Brazil has compelling reasons to be concerned about the globe's and its emissions: the consequences of climate change are expected to have a profound impact on the country, especially for agriculture, energy security, health and housing, with all indicators predicting an average temperature increase of up to 5°C in some parts of the country, and increased intensity, duration and frequency of extreme drought and rainfall.

Brazil was responsible for 3.5% of global greenhouse gas emissions (GHG) in 2015, approximately 1.9 GtCO₂e, according to estimates from the Emission Database for Global Atmospheric Research (EDGAR). If we consider only net contribution, Brazil provided 2.6% of the total GHGs emitted in the atmosphere during this period. The GDP/Emissions ratio in Brazil is around US$ 1 thousand/tCO₂e, which is lower than the global average of US$ 1,500/GtCO₂e, and a long way from the US$ 20 thousand/tCO₂e, indicated in most climatic scenarios as the level compatible with the low carbon economy.

The variation in Brazilian emissions has been different to that of global rates. Between 1990 and 1997, total emissions in Brazil grew at a faster rate than global emissions. Between 1998 and 2004, the pace was similar to global emissions, and after 2005 they fell sharply, while the rest of the world grew. Since 2009, Brazilian emissions have stopped falling and have remained relatively stable.

Brazil and the world

Brazil is currently the world's 6th largest emitter of greenhouse gases. Despite recent advances (in 2003, Brazil's contribution represented 8% of global greenhouse gas emissions), the country continues to be among the largest global emissions.

Emissions per capita exceeded 9 GtCO₂e/inhabitant (2015) and remains above the global average of 7.4 GtCO₂e/inhab. (already double that in the 1990s).

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1. Data from SEEG, 2015. Analysis of Brazil's GHG emissions (1970-2014) and its implications for public policy and the Brazilian Contribution to the Paris Agreement.
2. AR5 of the IPCC and First National Assessment Report of the Brazilian Panel on Climate Change (PPMC RAN1).
3. Emission Database for Global Atmospheric Research (Edgar), European Commission DG JRC.
Largest global emissions
1st China
2nd United States
3rd India
4th Russia
5th Indonesia
6th Brazil

Source: SEEG.

THE BURDEN OF DEFORESTATION
Variations over time in Brazilian emissions are mainly explained by changes in land use (particularly deforestation in the Amazon), which had accounted for more than two-thirds of the country’s gross emissions and have now fallen to 40% of the total, although remaining the main source of emissions.

THE GROWTH OF OTHER SECTORS
The trajectory of Brazilian emissions follows a different pattern depending on the sector. In the case of changes in land use, emissions have seen large fluctuations over time, shadowing the dynamics of deforestation, while for energy, agriculture & livestock, industrial processes and waste, emissions have been growing continuously since the 1970s.

GHG emissions resulting from changes in land use (especially resulting from deforestation), which during the 1990s reached almost 80% of Brazil’s gross emissions, accounted for 42% of Brazilian emissions in 2014. If we consider the net emissions, the fall was even higher: from 75% to 19%.

Emissions from agriculture and livestock showed growth in the period, and likewise with energy.

Energy emissions grew faster than agricultural emissions, surpassing them for the first time in 2012. In net terms, energy is the principle source of GHG in Brazil.