



Climate Smart Farming: Cornell's Farmer-Driven Research and Extension Program

Allison Chatrchyan, Michael Hoffmann, Arthur DeGaetano, Shorna Allred, David Wolfe, Toby Ault, and Jonathan Lambert
 Cornell Institute for Climate Smart Solutions (CICSS)
 Cornell University, Ithaca, NY 14853, USA, climatesmartfarming.org



MOTIVATION

Extreme precipitation. Heat stress. Short-term drought. Freeze Risk. New pests and diseases. Longer growing seasons. Farmers in the Northeast US are under increasing pressure to respond to extreme weather events and climate change. Cornell's Climate Smart Farming (CSF) program empowers farmers to adopt practices that will increase agricultural resiliency, reduce their impact on the climate, and help them profit from new opportunities. By fostering partnerships and engaging stakeholders, CSF delivers trusted, research-based climate information and decision-support tools for farmers, resource managers, and policy makers.

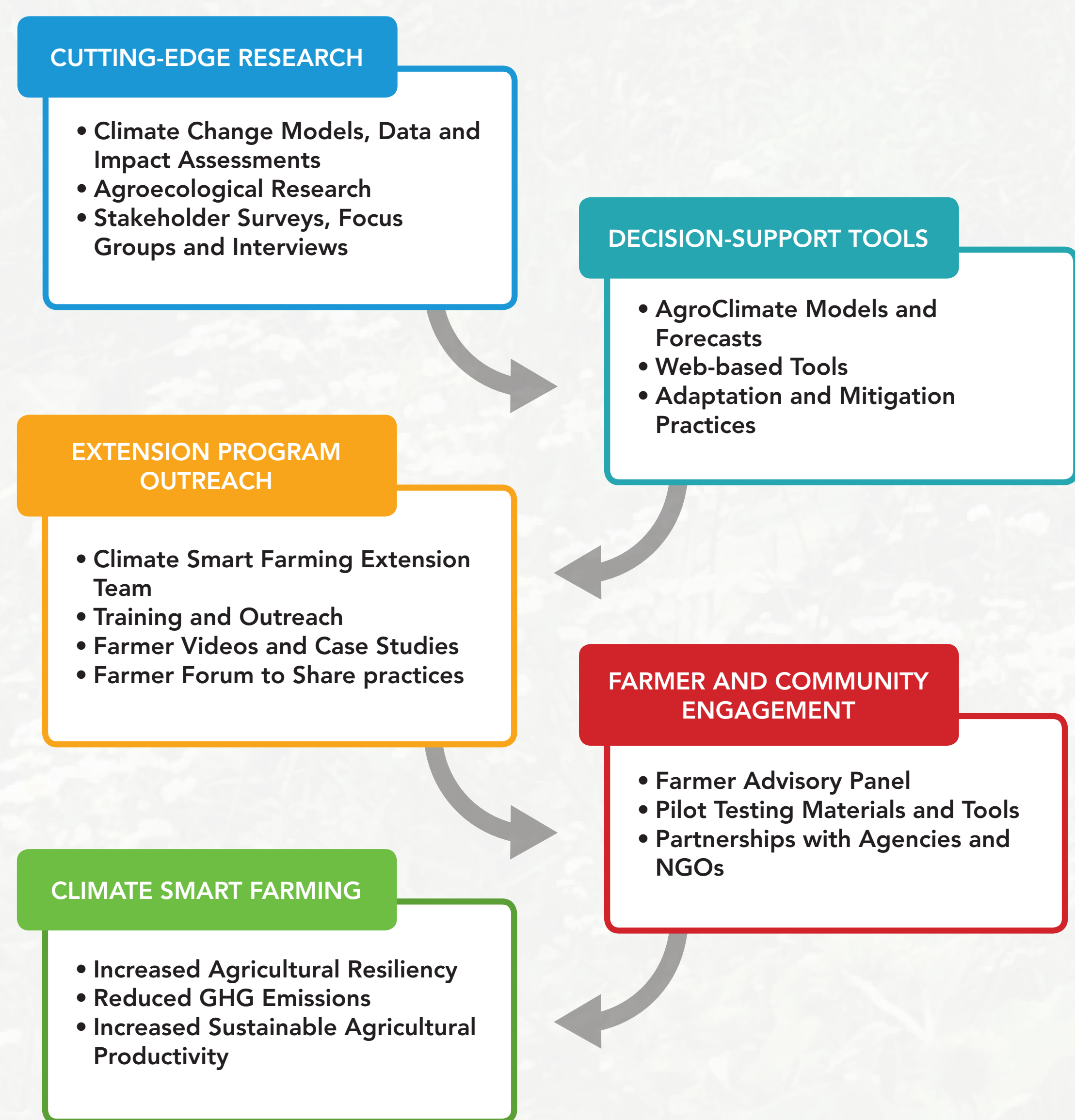
CLIMATE CHANGE & AGRICULTURAL IMPACTS

Agriculture in the Northeastern US is characterized by a diversity of products and production systems, scales of operations, and landscapes. Farmers need a variety of specific practices and tools to help them with climate change adaptation and mitigation. Cornell is working with USDA NE Climate Hub, a region from West Virginia to Maine, to assess needs and develop and deliver information to farmers.



Agricultural Products	Climate Change Impacts	Toolkit of Adaptation & Mitigation Practices
Dairy and Livestock	Heat stress, water impacts from heavy precipitation	Increased cooling, energy efficiency and renewables, water management
Vegetables and Field Crops	Disease, weed and pest pressure, flooding and short-term drought, longer growing seasons, heat stress	Integrated pest management, drainage or irrigation, soil health, cropping systems, shifting dates and new varieties
Tree Fruit, Berries, and Grapes	Unexpected freeze, short-term drought, reduced winter chill	Monitoring weather and protecting crops, siting, soil health and cropping systems, new varieties
Maple Syrup	Changing seasons, variable weather, contamination, tree health	Earlier tapping, new technologies, shifting production

STAKEHOLDER-DRIVEN RESEARCH AND OUTREACH



ACKNOWLEDGEMENTS: The authors gratefully acknowledge support from the USDA NIFA Federal Capacity Funds (Hatch and Smith Lever), collaboration with the USDA Northeast Regional Climate Hub and land grant partners (with funding from the Agricultural Research Service), as well as partnership with the New World Foundation Local Economies Project.

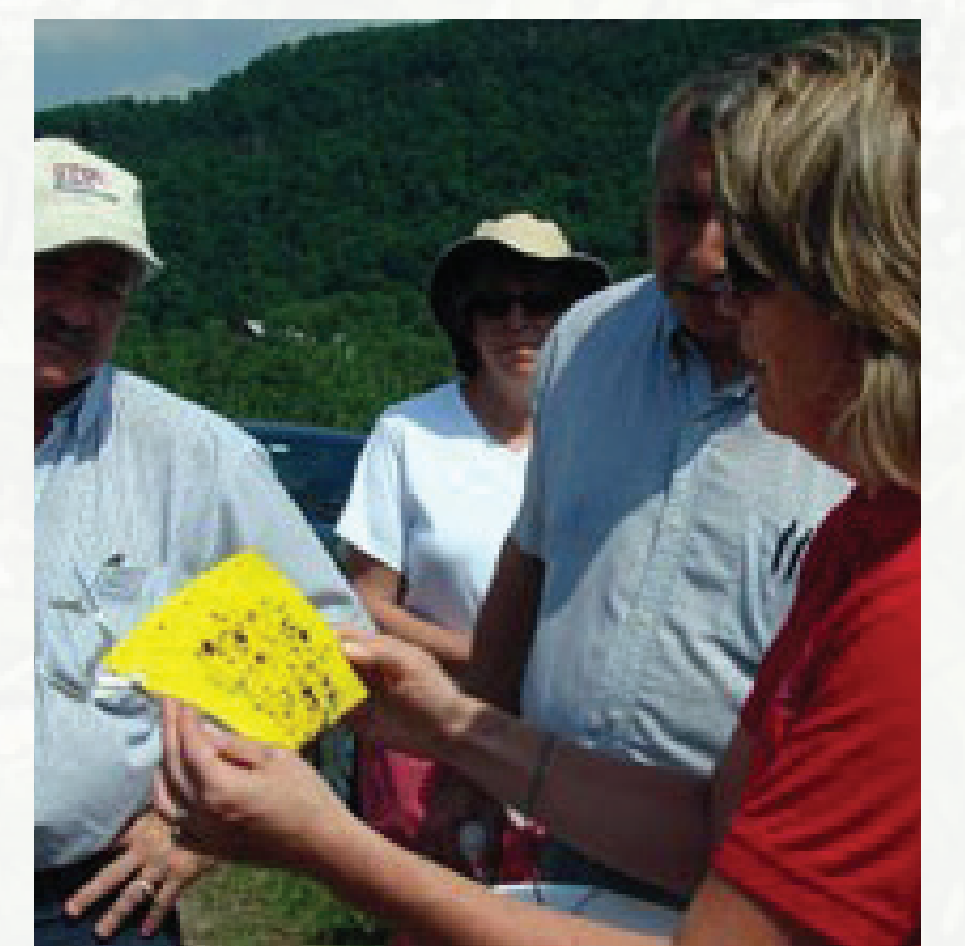
CUTTING-EDGE TOOLS AND RESOURCES

Our new decision-support tools are built on state-of-the-art weather, climate, agricultural yield, and economic data to help growers make the most informed decisions in the face of a changing climate. These tools, ranging from a growing degree day (GDD) calculator to a frost risk predictor, are being built with farmer input and are available for use on computers or smart phones.



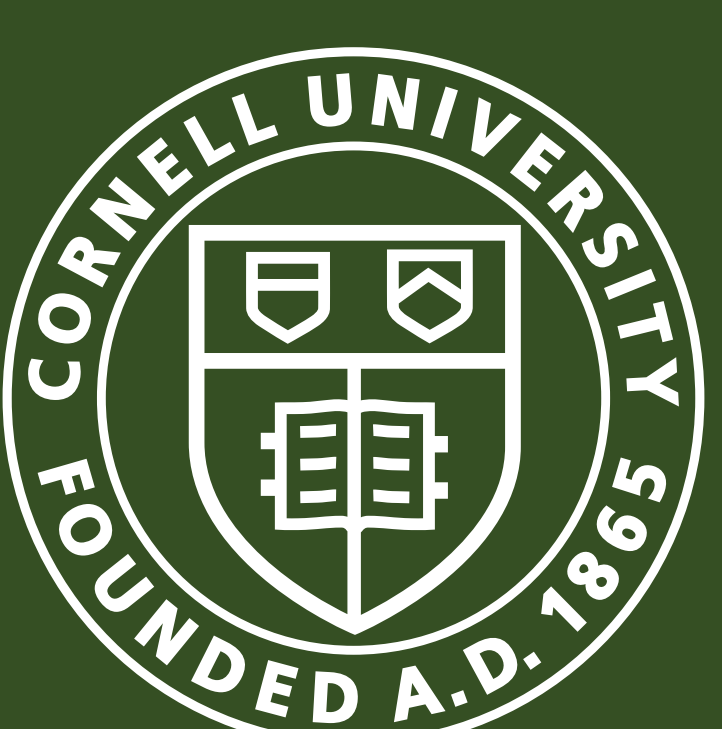
EXTENSION

Our Climate Smart Farming (CSF) Extension team is the first of its kind in the United States. Spanning New York State, the CSF team has been trained in climate change science, impacts and responses, and is providing input to materials and tools. The team provides commodity specific information to farmers and answers their questions about climate variability and farm management. This innovative extension team is strengthening statewide capacity on climate change, and can serve as a model for climate change extension efforts worldwide.



PARTNERSHIPS

We are building collaborations to deliver the latest research updates and guidance on policies that will support stakeholders' ability to adopt new practices. Partnerships include the Cooperative Extension system, agricultural and environmental organizations, government agencies, industry, and foundations.



Atkinson Center
for a Sustainable Future



For More Info
Please Scan Below

