



1890 Impacts

PHOTO: Fort Valley State University Cooperative Extension Program

Land-grant universities drive sustainability through innovative agricultural practices

The 1890 land-grant universities are dedicated to improving the well-being of economically challenged communities. By focusing on sustainable practices, these institutions help address key challenges like food security, environmental stewardship and economic resilience. Through research, Extension and education, they equip farmers and communities with innovative techniques that preserve resources for future generations.

Here are a few examples of that work:

- Researchers and students in **Ohio** developed low-cost robotic solutions for small-scale raspberry farms to automate labor-intensive tasks of mowing and irrigation management, improving efficiency and profitability. *Central State University – Research; Other USDA Capacity – Research. See [full statement](#).*
- Traditional disinfectants to reduce the spread of viral diseases such as COVID-19 can be a major public health concern if not handled properly. Researchers in **North Carolina** found that mushroom and hemp extracts can potentially be used to create an alternative, safer disinfectant. *North Carolina A&T State University Agricultural Research Station; Evans-Alan. See [full statement](#).*
- The Keeping it in the Family Program in **Arkansas** helps landowners retain their land. Recently, a landowner was able to avoid an under-valued sale and retain her family land. The program helped her secure a large conservation contract that has supported her efforts to enhance her farm and timber stand by improving floodplain connectivity, protecting wildlife habitat, native plants and soil quality and reducing wildfire risk. *University of Arkansas Cooperative Extension Service - University of Arkansas at Pine Bluff. See [full statement](#).*

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The National Land-grant Impacts Database (NIDB) documents the individual and collective impacts of the national Land-grant University System of joint research, education and Extension. Much of this work is supported by capacity and competitive funds through the USDA's National Institute of Food and Agriculture.

This document was prepared by the NIDB communications team. The Association of Public and Land-grant Universities' Board on Agriculture Assembly manages the NIDB.



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- In Africa, pesticide workers often lack standardized personal protective equipment (PPE), leading to exposure risks. Those with PPE struggle with heat stress and discomfort. Researchers in **Maryland** worked with a Kenyan governmental entity, chemical company BASF and agricultural technology company Syngenta to develop a new protective garment for farmers and pesticide operators. *University of Maryland - Eastern Shore; Evans-Alan*. See [full statement](#).
- Extension professionals in **Alabama** improved profitability and sustainability for 69 small beef cattle and goat producers. Participants enhanced pasture forage quality, animal nutrition and profits through better soil testing, rotation and forage use. *Tuskegee University Cooperative Extension Program; Other USDA Capacity – Extension, 1890 Extension*. See [full statement](#).
- Extension professionals in **Georgia** worked with AgriUnity LLC to help small beef cattle farmers improve production and marketing. In 2024, 95% of farmers improved cattle quality, 85% enhanced record keeping and herd management, 71% improved soil health, and 82% planted winter forages to reduce costs. *Fort Valley State University Cooperative Extension Program; Other USDA Competitive, Private Grants & Contracts*. See [full statement](#).
- In **Oklahoma**, researchers conducted a series of experiments that provided important information on the viability of brackish water for livestock in regions where freshwater resources are constrained, benefiting small ruminant producers. *Langston University Agricultural Research Station; Other USDA Capacity – Research, Evans-Alan*. See [full statement](#).
- A program in **West Virginia** is addressing gaps in agricultural education, creating clear career pathways. The program benefits its participants while also supporting communities across the state and beyond, helping to build a sustainable future for agriculture. *West Virginia State University Cooperative Extension Program; Other USDA Competitive*. See [full statement](#).
- Researchers in **Tennessee** identified the cause of vascular streak dieback and are developing a diagnostic tool. They collaborated with industry partners to identify fungicide treatments and tolerant species. *Tennessee State University Agricultural Research and Extension Center; Other USDA Competitive, Evans-Alan*. See [full statement](#).
- In **Arkansas**, sweet potatoes provide essential economic value to small-scale farmers. Research is underway to understand the potential impact of weeds as hosts of viruses and insects that can affect crop yield and to develop effective control measure recommendations. *University of Arkansas at Pine Bluff Agricultural Research Station; other USDA capacity – Research*. See [full statement](#).
- In **Texas**, The Urban Agriculture Program partnered with researchers, agencies and community groups to support farmers and producers in addressing extreme weather events and soil limitations. *Prairie View A&M University Cooperative Extension Program; Other USDA Capacity – Extension*. See [full statement](#).