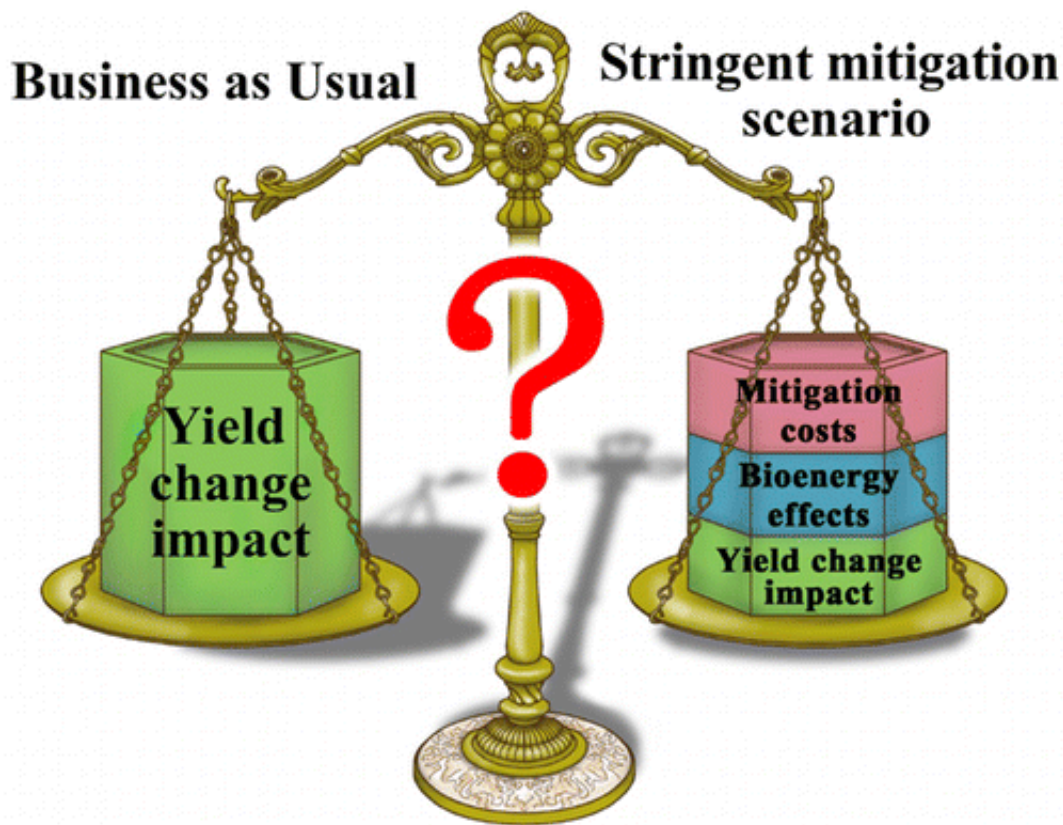


# Cutting carbon emissions could have indirect effects on hunger

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As many of the world's nations prepare and implement plans to cut greenhouse gas emissions, researchers say another critical factor needs to be considered. A new study has found for the first time that efforts to keep global temperatures in check will likely lead to more people going

hungry. That risk, they say in the ACS journal *Environmental Science & Technology*, doesn't negate the need for mitigation but highlights the importance of comprehensive policies.

Previous studies have shown that climate change reduces how much food farms can produce, which could lead to more people suffering from hunger. Curbing the [greenhouse gas emissions](#) that lead to climate change can help maintain the yields of existing crops. But there might be indirect ways in which cutting emissions could actually put more people at risk of going hungry. For example, some grasses and other vegetation used for biofuels require agricultural land that might otherwise be used for food production. So, increased biofuel consumption could negatively affect the food supply. Also, the high cost of low-emissions technologies such as carbon capture and storage will be borne by consumers, who will then have less money to spend on food. Tomoko Hasegawa and colleagues wanted to get a better idea of how these pieces fit together.

The [researchers](#) used multiple models to determine the effects of strict emissions cuts and found that many more people would be at risk of hunger than if those cuts weren't in place. The team concludes that governments will have to take measures, such as increasing food aid, as they address climate change.

**More information:** Consequence of Climate Mitigation on the Risk of Hunger, *Environ. Sci. Technol.*, Article ASAP. [DOI: 10.1021/es5051748](https://doi.org/10.1021/es5051748)

## Abstract

Climate change and mitigation measures have three major impacts on food consumption and the risk of hunger: (1) changes in crop yields caused by climate change; (2) competition for land between food crops and energy crops driven by the use of bioenergy; and (3) costs associated with mitigation measures taken to meet an emissions reduction target that keeps the global average temperature increase to 2 °C. In this study,

we combined a global computable general equilibrium model and a crop model (M-GAEZ), and we quantified the three impacts on risk of hunger through 2050 based on the uncertainty range associated with 12 climate models and one economic and demographic scenario. The strong mitigation measures aimed at attaining the 2 °C target reduce the negative effects of climate change on yields but have large negative impacts on the risk of hunger due to mitigation costs in the low-income countries. We also found that in a strongly carbon-constrained world, the change in food consumption resulting from mitigation measures depends more strongly on the change in incomes than the change in food prices.

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