay or burned is also a source of GHG emissions.



Source: WRI CAIT 2.0, 2015

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

² Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT), viewed November 8, 2015: <http://faostat3.fao.org/browse/area/251/E>.

³ UN-REDD, 2012. UN-REDD Zambia National Programme Policy Brief: Drivers of Deforestation and Potential for REDD+ Interventions in Zambia. See: http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=8022&Itemid=53.

Energy: The share of total primary energy supply in 2013 consisted of biofuels/waste (76%), hydro (12%), oil (10%), and coal (2%).⁴ The main consuming sector is residential, followed by industry and transportation. The SNC notes that households accounted for 73% of total final energy consumption in 2000, with the largest share attributed to firewood. The mining sector accounted for 10% of total final consumption, followed by industry at 8%, and transport at 5%. Power generation is almost entirely hydroelectric, with a very small contribution from oil.⁵

Agriculture: From 1990-2012, the main sources of agriculture sector emissions were burning of the savanna (67%) followed by cultivation of organic soils (12%), and enteric fermentation (10%), with four other sub-sectors comprising the remainder of agriculture emissions.⁶

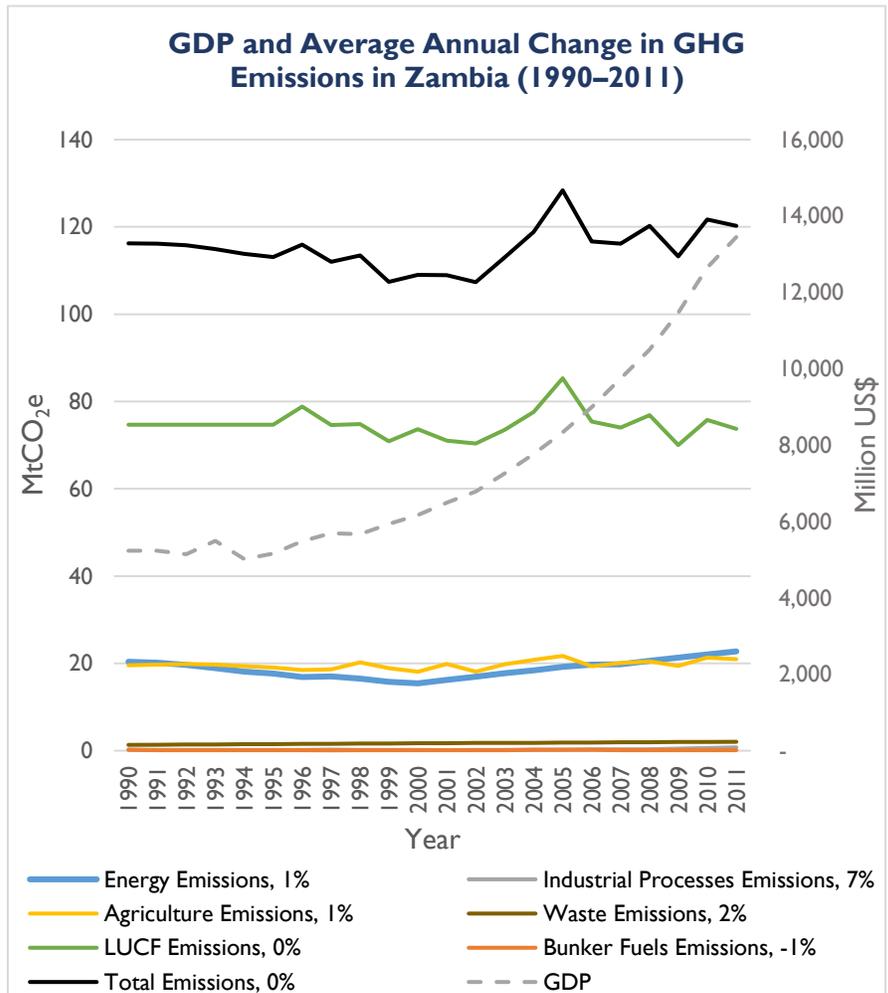
Carbon Intensity: GHG Emissions Relative to Gross Domestic Product (GDP)

GDP grew from US\$5.2 billion to US\$13.4 billion from 1990-2011 whereas total emissions increased only 3% according to WRI CAIT. This suggests that the economy became less carbon intensive during this time frame.

Climate Change Mitigation Targets and Plans

In its Intended [Nationally Determined Contribution \(INDC\)](#), Zambia commits to reducing carbon dioxide-equivalent emissions by 25% by 2030 compared to 2010 base year emission levels, which it will achieve through domestic efforts with limited international support. Zambia commits to achieving a 47% reduction with substantial international support.

Zambia also has a [National Climate Change Response Strategy \(2010\)](#) whose vision is to achieve a prosperous, climate change resilient economy. The mission of the Strategy is to ensure that the most vulnerable sectors of the economy are climate proofed, and that sustainable development is achieved through the promotion of low carbon development pathways. The vision and mission are aligned with the country's development priorities, including the National Long Term Vision 2030 and the Sixth National Development Plan.



Source: WRI CAIT 2.0, 2015

⁴ International Energy Agency (IEA), 2015. Statistics for Zambia: <http://www.iea.org/countries/non-membercountries/zambia/>. See Energy Balances.

⁵ IEA, 2015. See Electricity / Heat.

⁶ Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT), viewed November 7, 2015: <http://faostat3.fao.org/browse/area/251/E>.