

How Climate Change Impacts Nutrition Security in Low- and Middle-Income Countries

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EXECUTIVE SUMMARY

A series of global challenges in the past few years – including the COVID-19 pandemic, regional conflicts, and climate change – has sent the world hurtling in the wrong direction when it comes to food and nutrition security. Today, about 10 percent of the global population experiences hunger, significantly higher than in recent years, and 3 billion people are unable to afford a well-balanced, healthy diet that includes whole grains, fruits, vegetables, and animal-sourced foods.

Climate change, in particular, has imposed significant burdens on global nutrition outcomes. The increasing frequency of extreme weather events – including droughts, floods, wildfires, heat waves, and severe storms – has a disproportionate effect on low- and middle-income countries where large proportions of the population rely on agriculture to make a living. Extreme weather can lead to crop failures, pressure from diseases and pests, lost crop and livestock productivity, and lower nutritional value of food – ultimately hurting farmers' livelihoods and leading to higher costs for consumers. Low- and middle- income countries also often have limited capacity to adapt to climate challenges, due to a lack of safety net programs for low-income households, robust infrastructure, and tools and technologies that would enable farmers to produce good crops even in the face of increasingly difficult conditions. Women are particularly vulnerable to food and nutrition insecurity, as they generally have lower incomes compared with men, and studies show that during times of financial pressure, they often reduce their food intake or skip meals so that other members of their household can eat.

High food costs and lost agricultural incomes contribute to increasing rates of malnutrition in all forms, including micro-nutrient deficiencies, undernutrition, and more recently, overweight and obesity. Children, adolescents, and women who are pregnant or lactating have higher nutrient needs, leaving them especially at risk. Improving nutrition outcomes and shoring up our global food system to deal with climate change will require a whole of society and government approach, to ensure that policy solutions work both for nutrition security as well as the natural environment.

KEY RECOMMENDATIONS

Given this context, the U.S. government should consider the following policy recommendations to support global nutrition security:

- **Support greater investments in agricultural research and development.** To address challenges from both malnutrition and climate change, research funding should be focused on retaining or enhancing nutrient content where possible, food crops beyond major staple grains, tailored research to support smallholders in different geographies, solutions to improve value chains for nutritious foods (e.g. animal-sourced foods, legumes, fruits, and local vegetables), food loss and waste, and forgotten crops that may have nutrition and climate benefits.
- **Invest in programs that benefit women's nutrition and women working in agriculture and food systems.** There are multiple ways to support women in the agri-food value chain, including by investing in value-chain sectors that are dominated by women (e.g. fruit and vegetables), strengthening the collection of gender-disaggregated data in the agri-food sector, and enhancing access to girls' education within the context of climate change.
- **Incentivize governments to expand access to technical assistance and extension services.** Extension and technical assistance can facilitate the adoption or scaling of conservation agriculture practices, which can help reduce risks, manage water, improve soil, and increase productivity and incomes in the face of climate shocks.
- **Provide adequate financing for agricultural development programs, especially those that take a whole-of-society-and-government approach.** Programs such as the U.S. Feed the Future initiative support agricultural-led growth and increased incomes by helping to build more resilient food systems. Feed the Future and similar programs aimed at addressing the root causes of hunger and malnutrition within the context of climate change deserve more support.
- **Identify financing mechanisms for governments to increase access to safety net programs.** Increasing coverage of both climate-sensitive and nutrition-sensitive social protection programs such as insurance mechanisms, cash transfers, and school feeding programs, especially under shocks, can help smallholder farmers recover from shocks and improve both food security and healthy diets.
- **Invest in programs that help strengthen private- and public-sector value chains and infrastructure.** Investments in infrastructure that support agriculture, including in improved storage, transportation, and adapted inputs and seed technologies including biofortified crops, can better connect farmers to markets, improve their incomes, and reduce the costs of healthy foods.
- **Increase support for programs that improve farmers' access to finance.** Smallholder farmers, especially women, generally have lower access to capital, resources, feed, and seed markets – leaving them vulnerable to climate change. Increased access to financing would enable them to invest in their livelihoods, including crops and household purchases that would improve household nutrition.
- **Support initiatives that strengthen agricultural data gathering, climate monitoring systems, and related investments in human resources.** Climate information services and local traditional knowledge can help farmers improve their farm management practices and make cropping decisions.
- **Invest more in solutions that enable regional food trade.** Enabling regional food trade can improve market demand, profits for the intermediate sector, and access to healthy diets while potentially reducing food loss. Regional food trade can be strengthened through infrastructure investments, regional trade agreements, and harmonized regulations.

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