

Food and Climate Change

How has climate change affected the food we eat?

Food Insecurity

Many people in the US experience food insecurity, meaning they don't always know where their next meal is coming from. There are several things that contribute to food insecurity, from poverty, to job loss, to food deserts. No matter the cause, food insecurity has been exacerbated by climate change. Unpredictable weather and rising temperatures can lead to lower crop yields and less productive livestock. The crops and animal products that are produced are sold at higher prices due to the decreased supply.

Nutrients

Increased levels of the greenhouse gas carbon dioxide can cause nutrient depletion in crops. This can lead to serious nutrient deficiencies for the people who rely on those crops. The most common are zinc and protein deficiencies. As carbon dioxide levels continue to increase, these deficiencies will become worse and more widespread.

Pests and Pesticides

The prosperity of many crops relies on all pests dying in the first frost of the winter. As this event gets later and later, some years never occurring, the population of these pests rises. This creates a large problem for farmers. In response, many choose to use pesticides to keep their crops safe. Many pesticides are petroleum-based. Petroleum and other harmful chemicals are often still present on the produce when it is purchased by the consumer.

How does the food we eat contribute to climate change?

Greenhouse Gases

Much of the world's methane, a powerful greenhouse gas, comes from beef and dairy cattle. Additionally, land use change from forests to agricultural lands leads to increased carbon dioxide emissions. The various systems involved in food distribution also contribute to greenhouse gas emissions. The processes of refrigeration, storage, transportation, and distribution all require large amounts of energy. That energy is traditionally obtained from fossil fuels. Greenhouse gases are emitted at every step of the way in the food supply chain.

Food Waste

Tons of food go to waste every year. This food waste takes up space in landfills, and as it decomposes it releases methane.

Sources

IPCC Chapter on Food Security: <https://www.ipcc.ch/srccl/chapter/chapter-5/>

USDA Climate Change, Global Food Security, and the U.S. Food System:
<https://www.usda.gov/sites/default/files/documents/FullAssessment.pdf>

Press release on CO₂ and nutrient deficiencies by Harvard School of Public Health:
<https://www.hsph.harvard.edu/news/press-releases/climate-change-less-nutritious-food/>

EPA Overview on Climate Impacts on Agriculture: <https://archive.epa.gov/epa/climate-impacts/climate-impacts-agriculture-and-food-supply.html>