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⊞ Article Info This article can be found in the following collections: Nutrition & metabolism-other; Public Health	COMMENT Food, hunger, health, and climate change
Summary Full Text Tables and Figures References Supplementary Material	
Summary	
Background	
One of the most important consequences of climate change could be its effects on agriculture.	
Although much research has focused on questions of food security, less has been devoted to assessing the wider health impacts of future changes in agricultural production. In this modelling	
study, we estimate excess mortality attributable to agriculturally mediated changes in dietary and	
weight-related risk factors by cause of death for 155 world regions in the year 2050.	
Made de	
Methods  For this modelling study, we linked a detailed agricultural modelling framework, the International	
Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT), to a comparative risk	
assessment of changes in fruit and vegetable consumption, red meat consumption, and bodyweight	
for deaths from coronary heart disease, stroke, cancer, and an aggregate of other causes. We	
calculated the change in the number of deaths attributable to climate-related changes in weight and diets for the combination of four emissions pathways (a high emissions pathway, two medium	
emissions pathways, and a low emissions pathway) and three socioeconomic pathways (sustainable	
development, middle of the road, and more fragmented development), which each included six	
scenarios with variable climatic inputs.	
Findings	
The model projects that by 2050, climate change will lead to per-person reductions of 3·2% (SD 0·4%)	
in global food availability, $4.0\%$ ( $0.7\%$ ) in fruit and vegetable consumption, and $0.7\%$ ( $0.1\%$ ) in red	
meat consumption. These changes will be associated with 529 000 climate-related deaths worldwide (95% CI 314 000–736 000), representing a 28% (95% CI 26–33) reduction in the number of deaths that	
would be avoided because of changes in dietary and weight-related risk factors between 2010 and	
2050. Twice as many climate-related deaths were associated with reductions in fruit and vegetable	
consumption than with climate-related increases in the prevalence of underweight, and most	
climate-related deaths were projected to occur in south and east Asia. Adoption of climate-	

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their stringency.

#### Interpretation

The health effects of climate change from changes in dietary and weight-related risk factors could be substantial, and exceed other climate-related health impacts that have been estimated. Climate change mitigation could prevent many climate-related deaths. Strengthening of public health programmes aimed at preventing and treating diet and weight-related risk factors could be a suitable climate change adaptation strategy.

#### **Funding**

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