KNOWLEDGE LAB ON CLIMATE-RESILIENT FOOD SYSTEMS
An analytical support facility to achieve the SDGs

Enhancing resilience throughout our food systems is essential to addressing the impacts of climate change on food supplies, food safety, and nutrition as well as the broader development impacts of food system disruptions.

Climate change is affecting many aspects of life on earth. Some of the most profound effects are playing out in food systems, from agricultural production through storage, processing, marketing, and consumption. Unless action is taken, the effects on human health and nutrition will increase in the years ahead. Much attention has been given to the impacts of climate change on agricultural production, but the effects throughout the food system and how to create more resilient food systems are less well understood. Enhancing climate resilience throughout the entire food system is essential to meeting the challenges of growing food demand in a context of changing diets and population growth. Developing climate-resilient food systems also bears directly on the achievement of most of the 17 Sustainable Development Goals (SDGs) and indirectly on nearly all of them, and reflects IFPRI's strategy for ending hunger and malnutrition.
Climate change has well-known direct impacts on food supplies. But climatic shocks and changes in climate patterns also affect the safety and nutritional value of food through increases in the incidence of pests, diseases, and mycotoxins. Increased concentrations of carbon dioxide may reduce the nutrient content of food crops, including protein, iron, and zinc content. Extreme climate events lead to unexpected disruptions in local and global food supply chains, limiting the portfolio of policy options available for preserving economic growth as the global market disturbances ripple through production systems. Increased risk experienced by producers and consumers alike may lead to underinvestment and forms of maladaptation in food systems that constrain economic growth. The poor are most vulnerable to these changes, but the effects may be felt more widely through migration, civil unrest, and conflict.

Given these profound and widespread effects, systemic responses are required, with appropriate combinations of technical, institutional, and policy options. Such interventions offer a direct pathway to poverty reduction and sustained economic growth by preventing the liquidation of assets and the decrease of human and natural capital, and by reducing the volatility of production, incomes, and consumption, with benefits for the health and productivity of households.

**MEETING KNOWLEDGE NEEDS**

To meet these challenges, IFPRI proposes establishing a Knowledge Lab on Climate-Resilient Food Systems—an analytical support facility for countries and development organizations to engage and design resilience-increasing investment strategies in order to develop climate-resilient food systems. The Knowledge Lab will generate evidence on and actionable insights into resilience-building approaches that combine technological innovations and strategic public policies with solutions emerging from financial markets, community organizations, and the private sector.

Solutions to the challenges of climate change depend on the capacity to develop long-term policies for sustainability. Decision makers must be able to evaluate both trends in the global economic landscape and the priorities and preferences of local governments, businesses, and communities in order to ensure sustained political consensus. IFPRI’s experience working
with markets, gender, climate change, and nutrition and its experience undertaking work that spans from farm-level analyses to regional and global modeling offers an unrivaled capacity to connect local issues to global problems. This experience, coupled with IFPRI’s role as a trusted partner of ministries of finance, planning, agriculture, water, nutrition, and health and of other international institutions and civil society, provides a unique opportunity to lead the way in developing actions and policies for climate resilience.

The program’s research will investigate climate resilience in food systems and evaluate potential outcomes of new agricultural technologies, policies, and institutions. To identify effective interventions across the entire food system space, research must move beyond the traditional focus on crop production and create meaningful connections along the value chain and across gender, nutrition, and institutions.

Qualitative and quantitative tools will improve our understanding of the role of gender, institutions, regulatory design, and property rights in technical and social change processes. The Knowledge Lab will directly support countries as they work toward increasing food system resilience, and will collaborate with civil society, including producers’ organizations, and the private sector to test options to improve resilience.

**RESEARCH AREAS**

The Knowledge Lab will initially focus on three research areas.

1. **NATIONAL STRATEGIES FOR RESILIENT FOOD SYSTEMS**

   This workstream will engage directly with government agencies and civil society organizations to identify resilience strategies that support agricultural and economic growth, empower women in the agriculture and food sectors, and help to ensure countries’ long-term food and nutrition security in an environmentally sustainably way.

2. **BUILDING RESILIENCE ALONG FOOD VALUE CHAINS**

   This research will enhance CGIAR’s substantial efforts in increasing production and access to food supplies under a changing climate. It will identify cost-effective interventions and methods to strengthen institutions that support resilience-building along critical food value chains and lead to women’s empowerment and positive nutrition outcomes.

The Knowledge Lab will build on IFPRI’s long-term climate change work, applying a range of integrated analytical tools and deploying “big data” to identify constraints to the adoption of policies and technologies for resilience and to evaluate their impact on society.
SCALING OUT AND UP COMMUNITY-LED RESILIENCE INITIATIVES

Resilience can only be achieved if communities participate in the planning, identification, and execution of climate-resilience strategies. IFPRI and national and local partners have co-designed a set of resilience-support tools focused on changing perceptions, mindsets, and incentives to increase community focus on longer-term risk management, sustainability, and resilience. This research area will engage with domestic and international nongovernmental organizations (NGOs) and government agencies to further incentivize and expand locally appropriate resilience solutions.

IFPRI LEADERSHIP AND PARTNERSHIPS

IFPRI is consistently ranked as a leading global think tank with distinction in economics, particularly agricultural economics, and international development. Over the last 15 years, the Institute has developed a strong program on climate change and agriculture and is now a go-to source for impact and policy research on this topic. IFPRI has also developed a research program focused on gender and climate change and is now adding a food-systems and nutrition perspective to its agriculture–climate change work. Collaborations with civil society organizations have led to innovative approaches to social learning. Qualitative and quantitative impact assessments have established methods for learning about how various interventions affect critical outcomes, including productivity and economic gains, nutrition, and women’s empowerment.

Addressing challenges of this scale cannot be done by a research organization alone—partnerships are required. The Knowledge Lab will be developed within a set of CGIAR umbrella programs, including the CGIAR Research Programs on Climate Change, Agriculture and Food Security (CCAFS); Policies, Institutions, and Markets (PIM); Agriculture for Nutrition and Health (A4NH); and Water and Land Ecosystems (WLE). This initiative will also bring together key research partners, including universities, and other major actors with complementary knowledge and on-the-ground experience. Engagement with large-scale civil society organizations will build on grassroots perspectives and initiatives, and ensure that results are rapidly applied to benefit poor women and men. Partnerships with private sector actors will tap into innovative technologies and value chain approaches. Involvement of international organizations and multinational NGOs will increase the initiative’s capacity to achieve impact at scale. Working with these partners, the Knowledge Lab will lay the foundation for building climate-resilient food systems to ensure food security and achieve the SDGs.

For further information, please visit http://climatechange.ifpri.info.
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