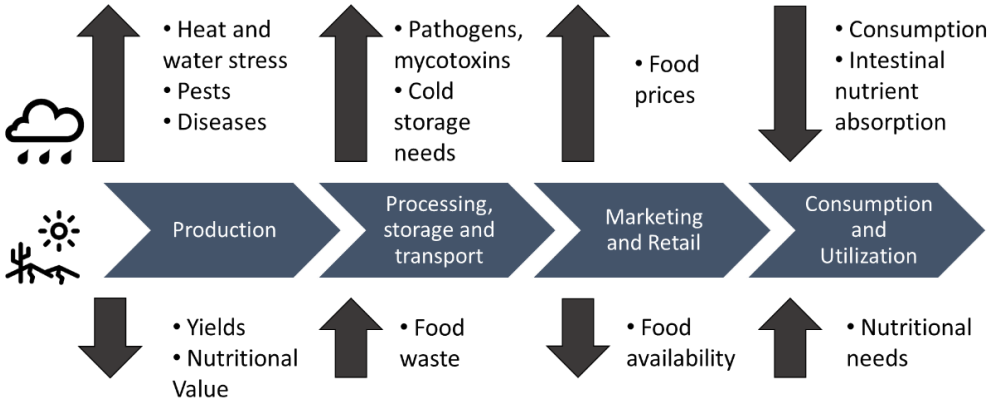
INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
IFPRI

Knowledge Lab on Climate Resilient Food Systems: *An analytical support facility to achieve the SDGs*

BACKGROUND and RATIONALE

Climate change is affecting many aspects of life on earth. Some of the most profound effects are playing out in the food system, from agricultural production through storage, processing, marketing, and consumption. Unless action is taken, the effects on health and nutrition will increase in the years ahead. Attention is growing to the impact of climate change on agricultural production, but the effects throughout the food system are less well understood; even less is known about how to create more resilient food systems. Enhancing climate resilience throughout the entire food system is essential to meet the Sustainable Development Goals (SDGs) as shown in Figure 1.

The largest direct impacts of climate change will be on food supplies, but climatic shocks and changes in climate patterns will also increase the incidence of pests, diseases, and mycotoxins that affect the safety and nutritional value of food. Increased concentrations of carbon dioxide may reduce the nutrient content of food crops, including protein, iron, and zinc content. Extreme climate events will also 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 maladaptation 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 conflicts.



Given these profound and widespread effects, coordinated and 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, the decrease of human and natural capital, and by reducing the volatility of production, incomes and consumption with important effects on the health and productivity of households.

GOALS and OBJECTIVES

The proposed program will establish the Knowledge Lab on Climate-Resilient Food Systems, an analytical support facility for countries and agencies to engage and design resilience-increasing investment

strategies and develop climate-resilient food systems. The program's research will investigate climate resilience in food systems and evaluate potential outcomes of policies, practices and institutions. The overall objective of the Knowledge Lab is to generate evidence and actionable insights into resilience-building approaches that combine technological innovation with institutional and policy solutions emerging from financial markets, community organizations, and the private sector.

To identify intervention opportunities across the entire food system space, research must move beyond the traditional focus on crop production and create meaningful connections across the value chain and across gender, nutrition, and institutions. To undertake this type of integrated analysis, the Knowledge Lab will build on IFPRI's long-term climate change work. An array of integrated analytical tools will be applied from local to global scale in combination with "big data" to identify constraints to the adoption of resilient policies and technologies as well as the societal distribution of benefits deriving from changes in policies, practices, and technologies. 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 along the entire food value chain, and work with civil society (such as producers' organizations) and private sector actors to test options to improve resilience.

The Knowledge Lab will provide policy makers and investors with the knowledge necessary for scaling up effective approaches, improve the efficiency and effectiveness of financial resources, promote beneficial outcomes for the poor and vulnerable, and ultimately ensure faster progress toward meeting the SDGs.

COMPARATIVE ADVANTAGE and PARTNERS

IFPRI is uniquely qualified to develop and implement this Knowledge Lab. The Institute is consistently ranked as a leading global think tank with distinction in agricultural economics, economics, and international development. IFPRI is also a trusted partner of ministries of agriculture, water, nutrition, and health and has already garnered support to lead such a facility. Over the last 15 years, IFPRI has developed a 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, more recently, started to add a food-systems and nutrition perspective to its agriculture-climate change work, which this program will further develop. IFPRI's collaboration with civil society organizations has developed 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.

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). Addressing challenges of this scale cannot be done by a research organization alone—partnerships are required. This initiative will bring together key **research partners** (IFPRI and other universities) with major actors who bring complementary knowledge and on-the-ground experience. **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. Partnership with **private sector** actors will tap into innovative technologies and value chain approaches. Involvement of **international organizations**, such as FAO and IFAD, and **multinational NGOs** will increase the initiative's capacity to achieve impact at scale.