



# Greenhouse Gas Emissions in Nicaragua

## Nicaragua Numbers at a Glance (2011)

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

Total GHG emissions  
(0.09% of world total)  
World: 46,906 MtCO<sub>2</sub>e

**5,905,146**

Population\*  
World: 6,964,618,177

**7.28**

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

**US\$7,751 Million**

GDP\*\*  
World: US\$54,034 Billion

**5,700**

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

**+4.74 MtCO<sub>2</sub>e (+11%)**

Change in GHG emissions  
(1990–2011)

World: +12,969 MtCO<sub>2</sub>e

Sources: WRI CAIT 2.0, 2015

Emissions including Land-Use Change and Forestry

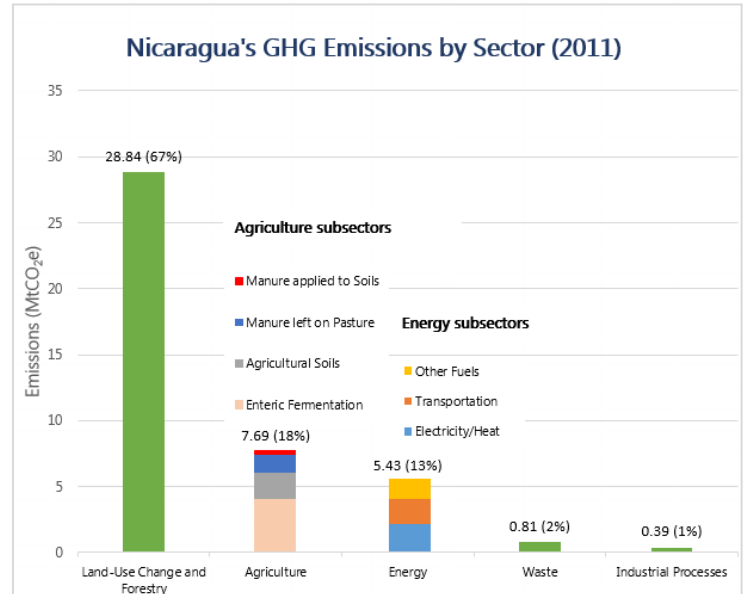
\*Million metric tons of carbon dioxide equivalent

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

This document is based on information available at the date of publication, and does not reflect official views of the U.S. government. Sources may be incomplete or contradictory. Judgment and knowledge of the national context should be used to interpret and supplement this information. USAID assumes no liability for the contents or use of the information in this document.

## Greenhouse Gas (GHG) Emissions by Sector

Nicaragua's GHG profile is dominated by emissions from the Land-Use Change and Forestry (LUCF) sector, followed by emissions from agriculture and energy. According to the World Resources Institute's Climate Analysis Tool (WRI CAIT), LUCF contributes 67% of Nicaragua's total annual emissions. Agriculture accounts for 18% of emissions, of which enteric fermentation by ruminant livestock is the primary contributor. Energy accounts for 13% of emissions, while waste and industrial processes contribute minimally: 2% and 1%, respectively. Within the LUCF sector, changes in forest land are the primary emissions source, contributing over 99% of LUCF emissions in 2010.<sup>1</sup> Nicaragua submitted its [Second National Communication \(SNC\)](#) in 2011, which included a national GHG inventory for 2005.



Sources: WRI CAIT 2.0, 2015; FAOSTAT, 2015  
Note: Totals do not add up to 100% due to rounding

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

Although GHGs from LUCF comprise the majority of Nicaragua's emissions, WRI CAIT shows that its energy sector contributed to the majority of GHG emissions growth from 1990-2011. Energy sector emissions grew by 11 percent during this period, with around 1% percent average annual rate of change. This sector contributed 65 percent of the total increase, while most of the remaining growth – around 33 percent – came from the agriculture sector.

**LUCF:** LUCF emissions are the largest contributor to Nicaragua's GHG profile and remained virtually flat between 1990 and 2011 (noting, this is due in part to previous data collection issues described in the SNC). Forests were cleared in the late 1990s and early 2000s for agriculture, cattle grazing, and commercial logging, with some losses due to forest fires, according to the SNC. Nearly all emissions arose from changes in forest land: tree cover loss between 2001 and 2014 totaled 920,393 hectares (Ha), or approximately 11 percent of the tree cover in 2000.<sup>2</sup>

<sup>1</sup> Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT), viewed May 3, 2016: <http://faostat3.fao.org/browse/area/2/E>.

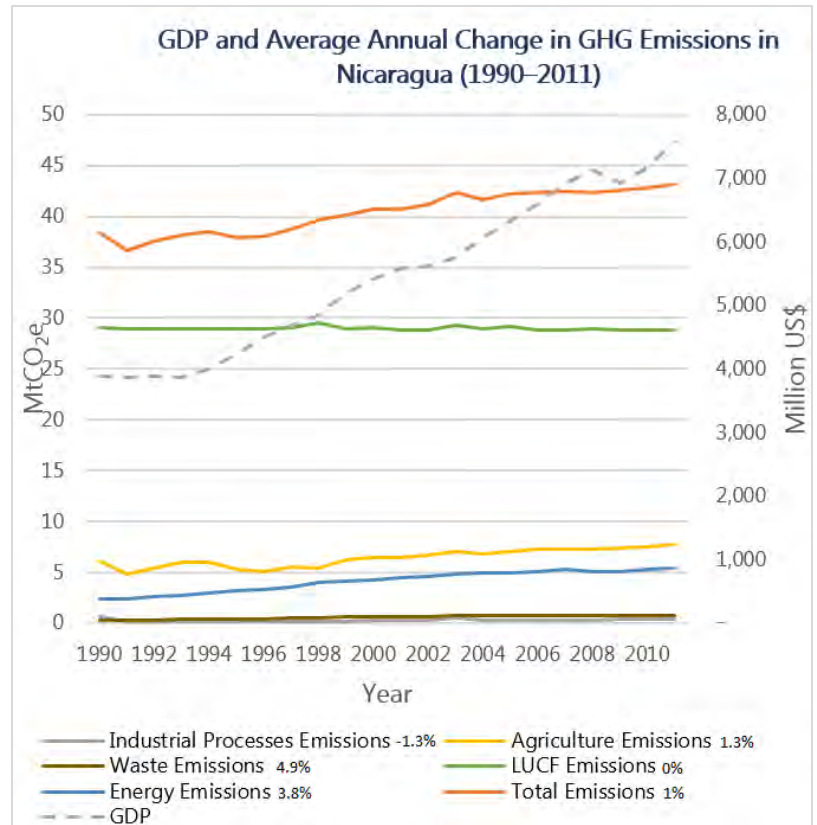
<sup>2</sup> Ibid.

**Energy:** Energy emissions grew by 3 MtCO<sub>2</sub>e between 1990 and 2011, according to WRI CAIT. The electricity and transportation subsectors were the biggest drivers of this change, contributing 37 percent and 33 percent of the total increase.

**Agriculture:** Though the SNC describes past challenges with data collection methodologies in the agriculture sector, WRI CAIT shows that Nicaragua's agriculture emissions grew by a total of 26 percent between 1990 and 2011 (1.6 MtCO<sub>2</sub>e). Drivers include national initiatives aimed to support and increase livestock production.<sup>3</sup> Nearly half of this change came from enteric fermentation (42%), while another 25 percent came from agricultural soils.

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

According to the GHG and socio-economic data from WRI CAIT, Nicaragua's carbon intensity declined by 43 percent between 1990 and 2011, from 9.4 thousand tons CO<sub>2</sub>e (ktCO<sub>2</sub>e) per US\$1 million to 5.4 ktCO<sub>2</sub>e per US\$1 million.<sup>4</sup> GDP grew by 105 percent during this time, while GHG emissions grew by only 11 percent. In 2011, Nicaragua's carbon intensity was almost 6.5 times the world average.



Sources: WRI CAIT 2.0, 2015

### Climate Change Mitigation Targets and Plans

Nicaragua has not submitted an Intended Nationally Determined Contribution (INDC) to the UN Framework Convention on Climate Change (UNFCCC) and did not sign the Paris Agreement<sup>5</sup> at the 21<sup>st</sup> Conference of the Parties (COP 21). However, in 2010 Nicaragua released a [National Strategy and Action Plan on Environment and Climate Change](#) (2010-2015).<sup>6</sup> Moreover, Nicaragua developed sectoral plans, programs, and policies including the National Sustainable Electrification and Renewable Energy Program (PNESER; 2012-2017), which aims to (1) reduce poverty by promoting access to efficient and sustainable electricity services, (2) diversify the energy mix, and (3) mitigate and adapt to climate change.<sup>7</sup>

<sup>3</sup> See: *El Plan Nacional de Desarrollo Operativo 2005-2009* and *El Plan Estratégico de Desarrollo de Chontales 2004-2020*.

<sup>4</sup> GHG intensity was calculated using WRI CAIT figures for GDP in 2005 US dollars at market exchange rates.

<sup>5</sup> UNFCCC Newsroom, <http://newsroom.unfccc.int/media/632121/list-of-representatives-to-high-level-signature-ceremony.pdf>, accessed on May 9, 2016.

<sup>6</sup> Climate Change Adaptation, Nicaragua, UNDP, <http://www.adaptation-undp.org/explore/nicaragua>, accessed on May 9, 2016.

<sup>7</sup> International Energy Agency, <http://www.iea.org/policiesandmeasures/renewableenergy/?country=Nicaragua>.