

Eradicating extreme poverty and slowing climate change are compatible goals, research shows

November 3 2017



Credit: University of Maryland

Ending extreme poverty by 2030 is the first of the United Nation's Sustainable Development Goals. Meanwhile, plans set forth by the Paris Climate Agreement aim to keep global warming below 2 degrees

Celsius. University of Maryland Geographical Sciences Professor Klaus Hubacek and colleagues investigated the potential consequences of achieving both of these objectives simultaneously.

The UMD research team discovered that eradicating extreme poverty—a condition characterized by deprivation of basic human needs such as access to food, water, healthcare and energy, and defined as those with an income of less than \$1.90 per day—does not threaten the [climate](#) target. However, to bring the poor to the next income level of \$2.97 per day—still modest by most industrialized countries' standards—would require ramping up climate mitigation efforts by 27 percent to avoid dangerous climate change consequences. The findings were published in *Nature Communications* on October 24.

"Given that the top 10 percent of global income earners are responsible for about 36 percent of the current carbon footprint of households, the climate change discourse needs to address income distribution as well as lifestyle and behavioral changes if we are ever to become a low carbon society and truly sustainable world," Hubacek said.

In order to calculate carbon footprints for different income groups, the research team used a multi-regional input–output approach, which allowed them to account for carbon emissions throughout global supply chains, which are then allocated to the final consumer. It not only accounts for household's [carbon emissions](#) associated with direct emissions from heating and cooling, cooking and transport but also accounts for the [carbon](#) emitted during the production of goods and services consumed by different household categories. The approach for the first time uses detailed consumer expenditure behavior of developing and rich countries, combined with global data on countries' production technologies and trade flows, to obtain their impact.

"This research should inform future international [climate change](#)

negotiations and UN's Intergovernmental Panel on Climate Change (IPCC) as it focuses on one of the key stumbling blocks in making significant progress in addressing this global issue—the assignment of responsibilities for contributing towards mitigation efforts while championing economic development and poverty reduction," added contributing author Giovanni Baiocchi, an associate professor in the UMD Department of Geographical Sciences.

More information: Klaus Hubacek et al. Poverty eradication in a carbon constrained world, *Nature Communications* (2017). [DOI: 10.1038/s41467-017-00919-4](https://doi.org/10.1038/s41467-017-00919-4)

Provided by University of Maryland

Citation: Eradicating extreme poverty and slowing climate change are compatible goals, research shows (2017, November 3) retrieved 13 August 2024 from <https://phys.org/news/2017-11-eradicating-extreme-poverty-climate-compatible.html>

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