

Climate Change, Global Food Security, and the U.S. Food System

Frequently Asked Questions

1. What is the *Climate Change, Global Food Security, and the U.S. Food System* Assessment?

Climate Change, Global Food Security, and the U.S. Food System is a peer-reviewed scientific assessment that identifies climate change effects on global food security, including food availability, access, utilization, and stability. It also analyzes implications of changing global conditions for the United States. The assessment is a contribution to the U.S. National Climate Assessment, and is called for under the President's Climate Action Plan. USDA led production of the report on behalf of the thirteen Agencies of the U.S. Global Change Research Program. Thirty-one authors and contributors prepared the report, representing nineteen federal, academic, nongovernmental, and intergovernmental institutions in four countries.

2. What are the key findings of the Report?

The state of the science is clear: Climate change affects global food security. It affects agricultural yields and where food is produced. Climate change is likely to diminish continued progress on global food security through production disruptions that lead to local availability limitations and price increases, interrupted transport conduits, and diminished food safety, among other causes. Climate change can affect food availability (does food exist?), access (can you get it?), utilization (can you use it?), and the stability of each of these over time. Constrictions at any point in the food system (e.g., food production, transportation, storage) can lead to food insecurity.

3. How will climate change affect food security?

Climate change can disrupt food security by making it more difficult to get food from areas of surplus production to areas of scarcity, due to vulnerabilities in transportation infrastructure and related trade arrangements. Climate change affects market access and the location of food processing and storage facilities. It affects food safety. It affects the nutritional content of food, and the health status of individuals, influencing their ability to absorb nutrients from their food. The more the climate changes, the more damaging these effects.

4. Which populations and regions are most vulnerable?

Absent effective response measures, the poor are likely to be affected by climate change due to its expected influence on food prices. Those living in tropical latitudes are also vulnerable, because crops and livestock there are already closer to temperature thresholds, and many in the region depend on local agricultural production for sustenance and incomes. The influence of such changes on children in vulnerable populations is long-lived. Inadequate nutrition in young children has long term implications for health and economic outcomes. Sustained economic growth can help to reduce vulnerability if it reduces the number of poor people and if income growth exceeds increases in food costs.

5. What are the implications for the United States?

The U.S. has many advantages: a large area of arable land, high agricultural yields, vast integrated transportation systems, and a high level of overall economic development. Nonetheless, changes in climate are expected to affect U.S. consumers and producers by altering the type and price of food imports from other regions of the world, as well as by changing the export demands placed on U.S. producers and the transportation, processing, and storage systems that enable global trade. Demand for food and development assistance may increase, as may demand for the technologies and information to manage changing conditions.

6. Can adaptation reduce the negative consequences of climate change on food security?

The food system offers multiple potential points of intervention for managing food security. However, effective adaptation is subject to highly localized conditions and socioeconomic factors, and the technical feasibility of an adaptive intervention is not necessarily a guarantee that it will be used if it is unaffordable or does not provide benefits within a relatively short time frame, particularly for smaller operations with limited capacity for long-term investments.

Reducing greenhouse gas emissions will reduce the amount of climate change we experience and thus reduce climate impacts on food security. Investing in the research, technology, and deployment needed for effective adaptation, and sharing lessons learned about what works and what doesn't work. Reducing trade restrictions and promoting free and fair trade can help keep prices down and support easy movement of food supplies to where they are most needed. Reducing waste is another opportunity to enhance food security in the face of climate change

7. What is the U.S. doing about climate change and food insecurity?

Great progress has been made in improving global food security. 19% of the world was food insecure in the early 1990s. Now, that figure is 11%, but much remains to be done. Feed the Future, the U.S. Government's global hunger and food security initiative, is drawing on state-of-the-art science and policy to directly address the most critical climate change risks to food security and agricultural development, and to support mitigation opportunities where feasible. Climate smart agriculture approaches to help smallholder farmers in developing countries increase agricultural productivity and incomes, adapt to climate change and mitigate climate change, enhancing food security despite changing climate patterns. Feed the Future also supports the development of sustainable seed systems, which are critical for making research advancements available to smallholder farmers. Sustainable intensification integrates global research breakthroughs and innovative practices, systems, technologies, and policies to increase long-term agricultural productivity in ways that are environmentally sound, reduce risks, and foster investment on farm and off. Improved climate resilience, productivity, and efficiency of farming and food systems are keys to widespread gains in food security.

8. Where can I find more information?

More information may be found online at http://www.usda.gov/oc/climate_change/FoodSecurity.htm.