

IFPRI Published Pollination loss removes healthy foods from global diets, increases chronic diseases causing excess deaths

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"A critical missing piece in the biodiversity discussion has been a lack of direct linkages to human health. This research establishes that loss of pollinators is already impacting health on a scale with other global health risk factors, such as prostate cancer or substance use disorders," said Samuel Myers, principal research scientist, planetary health, Department of Environmental Health, and senior author of the study.

The researchers used a model framework, which included empirical evidence from a network of hundreds of experimental farms across Asia, Africa, Europe, and Latin America, that looked at "pollinator yield gaps" for the most important pollinator-dependent crops, to show how much crop loss was due to insufficient pollination. They then used a global risk-disease model to estimate the health impacts the changes in pollination could have on dietary risks and mortality by country. Additionally, they calculated the loss of economic value from lost pollination in three case study countries.

Increasing human pressure on natural systems is causing alarming losses in biodiversity, the topic of the COP 15 UN Biodiversity Conference currently taking place in Montreal. This includes 1-2% annual declines of insect populations, leading some to warn of an impending "insect apocalypse" in the coming decades. Key among insect species are pollinators, which increase yields of three-fourths of crop varieties and are critical to growing healthy foods like fruits, vegetables, and nuts. Changes in land-use, use of harmful pesticides, and advancing climate change threaten wild pollinators, imperiling human supply of healthy foods.

"The results might seem surprising, but they reflect the complex dynamics of factors behind food systems and human populations around the world. Only with this type of interdisciplinary modeling can we get a better fix on the magnitude and impact of the problem," said co-author [Timothy Sulser](#), senior scientist at the International Food Policy Research Institute.

The analysis also showed that lower-income countries lost significant agricultural income due to insufficient pollination and lower yields, potentially 10-30% of total agricultural value.