



## CLIMATE RESILIENCY

All sectors of life are impacted by climate and extreme weather, including human health, ecosystem health, agriculture, wildlife, transportation, water, air, and energy. Since 1980, the U.S. has experienced 279 Climate and Extreme Weather (C/EW) disasters with total costs exceeding \$1 billion. The combined costs of all these disasters exceeded \$1.825 trillion. Between 1980 and 2019, the annual average number of C/EW disaster events with losses exceeding \$1 billion in the U.S. was 6.6; yet there were a record-breaking 22 in 2020.

The Cooperative Extension System (Extension) has hundreds of unique programs that address aspects of climate education and applied research to support the adaptation, mitigation, and resiliency of U.S. agriculture to climate disruptions. Extension engages communities in important dialogue and education to affect change across a spectrum of diverse audiences including rural, urban, and underserved groups. Examples of these programs in action include:

**Developing and Implementing Climate-Smart Agriculture:** Extension professionals help farmers, ranchers, and landowners develop and adopt climate-sensitive practices that improve the profitability and sustainability of plant and animal systems. These professionals also educate and support water users, managers, and policymakers in making use of new data and models to weigh the costs and benefits of complex water supply decisions.

**Partnering for Climate-Resilient Communities:** Extension works with communities across the rural-urban continuum to develop climate responsive plans that support transitioning to climate resilient communities.

- Adopting water-saving practices recommended by Extension educators that helped Texas homeowners save an estimated 201.9 million gallons of water annually — that is almost 130 gallons per household per day with an estimated total water-cost savings of \$734,700 per year for participants.
- The [Florida-Friendly Landscaping™](#) program has partnered with the Florida Department of Environmental Protection and others to conserve water and reduce water pollution since 1993. In 2020, those statewide irrigation water savings rates totaled 345,000,000 gallons, or enough water to supply approximately 3,920 households annually. This saved approximately \$1,500,000 for households and \$832,000 for utility companies.

**Providing Co-Benefits through Ecosystem Services:** Extension Climate-Smart management practices for forests, waterways, and other natural habitats reduce the negative impacts of climate on ecosystems and human communities. Mitigation practices include efforts such as carbon markets and alternative energy development to sequester carbon and reduce greenhouse gas emissions, and to help inform and educate the public on these concepts. For example, over 100 events held across Washington State in 2021 influenced over 10,000 landowners to execute practices that improved the health and wildfire resilience on over 37,000 acres with an estimated economic impact of \$25.1 million earned or saved.

## INVESTING IN THE FUTURE

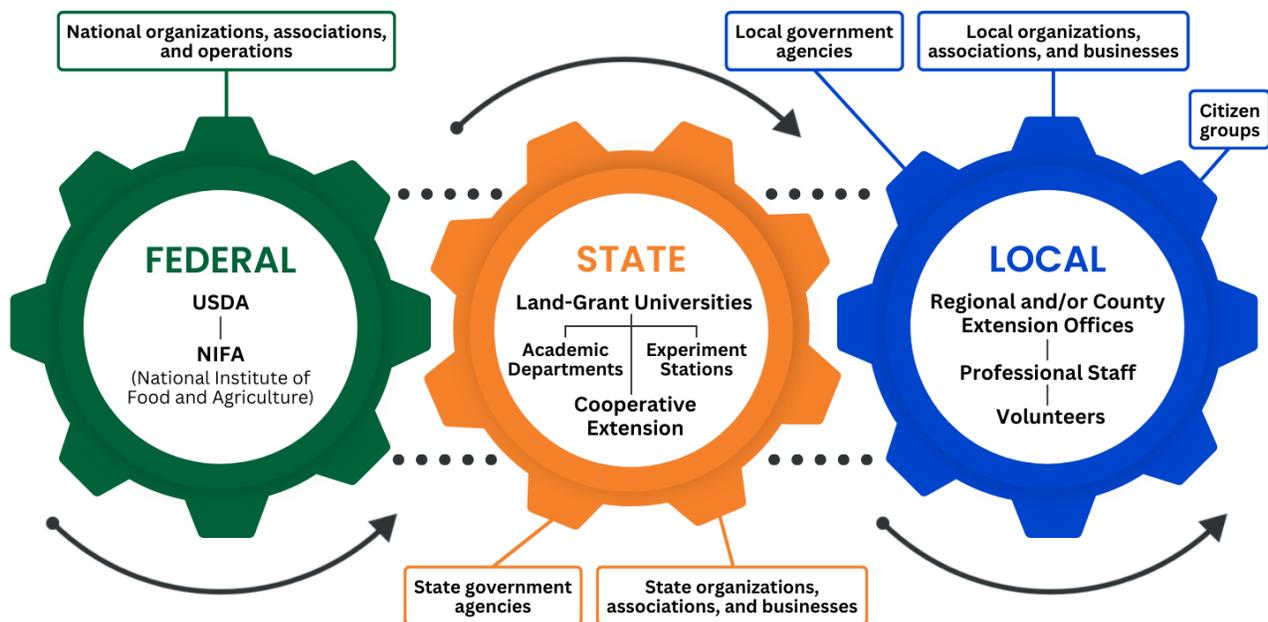
Investing in the Cooperative Extension System through Smith-Lever, 1890s Extension, 1994 Extension, and new partnership funding will allow the System to build out the educational resources that address human and community issues around climate and weather extremes. This investment will result in enhanced public health, cost-effective climate sensitive management plans, tools for farmers to make climate sensitive agronomic decisions, and municipalities with information and tools to help them adapt to a changing climate.

# COOPERATIVE EXTENSION

## AN UNPRECEDENTED REACH

The [Cooperative Extension System](#), in partnership with [USDA's National Institute of Food and Agriculture \(NIFA\)](#), [National 4-H Council](#), and [Extension Foundation](#), is translating research into action for agriculture, health, natural resources, and human sciences to rapidly get practical tools and knowledge into the hands of people and communities who need them.

With over 32,000 state and local professionals and 1M+ volunteers, Extension is a nationwide, educational network that empowers farmers, ranchers, families, and communities to meet the challenges they face. With its wide reach — an office in or near most of the nation's approximately 3,000 counties — Extension professionals help people to adapt to changing agricultural practices and technology; improve nutrition, health, and food safety; prepare for and respond to emergencies; protect our environment; and prepare the nation's youth with essential skills to become tomorrow's leaders.



## TRANSLATING RESEARCH INTO ACTION

[Land-Grant University](#) faculty members translate science-based research results into practical educational resources appropriate for targeted audiences.

County-based educators work at the local level to identify issues, provide outreach education, evaluate the effectiveness of learning tools, and collect grassroots input to prioritize future research needs.

By living and working in communities, county Extension educators leverage relationships to respond to local needs, build trust, and engage effectively with their communities. [Find Extension in every state and territory using this interactive map.](#)