



# Greenhouse Gas Emissions in Honduras

## Honduras Numbers at a Glance (2013)

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

Total GHG emissions  
(0.1% of world total)  
World: 48,257 MtCO<sub>2</sub>e

**7,849,059**

Population  
World: 7,176,092,192

**6.27**

tCO<sub>2</sub>e per capita  
World: 6.72 tCO<sub>2</sub>e

**US\$ 17,482 Million**

GDP\*\*  
World: US\$71,059 Billion

**2,814**

tCO<sub>2</sub>e/million US\$ GDP  
World: 679 tCO<sub>2</sub>e/million US\$ GDP

**-2 MtCO<sub>2</sub>e (-4%)**

Change in GHG emissions  
(1990 - 2013)  
World: +14,434 MtCO<sub>2</sub>e  
(+43%)

Sources: WRI CAIT 2.0, 2017.

Emissions including Land-Use Change and Forestry

\*Million metric tons of carbon dioxide equivalent. Global Warming Potentials are from the Intergovernmental Panel on Climate Change Second Assessment Report.

\*\*Gross Domestic Product (GDP) in constant 2010 US\$

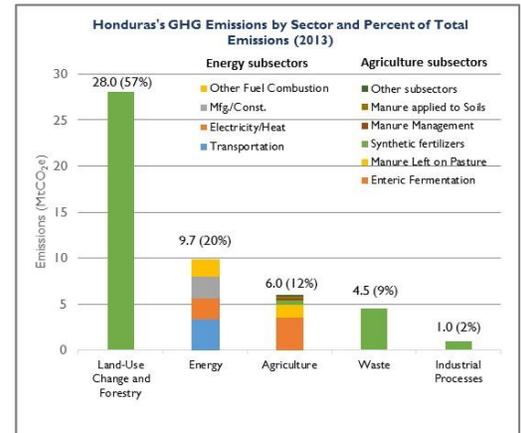
## Greenhouse Gas (GHG) Emissions by Sector

According to the World Resources Institute Climate Analysis Indicators Tool (WRI CAIT), Honduras's 2013 GHG profile was dominated by emissions from the land-use change and forestry (LUCF) sector, which accounted for 57% of the country's total emissions. Energy was the second most significant emitting sector (20%) with transportation, electricity and heat production contributing 57% of energy emissions. Agriculture, waste, and industrial processes (IP) contributed 12%, 9%, and 2%, respectively of total emissions.<sup>1</sup> Within the LUCF sector, emissions were almost entirely (99%) from changes in forest land.<sup>2</sup>

## Change in GHG Emissions in Honduras (1990-2013)

According to WRI CAIT, Honduras' GHG emissions decreased by 2 MtCO<sub>2</sub>e from 1990 to 2013, driven by a decrease in LUCF emissions. The average annual change in total emissions during this period was -0.04%, with sector-specific average annual changes as follows: LUCF (-1.4%), energy (5.8%), agriculture (1.1%), waste (2.5%), and IP (5.4%). The change in emissions in selected sectors is discussed below.

**LUCF:** According to WRI CAIT, LUCF emissions decreased 31% between 1990 and 2013,<sup>3</sup> driven by changes in forest land.<sup>4</sup> Forest resources are an important source of income in Honduras, particularly in rural areas. Yet forest resources are under severe pressure due to deforestation and forest degradation. Deforestation in Honduras is driven by conversion of forest for agricultural and livestock production, unmanaged forest exploitation for fuel wood, illegal logging, land tenure insecurity, and lack of production support and market access. Degradation is due to a combination of uncontrolled fires and poor forest management.<sup>5</sup> According to the Food and Agriculture Organization (FAO), Honduras had an annual deforestation rate of 2.4% between 1990 and 2000; this figure dropped to 2.1% from 2000 to 2010.<sup>6</sup> Although this represents a reduction of 0.3% of the annual deforestation rate experienced in the previous decade (1990-2000), Honduras maintains the highest rate of deforestation among Central American countries.<sup>7</sup> In 2000, the Secretariat of Agriculture and Livestock and the State Forest Administration developed the Forestry, Protected Areas and Wildlife Policy 2000–2025 which was not continued by subsequent administrations and has



Sources: WRI CAIT 2.0, 2017, FAOSTAT, 2017.

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<sup>1</sup> World Resources Institute Climate Analysis Indicators Tool (WRI CAIT 2.0, 2017). Global Warming Potentials (GWPs) are from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (SAR). WRI CAIT draws on data from the International Energy Agency (IEA), primarily, for energy emissions, the US Environmental Protection Agency for IP and waste emissions, and the Food and Agriculture Organization (FAO) for LUCF and agriculture emissions.

<sup>2</sup> Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT). [Emissions – Land Use Total](#), viewed on March 14, 2017.

<sup>3</sup> WRI CAIT 2.0, 2017. WRI CAIT data show that LUCF emissions dropped 12.3 MtCO<sub>2</sub>e between 2000 and 2001. This decrease in emissions may be due to various reasons including (1) an over-estimate of emissions reductions, and (2) FAO applying different deforestation rates over the periods 1990-2000; 2001-2013.

<sup>4</sup> FAOSTAT, 2017.

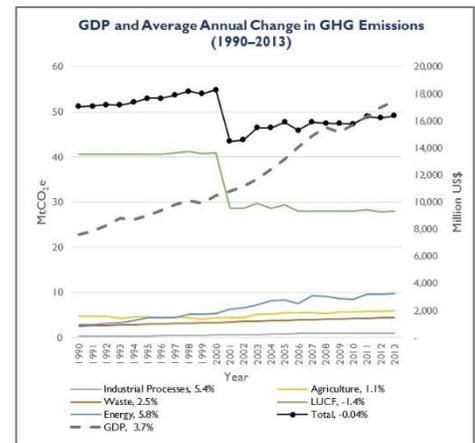
<sup>5</sup> World Bank. [Republic of Honduras Country Environmental Analysis](#), 2007.

<sup>6</sup> Food and Agriculture Organization, United Nations Development Programme, United Nations Environment Programme. [Tenure of indigenous peoples territories and REDD+ as a forestry management incentive: the case of Mesoamerican countries](#), 2013.

<sup>7</sup> Ibid.

been converted to the National Forestry Program ([PRONAFOR](#)).<sup>8</sup> In 2007, Honduras enacted the Forestry Law, Protected Areas and Wildlife which established the legal framework for the sustainable management of forest resources and created the National Institute for Forest Conservation ([ICF](#)) to: (1) manage public forest resources, (2) regulate and control private natural resources, (3) ensure compliance, and (4) promote the development of the forestry sector.<sup>9</sup> As of 2010, Honduras' total forest area was approximately 5.2 million hectares.<sup>10</sup> Honduras participates in the [UN-REDD Programme](#) and the Forest Carbon Partnership Facility, and is currently developing its National REDD+ Strategy.<sup>11</sup>

**Energy:** WRI CAIT data show that energy emissions increased 7 MtCO<sub>2</sub>e between 1990 and 2013, with electricity and heat production driving this increase. In the early 1990s, following a severe financial crisis in the electricity sector and increasing demand, the hydroelectric-dominated power generation system in Honduras was converted to a fossil fuel-dominated system through a series of market reforms in the sector.<sup>12</sup> This paved the way for the private sector to participate in electricity generation, which favored heavy fuel oil and diesel due to the lower risks and shorter development period of these projects. Moreover, reduced international soft financing of hydroelectric development resulted in more expensive and much less competitive hydroelectric generation.<sup>13</sup> Between 1990 and 2013, electricity generation more than tripled, driven by oil being increasingly used for power generation, growing from 2% in 1990 to 52% in 2013. In contrast, the share of hydropower decreased tremendously in the same period, from 98% in 1990 to 34% in 2013. Biofuels, wind, and coal represented the lowest share in the total electricity generation mix, at 9%, 4%, and 1%, respectively.<sup>14</sup> About 72% of the population in Honduras has access to electricity. The lack of access to electricity by more than a quarter of the population has been a major constraint to economic development and in improving the nation's living standards.<sup>15</sup>



Source: WRI CAIT 2.0, 2017

**Agriculture:** Agriculture emissions grew 26% from 1990 to 2013,<sup>16</sup> driven by enteric fermentation (39.7%) and synthetic fertilizers (33.7%).<sup>17</sup> Data from the FAO show a 14% increase in the number of cattle in the same period.<sup>18</sup> In 1999, the intensity of fertilizer use in Honduras of 87 kilograms per hectare (kg/ha) of cropland was higher than the Central America and the Caribbean average of 65 kg/ha of cropland.<sup>19</sup> This figure reached a peak of 189 kg/ha in 2006 and dropped again to 89.5 kg/ha, in 2013.<sup>20</sup>

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

According to WRI CAIT data, Honduras' GHG emissions decreased 4% from 1990 to 2013, averaging -0.04% annually, while GDP increased 130% in the same period, averaging 3.7% annually. This is a positive trend, although as of 2013, Honduras still emitted approximately 4 times more GHGs relative to GDP than the world average. With a growing and highly energy intensive economy,<sup>21</sup> Honduras has potential for improvement.

### Climate Change Mitigation Targets and Plans

In 2010, Honduras developed its [National Climate Change Strategy \(NCCS\)](#) based on the [2010-2038 Country's Vision and the 2010-2022 Nation's Plan](#). The NCCS includes 17 adaptation and mitigation objectives. Under its mitigation objectives, Honduras plans to reduce its GHG emissions in the energy, agriculture, waste, and LUCF sectors. In its [Intended Nationally Determined Contribution \(INDC\)](#), Honduras commits to reducing GHG emissions by 15% compared to a business as usual scenario by 2030 in all sectors. This commitment is conditioned upon favorable support, and predictable and viable climate financing mechanisms. In the LUCF sector, Honduras's INDC commits to the afforestation / reforestation of 1 million hectares of forests by 2030. Honduras ratified the [Paris Agreement](#) on September 21<sup>st</sup>, 2016.<sup>22</sup>

<sup>8</sup> World Bank. [Republic of Honduras Country Environmental Analysis](#), 2007.

<sup>9</sup> Government of Honduras. [Forestry Law, Protected Areas and Wildlife – Popular Version](#) (Spanish), viewed on March 14, 2017.

<sup>10</sup> FAO, 2010.

<sup>11</sup> Forest Carbon Partnership Facility (FCPF). [Honduras Mid Term Progress Report](#), January 2017.

<sup>12</sup> World Bank. [Republic of Honduras Country Environmental Analysis](#), 2007.

<sup>13</sup> World Bank Energy Sector Management Assistance Program. [Honduras: Power Sector Issues and Options](#), 2010.

<sup>14</sup> International Energy Agency (IEA). Statistics Honduras: Electricity and Heat, [1990](#) and [2013](#).

<sup>15</sup> Sustainable Energy for All. Rapid Assessment and Gap Analysis, [Honduras](#), 2012.

<sup>16</sup> WRI CAIT 2.0, 2017.

<sup>17</sup> FAOSTAT, 2017.

<sup>18</sup> FAOSTAT, Honduras, [Live Animals – Cattle](#), viewed on March 15, 2017.

<sup>19</sup> World Bank. Country Note on Climate Change Aspects in Agriculture, [Honduras](#), 2009.

<sup>20</sup> World Bank. [Fertilizer consumption \(kilograms per hectare of arable land\) in Honduras](#), viewed on March 15, 2017.

<sup>21</sup> Sustainable Energy for All, 2012.

<sup>22</sup> UNFCCC, [Paris Agreement – Status of Ratification](#), viewed on March 15, 2017.