Paper in review

The consequence of climate mitigation on food security

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Highlight

- Impacts of climate change and mitigation measures on food consumption and risk of hunger are quantified.
- Under strong implementation of mitigation measures aimed at attaining the 2°C target, impacts on food security due to land competition between food and energy crops and macroeconomic changes would be comparable with climate change impacts.
- Fund transfer of $87 billion could reduce the negative impacts in the affected countries caused by climate mitigation measures.

Abstract

Climate change and mitigation measures might have impacts on food consumption via the following three factors: i) changes in crop yields caused by climate change, ii) competition for land between food and energy crops driven by the use of bioenergy, and iii) macroeconomic changes associated with the implementation of climate mitigation measures. This study quantified the three impacts on food security and explored the possibility of reducing these impacts by transferring funds from high-income countries to middle- and low-income countries. We found that under strong implementation of mitigation measures aimed at attaining the 2°C target, impacts on food security due to land competition and macroeconomic changes would be comparable with climate change impacts. We also found that in 2050 the provision of $87 billion (0.06% of world gross domestic product in 2050) to affected countries could reduce the negative impacts on food consumption in those countries caused by climate mitigation measures to the same level that would result with no mitigation measures.