

USA and EU responsible for 69 per cent of climate breakdown, new study shows

September 16th, 2020

Photo: [Martin Snicer, www.flickr.com](https://www.flickr.com/photos/martin_snicer/)

Some countries are hardly responsible for climate change but will face the consequences much more than others. These countries are often relatively poor. The high-income countries have made their fortune by emitting greenhouse gases into the atmosphere for more than 150 years. In a sense, the consequences of their economic development are passed on to low-income countries.

Many have argued that the responsibility of countries for the consequences of climate change should be linked to their contribution to the stocks of greenhouse gases in the atmosphere. Recently, an interesting approach has been published to quantify this responsibility, and provide guidance for determining just approaches to liability for damages related to climate change. In this approach, high-income countries have climate debts, and low-income countries have climate credits.

The approach focuses on the stocks of CO₂ in the atmosphere, and measures a country's responsibility to its contribution to global cumulative historical emissions since 1850. A correction was made for differences in population size: a country with twice the population size of another country is allowed to emit twice as much CO₂. The CO₂ emissions are based on consumption data. This way, countries are also held responsible for emissions abroad due to the production of goods they have imported.

Safe planetary boundary 1990

The approach is a so-called 'fair shares approach'. National fair shares were defined with reference to 350 ppm atmospheric CO₂. This level is the safe planetary boundary, the point climate change can be said to have begun to be a problem (climate breakdown). This point was reached in 1990. Only CO₂ was included in the present analysis, because the next most significant gas (methane) is so short lived that it cannot be meaningfully included in calculations of long-term stocks. By calculating the total CO₂ emitted from 1850 to 1990, the budget for cumulative historical emissions within the planetary boundary was derived: 830 gigatonnes of CO₂.

This budget was distributed among countries according to each country's population as a share of the global population, with populations averaged from 1850 until today. The extent to which nations have exceeded or overshoot their fair share of this given safe global emissions budget is a measure of their national responsibility for climate damages. Countries that have exceeded their fair share would then be said to owe a climate debt to countries that have remained within their fair share.

Responsibilities, debts and credits

The results show that the USA has contributed 40% of total overshoot emissions. The USA is therefore responsible for 40% of climate breakdown. The USA and the 28 countries of the EU together are responsible for 69%. The G8 countries (the USA, EU28, Russia, Japan, and Canada) are together responsible for 85%. The majority of the world's countries are in climate credit. 34% of the total global credit is awarded to India. According to this method, China bears no responsibility yet for climate breakdown, but China will soon overshoot its fair share and become a contributor to climate breakdown.

Source: Hickel, 2020. The Lancet Planetary Health 4: e399 - 404.