

# Global food, hunger challenges projected to increase mortality, disability by 2050

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A new study by the International Food Policy Research Institute (IFPRI), the USDA's Agricultural Research Service (USDA-ARS) and RTI International (RTI) projects that global chronic and hidden hunger will increase the overall years of life lost due to premature mortality and years lived with disability, also known as disability-adjusted life years (DALYs), globally by over 30 million by 2050 relative to 2010.

Expected impacts of climate change on the availability and access to nutritious food will exacerbate this change in DALYs by almost 10 percent.

Researchers published the findings in an article in *The American Journal of Clinical Nutrition*, further indicating that policymakers could counteract at least the impacts of [climate change](#) with increased investments in [food systems](#) now.

"Investment in agricultural R&D, [irrigation systems](#), market access and infrastructure are essential to counteract the effects of factors that increase DALYs in coming decades," said Robert Beach, Senior Economist and Fellow at RTI. "To meet the needs and nutrition requirements for society, it is important for policymakers to invest more broadly in [food](#) systems, rather than focusing on the production of calories. Strengthening food systems now, along with health, education and employment opportunities can reduce the effects of climate change and [population growth](#) on global hunger."

According to pre-pandemic estimates, 10 percent of the world's population is experiencing hunger or facing severe food insecurity. As climate change and population growth continue to disrupt food systems, researchers found that reaching the UN Sustainable Development Goal of "Zero Hunger" by 2030 is becoming an enormous challenge without extraordinary policy action.

"Improvements in food systems can significantly decrease hunger, but our projections show that population growth will outpace those improvements at current investment levels, especially in Africa south of the Sahara," Timothy Sulser, Senior Scientist at IFPRI. "Climate change exacerbates the pressures on food systems to deliver healthy diets to everyone but investing in food systems can reduce the years lost that we project, particularly in South and East Asia."

The scenarios examined in the study show that avoiding an increase in DALYs due to climate change requires a comprehensive investment strategy from policy and decision makers globally. An increased investment of \$25.5 billion annually, would more than offset the negative impacts of climate change on DALYs according to the study.

Using DALYs as a metric is appealing due to its universally comparable nature across a broad range of potential health issues. Chronic hunger impacts are associated with protein-energy undernutrition while hidden hunger refers to micronutrient deficiencies.

The study used a model of the global food system developed by IFPRI and published relationships between regional food availability and DALYs to project the total number of DALYs caused by chronic and hidden [hunger](#) and exacerbated by climate change.

"It was exciting to work with this interdisciplinary team to get this innovative approach to analyzing the impacts [climate](#) change can have on our health and our lives" said Naomi Fukagawa, director of the Beltsville Human Nutrition Research Center at the USDA. "Pulling together perspectives from economists and health/nutrition experts is important for understanding and addressing the complex issues facing the future of food systems."

**More information:** Timothy B Sulser et al, Disability-adjusted life years due to chronic and hidden hunger under food system evolution with climate change and adaptation to 2050, *The American Journal of Clinical Nutrition* (2021). [DOI: 10.1093/ajcn/nqab101](https://doi.org/10.1093/ajcn/nqab101)

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