

Title: Climate change will hit food supplies in the poorest countries hardest.

Summary: Research carried out by a team from University College London, Southampton University and the University of Edinburgh has found that countries that currently suffer from issues around food security are likely to be hit hardest by the future impacts of climate change on crop yields. International action must be coordinated to raise yields in these countries through improvement and modernization of agricultural practices to counteract future adverse impacts of climate change.

Background: The effect of climate change and rising temperature on crop yield is an established concern for global food productivity and security. Despite global effort to tackle undernourishment and the establishment the goal of 'Zero Hunger' (SDG 2), the numbers of people going hungry has been rising in the last five years in line with the global population growth. Ongoing effect of climate change on food security, due to rising temperatures, changing precipitation patterns, and greater frequency of some extreme events is well documented. However, there is a risk of worsening levels of food security over the coming decades as our understanding of the impacts of climate change on some crops, especially those crops important to people in the Global South, is limited. The current paper makes a significant contribution to closing this knowledge gap.

Key findings: The researchers examined the impact of rising temperatures and the effect of management practices on global production of a large set of crops covering about 65% of the current calorific intake, and 70% of global agriculture by area. They found that;

- impact of rising temperatures vary considerably across countries and across crops;
- rising temperatures have negative impact on maize, rice and wheat in the great majority of countries;
- rising temperatures tend to have a positive impact in the case of soybeans and potatoes;
- three crops widely consumed in developing countries tend to be either positively affected (sorghum and sweet potatoes) or suffer only a small reduction in yield;
- countries worst affected by rising temperatures tend to have a low crop productivity and low average energy intake among their populations;
- Irrigation increases the tolerance of crops to warmer climates and decreases the impact of rising temperature levels.

The research emphasizes the importance of efforts to facilitate access to the resources and knowledge to adopt best practice agricultural techniques across the world in order to increase adaptation to climate changes and ensure food security. If fair governance structures are put in place, such technological and knowledge transfers coupled with increased access to trade can help deliver increased yield and food security without undermining the existence of smallholding farmers.

Further information

The work, led by University College London, brings together three leading UK teams doing research in the food and environmental area: Southampton University (Felix Eigenbrod and Robert Holland), University College London (Paolo Agnolucci, Vincenzo De Lipsis, Paul Ekins and Chrysanthi Rapti) and University of Edinburgh (Peter Alexander).

[Read the paper 'Impacts of rising temperatures and farm management practices on global yields of 18 crops'](#)

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