



# Greenhouse Gas Emissions in Haiti

## Haiti Numbers at a Glance (2011)

**8 MtCO<sub>2</sub>e\***

Total GHG emissions  
(0.02% of world total)  
World: 46,906 MtCO<sub>2</sub>e

**10,032,864**

Population  
World: 6,964,618,177

**0.81**

tCO<sub>2</sub>e per capita  
World: 6.73 tCO<sub>2</sub>e

**US\$4,551 Million**  
GDP\*\*

World: US\$54,034 Billion

**1,778**

tCO<sub>2</sub>e/million US\$  
GDP

World: 868 tCO<sub>2</sub>e/million  
US\$ GDP

**+3 MtCO<sub>2</sub>e (+62%)**

Change in GHG  
emissions (1990–2011)  
World: +12,969 MtCO<sub>2</sub>e  
(+38%)

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

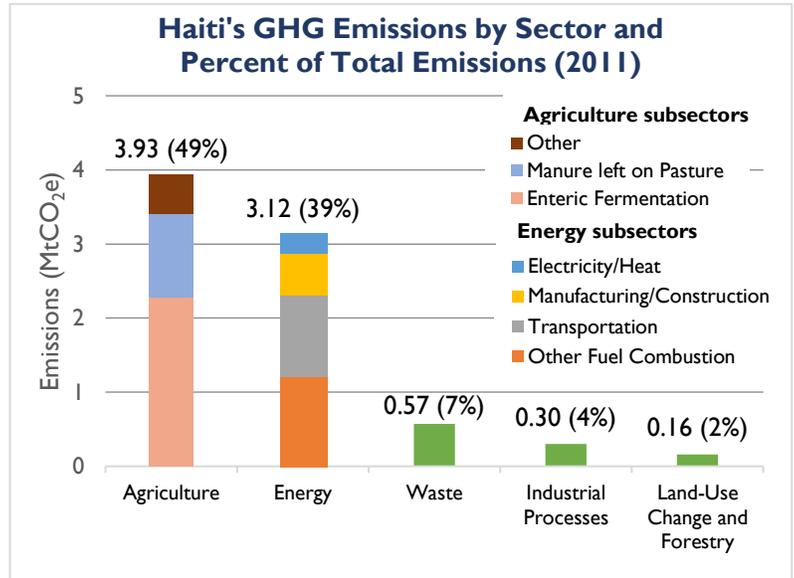
\*Million metric tons of carbon  
dioxide equivalent

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

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## Greenhouse Gas (GHG) Emissions by Sector

According to the World Resources Institute Climate Analysis Indicators Tool (WRI CAIT), agriculture is the leading source of GHG emissions in Haiti, contributing 49% of total emissions. Within this sector, 58% are due to enteric fermentation and 29% due to manure left on pasture. Five “other” agriculture subsectors are responsible for the remainder, including manure management and rice cultivation (4% each).<sup>1</sup> Energy sector GHG emissions are also important and consist of emissions from other fuel combustion (38%),<sup>2</sup> transportation (35%), manufacturing and construction (18%), and electricity and heat production (9%). The remainder is from waste, industrial processes (IP), and land-use change and forestry (LUCF).



Sources: WRI CAIT 2.0, 2015; FAOSTAT, 2015

Note: Percentages do not add up to 100% due to rounding

## Change in GHG Emissions in Haiti (1990-2011)

Haiti's emissions grew 62% from 1990-2011. As illustrated on the graph on the next page, the average annual change in total emissions during this time was 3%, with sector-specific average annual change as follows: agriculture (2%), energy (6%), waste (2%), IP (26%), and LUCF (-2%).

**Agriculture:** According to WRI CAIT, agriculture emissions increased by 1.2 MtCO<sub>2</sub>e (39%) from 1990-2011.<sup>3</sup> Around 57% of Haiti's land was used for agriculture in 2005, with 29% for pasture and 28% for cultivation of crops.<sup>4</sup> In Haiti, farming is practiced on a small scale with very little industrial-type farming. Farmers typically keep ruminants on plots of farmland that are fallow or which lie idle at the end of the harvest. Pigs are kept in pens and fed mainly kitchen waste and other inexpensive and readily available feed. Under these conditions, the [Second National Communication \(SNC\)](#) to the UNFCCC notes the potential in the medium-term to reduce methane from livestock by improving pasture quality through the addition of legumes whose digestion produces less methane, and to promote the productivity of farming systems.<sup>5</sup>

Rice cultivation is another important source of methane due to the decomposition of organic matter in flooded soils. Irrigation causes prolonged water stagnation due to drainage difficulty. The

<sup>1</sup> Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT), viewed November 20, 2015: <http://faostat3.fao.org/browse/area/93/E>.

<sup>2</sup> “Other fuel combustion” includes biomass combustion and categories of stationary and mobile combustion that are not included in the production of electricity and heat, manufacturing and construction, and other large categories of emissions.

<sup>3</sup> WRI CAIT 2.0, 2015.

<sup>4</sup> World Bank, December 2009. Haiti Country Note on Climate Change Aspects in Agriculture.

<sup>5</sup> Haiti. Haiti's Second National Communication (SNC) to the UNFCCC, 2013.

largely manual process of preparing the soil includes leaving weeds in place, which draws water to the plot. The decomposition of organic matter under these conditions can cause significant methane emissions. After harvest, 70%-80% of rice waste is burned to prepare the land for the next harvest, and some rice straw and bran are used for animal feed. Employing altered water regimes and new hybrid rice varieties that require less water and energy without reducing yields, using improved drainage methods to ameliorate anaerobic conditions, using mineral instead of organic fertilizers and direct seeding to minimize ground disturbance would mitigate emissions from agriculture.<sup>6</sup>

**Energy:** Data from WRI CAIT show that energy emissions increased 54% from 1990-2011.<sup>7</sup> The residential sector is the top energy consumer in Haiti, followed far behind by industry and transportation, and others. By fuel, about 74% of energy demand in 2009 was met by biomass, 21% by petroleum products, 4% by electricity, and 1% by solar energy.<sup>8</sup>

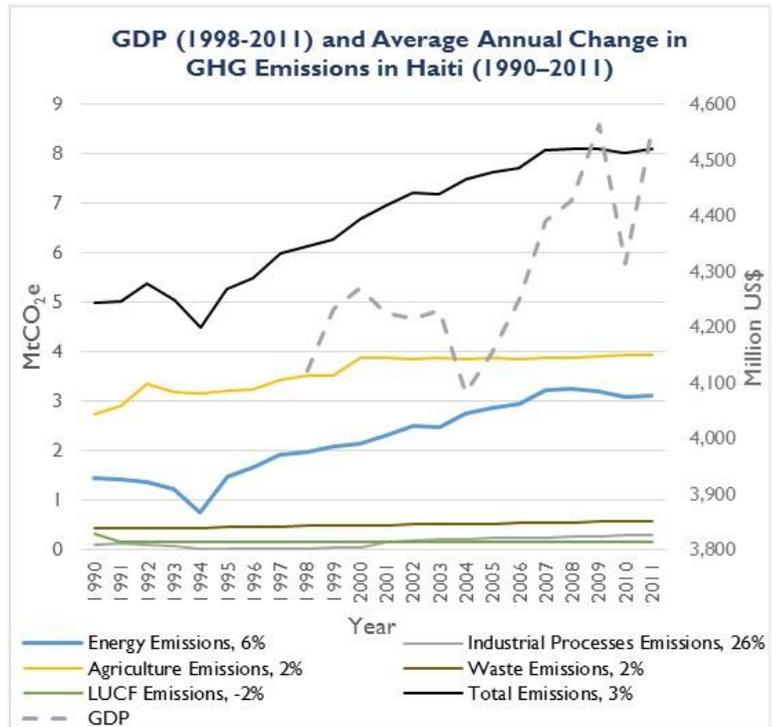
As of 2013, International Energy Agency data showed that residential demand remained by far the main consumer. Transportation consumed more energy than industry, but still far less than the residential sector. Electricity generation was 87% from oil, with the remainder from hydro.<sup>9</sup> The SNC reports that approximately 154MW of hydroelectric capacity have yet to be developed in Haiti, of which 85% consists of large hydro, and the remainder mini and micro hydro. There is potential for wind energy, which is concentrated in the northwest of the country.<sup>10</sup>

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

Haiti's [Intended Nationally Determined Contribution \(INDC\)](#) notes that the country's GHG emissions grew 20%, slightly over 3% per year, from 1995 to 2000, during which GDP grew at 4%. Over a longer time frame, from 1990 to 2011, Haiti's GDP increased erratically and shows mostly an upward trend despite some setbacks in 2004 and 2010. With the carbon intensity of Haiti's economy slightly more than double the world average in 2011, there remains substantial potential to reduce GHG emissions as the economy grows.<sup>11</sup>

### Intended Nationally Determined Contribution

In its [INDC](#), Haiti commits to unconditionally reduce its GHG emissions by 5% (10 MtCO<sub>2</sub>e) by 2030, relative to the 2030 business as usual (BAU) reference scenario. It also commits to a conditional reduction of 26% (35.24 MtCO<sub>2</sub>e) by 2030, relative to the 2030 BAU scenario. The BAU scenario takes into consideration the policies and strategies as reflected in the Strategic Development Plan of Haiti – Emerging Haiti 2030. The [INDC](#) was developed as part of a wide consultation process that takes into account the [Haiti Sustainable Energy Roadmap](#), Policy of the Ministry of Agriculture, Natural Resources and Rural Development for watershed management, Strategy of the National Agency of Protected Areas, the Scaling-up Renewable Energy Program, and others.<sup>12</sup>



Source: WRI CAIT 2.0, 2015  
Note: GDP prior to 1998 is not available from WRI CAIT or World Bank

<sup>6</sup> Haiti. Haiti's SNC, 2013.

<sup>7</sup> WRI CAIT 2.0, 2015.

<sup>8</sup> Haiti. Haiti's SNC, 2013.

<sup>9</sup> International Energy Agency, 2015. Energy Balances, viewed November 19, 2015: <http://www.iea.org/countries/non-membercountries/haiti/>

<sup>10</sup> Haiti. Haiti's SNC, 2013.

<sup>11</sup> WRI CAIT 2.0, 2015.

<sup>12</sup> For the original French titles of these policies, see Haiti Ministry of Environment, 2015. Intended Nationally Determined Contribution.