

SCIENCE CLIMATE CHANGE

Climate Change Could Wreck the Global Economy

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Temperature change will leave the average income around the world 23% lower in 2100 than it would be without climate change

Temperature rise due to climate change may radically damage the global economy and slow growth in the coming decades if nothing is done to slow the pace of warming, according to new research.



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The researchers behind the [study](#), published in the journal *Nature*, found that temperature change due to unmitigated global warming will leave global GDP per capita 23% lower in 2100 than it would be without any warming. “We’re basically throwing away money by not addressing the issue,” said Marshall Burke, an assistant professor at Stanford University. “We see our study as providing an estimate of the benefits of reducing emissions.”

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The economic effects of climate change may be even worse than this study makes them sound. The research relies on historical data from countries around the world on how temperature increase has affected productivity. This means the study does not account for the economic impact of sea level rise, storms or any of the other expected effects of climate change beyond simple warming. “Sea level rise, increased storm intensity...if you think those things are going to worsen the effects of climate change, then our estimates would be an underestimate of the potential impacts, which is sort of terrifying,” said Burke.

This study is far from the first to suggest that climate change will slow economic growth. [Big business](#) has been especially keen on highlighting the potential damage. A Citigroup [report](#) released last month found that minimizing temperature rises to 2.7°F (1.5°C) could minimize global GDP loss by \$50 trillion compared to a rise of 8.1°F (4.5°C) in the coming decades.

The study breaks down productivity into agricultural and non-agricultural fields. The effect of agricultural productive is easy to explain: crops grow most productively within a certain temperature range. (The effects of warming on [crop productivity](#) have been well documented.) But research still don’t know why warm weather decreases productivity for workers in other fields.

The anticipated spike in temperatures will not affect the world evenly, according to the study. Productivity peaks when temperatures in a given region average 55°F (13°C), meaning warming may actually increase productivity in cold northern countries while devastating the tropics. That means climate change could also worsen global inequality—

northern countries are in general already better off than tropical ones.

The study comes just weeks before negotiators from around the world are scheduled to meet at a United Nations conference on climate change in Paris later this year. University of Gothenburg Professor Thomas Sterner, who wrote an [editorial](#) to accompany the study, said he hopes the new evidence of the economic effects will encourage leaders of developing countries to agree to strong action to address climate change.

“The situation is pretty bleak,” said Sterner. “This is really a call to action.”

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