What is SARE?
Since 1988, the Sustainable Agriculture Research & Education (SARE) program has been the go-to USDA grants and outreach program for farmers, ranchers, researchers and educators who want to develop innovations that improve farm profitability, protect water and land, and revitalize communities. To date, SARE has awarded over $333 million to more than 7,792 initiatives.

SARE is grassroots with far-reaching impact
Four regional councils of expert practitioners set priorities and make grants in every state and island protectorate.

SARE communicates results
SARE shares project results by requiring grantees to conduct outreach and grower engagement; and by maintaining an online library of practical publications, grantee-produced information products and other educational materials.

SARE: Advancing the Frontier of Sustainable Agriculture in...

New Mexico

Project Highlight: Hill-Climbing Cows May Benefit Ranchers

Most would say that cows don’t go up steep slopes, climb hills or travel far from water, but some just take off for the hills. As grazers, cattle provide ecological benefits to natural areas and help control invasive weeds, but overgrazing can damage riparian areas and can affect downstream water quality. A possible solution? Hill-climbing cattle, which could increase ranchers’ stocking rates as much as 30 percent and improve the productivity of rangeland in the western United States.

New Mexico State University Range Science Professor Derek Bailey and his team of scientists across the West used SARE funding to look at the genetics of behavior—specifically to identify the genes linked to hill climbing—to develop an inexpensive screening test that allows ranchers to select stock with a genetic disposition to wander and climb. By tagging cattle on ranches with GPS collars, tracking their every move and drawing blood from the hill-climbers to identify genetic commonalities, Bailey’s team collected and analyzed enough data to believe that an affordable screening test is possible and that the hill-climbing trait does not come with significant genetic downsides. More hill-climbing cows would allow ranchers across the West to use harder-to-reach areas for grazing and to thus better manage their rangeland.

For more information on these projects, see sare.org/projects, and search for project number SW15-015.

SARE in New Mexico

western.sare.org/sare-in-your-state/new-mexico

$2,759,631 in total funding
75 grant projects
(since 1988)

For a complete list of grant projects state by state, go to www.sare.org/state-summaries
SARE Grants in New Mexico

Total awards: 75 grants
- 14 Research and Education
- 6 Professional Development Program
- 47 Farmer/Rancher
- 5 On Farm Research/Partnership
- 1 Research to Grass Roots
- 2 Graduate Student

Total funding: $2,759,631
- $1,471,656 Research and Education
- $317,629 Professional Development Program
- $578,745 Farmer/Rancher
- $249,456 On Farm Research/Partnership
- $91,533 Research to Grass Roots
- $50,612 Graduate Student

Find a complete list of projects on page 3.

SARE's Impact

- 53 percent of producers report using a new production technique after reading a SARE publication.
- 79 percent of producers said they improved soil quality through their SARE project.
- 64 percent of producers said their SARE project helped them achieve higher sales.

Learn about local impacts at: western.sare.org/sare-in-your-state/new-mexico

Contact Your SARE State Coordinator

SARE sustainable ag coordinators run state-level educational programs for Extension and other ag professionals, and many help grant applicants and recipients with planning and outreach. Visit western.sare.org/state-pages/new-mexico to learn more.

Omololu John Idowu
New Mexico State University
(575) 646-2571
jidowu@nmsu.edu

Stephanie Walker
New Mexico State University
(575) 646-4398
swalker@nmsu.edu

SARE is funded by the USDA’s National Institute of Food and Agriculture (NIFA).

This report includes summaries of competitive grant programs only. Some competitive grant programs that are no longer offered may be included or excluded from the totals in this report depending on the grant program and SARE region.
New Mexico has been awarded $2,759,631 grants to support 73 projects, including but not limited to, 12 research and/or education projects, 6 professional development projects and 47 producer-led projects. New Mexico has also received additional SARE support through multi-state projects.

### RESEARCH AND EDUCATION GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW18-059</td>
<td>On-Farm Investigations of Stale Seedbeds with Biofumigation for Improved Management of Weeds and Soil-Borne Diseases in Chile Pepper</td>
<td>$131,461</td>
<td>Dr. Brian Schutte New Mexico State University</td>
</tr>
<tr>
<td>SW15-015</td>
<td>Implementation of Genetic Selection for Grazing Distribution to Make Cattle Grazing in the Western US More Sustainable</td>
<td>$271,217</td>
<td>Dr. Derek Bailey New Mexico State University</td>
</tr>
<tr>
<td>SW09-054</td>
<td>Enhancement of Sustainable Livestock Grazing through Selection and Training</td>
<td>$229,527</td>
<td>Dr. Derek Bailey New Mexico State University</td>
</tr>
<tr>
<td>SW09-041</td>
<td>Winter Production of Leafy Greens in the Southwestern USA using High Tunnels</td>
<td>$193,879</td>
<td>Dr. Steven Guldan New Mexico State University</td>
</tr>
<tr>
<td>SW07-606</td>
<td>Extending the Grazing Season and Integrating Crops and Livestock to Sustain Small Farms and Ranches in the Southern Rockies</td>
<td>$7,381</td>
<td>Dr. Steven Guldan New Mexico State University</td>
</tr>
<tr>
<td>SW04-144</td>
<td>Southwest Marketing Network: Expanding Markets for Small-Scale Alternative and Minority Farmers and Ranchers</td>
<td>$124,817</td>
<td>Pamela Roy Farm to Table</td>
</tr>
<tr>
<td>SW02-053</td>
<td>Ganados del Valle Family Ranch Sustainability Program</td>
<td>$70,000</td>
<td>Arlene Valdez Ganados Del Valle; Los Ojos, NM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Melinda Salazar Ganados Del Valle; Los Ojos, NM</td>
</tr>
<tr>
<td>SW01-004</td>
<td>Field-to-Table Technical Outreach Package for Smaller-Scale Farmers &amp; Ranchers in the Front range</td>
<td>$48,500</td>
<td>Greg Shultz NewFarms</td>
</tr>
<tr>
<td>SW98-060</td>
<td>Acequia Conservation Management</td>
<td>$49,272</td>
<td>Stephen Reichert Tierra y Montes Soil &amp; Water Cons. District</td>
</tr>
<tr>
<td>SW96-027</td>
<td>The Production of New, Existing, and Native Crops Under Conventional and Organic Production Practices in Costilla, New Mexico, Garcia, Colorado, and at Taos Pueblo</td>
<td>$100,000</td>
<td>Craig Mapel New Mexico Department of Agriculture</td>
</tr>
<tr>
<td>SW95-018</td>
<td>Extending the Grazing Season and Integrating Crops and Livestock to Sustain Small Farms and Ranches in the Southern Rockies</td>
<td>$141,602</td>
<td>Dr. Steven Guldan New Mexico State University</td>
</tr>
<tr>
<td>LW93-033</td>
<td>Development of Sustainable Crop and Livestock Production Systems for Land in the Conservation Reserve Program (CRP)</td>
<td>$104,000</td>
<td>Rex E. Kirksey New Mexico State University, Agricultural Science Center</td>
</tr>
</tbody>
</table>
## RESEARCH TO GRASS ROOTS GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRGR21-005</td>
<td>Native Habitat Enhancement for IPM in New Mexico Vineyards</td>
<td>$91,533</td>
<td>William Giese</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New Mexico State University</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Miranda Kersten</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New Mexico State University</td>
</tr>
</tbody>
</table>

## PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW15-011</td>
<td>Developing Digital Tools to Improve Soil Sampling and Analysis for</td>
<td>$59,356</td>
<td>Dr.Robert Flynn</td>
</tr>
<tr>
<td></td>
<td>Sustainable Agriculture in the Western U.S</td>
<td></td>
<td>New Mexico State University</td>
</tr>
<tr>
<td>EW13-021</td>
<td>A Distance Learning Approach to Whole Farm Planning</td>
<td>$60,400</td>
<td>Dr.Ann Adams</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Holistic Management International</td>
</tr>
<tr>
<td>EW08-016B</td>
<td>Professional Training for Developing a Hands-On Organic Weed Management</td>
<td>$47,934</td>
<td>Beth LaShell</td>
</tr>
<tr>
<td></td>
<td>Learning Center for Commercial Market Gardens in Local Communities</td>
<td></td>
<td>Fort Lewis College</td>
</tr>
<tr>
<td>EW04-006</td>
<td>Increasing the Effectiveness of Field Agent Response to Producer Requests</td>
<td>$95,939</td>
<td>Teresa Mauerer</td>
</tr>
<tr>
<td></td>
<td>for Alternative Marketing Assistance</td>
<td></td>
<td>NCAT</td>
</tr>
<tr>
<td>EW02-006</td>
<td>Here Forever Farm and Ranch Education</td>
<td>$30,000</td>
<td>Jaime Castillo</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New Mexico State University</td>
</tr>
<tr>
<td>EW95-001</td>
<td>Educational Video on Watershed Management Practices for Pinyon-Juniper</td>
<td>$24,000</td>
<td>Howard Shanks</td>
</tr>
<tr>
<td></td>
<td>Ecosystems</td>
<td></td>
<td>South Central Resource Cons</td>
</tr>
</tbody>
</table>

## FARMER/RANCHER GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW20-363</td>
<td>Compost application on rangeland in the semi-arid southwest for increased</td>
<td>$19,981</td>
<td>Zachary Withers</td>
</tr>
<tr>
<td></td>
<td>soil C storage and forage production</td>
<td></td>
<td>Polk’s Folly Farm</td>
</tr>
<tr>
<td>FW19-357</td>
<td>The use of goat herding techniques to reduce the effects of predation</td>
<td>$20,000</td>
<td>Emily Cornell</td>
</tr>
<tr>
<td></td>
<td>while improving rangeland health in the high plains of New Mexico</td>
<td></td>
<td>Sol Ranch LLC</td>
</tr>
<tr>
<td>FW18-028</td>
<td>Greenhouse Energy Storage &amp; Transfer using Water</td>
<td>$7,565</td>
<td>Kemper Barkhurst</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bluefly Farms, LLC</td>
</tr>
<tr>
<td>FW18-023</td>
<td>Establishing and Maintaining Mite Resistant Nucleus Colonies for the</td>
<td>$16,980</td>
<td>John Gagne</td>
</tr>
<tr>
<td></td>
<td>Sustainable Apiary Using USDA Russian and VSH Queen Bees</td>
<td></td>
<td>San Juan Apiaries</td>
</tr>
<tr>
<td>FW18-019</td>
<td>Provencio Soil Improvement Project</td>
<td>$19,976</td>
<td>Ed Provencio</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ed Provencio</td>
</tr>
<tr>
<td>FW16-028</td>
<td>Passive Solar Herb Drying Project</td>
<td>$18,999</td>
<td>Dr.Tomas Enos</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>El Milagro Herbs, Inc.</td>
</tr>
<tr>
<td>FW16-035</td>
<td>A Comparative Study of Shading Systems to Control the Beet Leafhopper and</td>
<td>$19,909</td>
<td>Peter Sinanian</td>
</tr>
<tr>
<td></td>
<td>Reduce Beet Curly Top Virus in Heirloom Tomato Fields</td>
<td></td>
<td>TomatoCulture LLC</td>
</tr>
<tr>
<td>Project Code</td>
<td>Project Title</td>
<td>Funding</td>
<td>Principal Investigator(s)</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FW15-037</td>
<td>Aerated Compost Tea - Field Guide</td>
<td>$14,560</td>
<td>Minor Morgan North Valley Organics</td>
</tr>
<tr>
<td>FW15-045</td>
<td>Lavender Intercropping and Soil Management</td>
<td>$13,665</td>
<td>Kemper Barkhurst Bluefly Farms, LLC</td>
</tr>
<tr>
<td>FW13-122</td>
<td>Making Roller Crimping a Reality in the Southwest</td>
<td>$9,155</td>
<td>Dale Rhoads Rhoads Farm Joran Viers New Mexico State University</td>
</tr>
<tr>
<td>FW12-096</td>
<td>The Rocky Mountain Survivor Queenbee Cooperative</td>
<td>$25,000</td>
<td>Melanie Kirby Zia Queenbee Co. Julie McIntyre US Fish &amp; Wildlife Service</td>
</tr>
<tr>
<td>FW12-039</td>
<td>Distilling Essential Oils from Southwest Medicinal Plants</td>
<td>$15,000</td>
<td>Dr. Tomas Enos El Milagro Herbs, Inc.</td>
</tr>
<tr>
<td>FW11-027</td>
<td>Testing Traditional Methods of Pest Mitigation</td>
<td>$29,434</td>
<td>Joseph Alfaro Valle Encantado</td>
</tr>
<tr>
<td>FW11-043</td>
<td>Assessment of the Economic Viability of High-Value Greenhouse Production</td>
<td>$14,743</td>
<td>Margaret C Campos Comida de Campos</td>
</tr>
<tr>
<td>FW11-030</td>
<td>Pepper (Capsicum annum) Cultivation, Conservation, and Soil Ecology in Low-Input and Certified Organic Agricultural Systems</td>
<td>$19,585</td>
<td>Loretta Sandoval Owner</td>
</tr>
<tr>
<td>FW11-021</td>
<td>Trials and Informing Regional Farmers about Organic Weed Control Methods</td>
<td>$13,163</td>
<td>Dale Rhoads Rhoads Farm</td>
</tr>
<tr>
<td>FW11-018</td>
<td>Cotton Gin By-Products (CGB)/Dairy Manure Composting for Desert Farming</td>
<td>$13,336</td>
<td>Dr. Robert Woody</td>
</tr>
<tr>
<td>FW11-005</td>
<td>Pollinator Forage Development</td>
<td>$15,000</td>
<td>Heather Harrell For the Love of Bees Les Crowder For the Love of Bees</td>
</tr>
<tr>
<td>FW10-010</td>
<td>Operation of a Subsurface Drip Irrigation (SDI) system under National Organic Plan (NOP) Standards</td>
<td>$14,560</td>
<td>Minor Morgan North Valley Organics</td>
</tr>
<tr>
<td>FW10-038</td>
<td>Restoring Conservation Reserve Program Land to Health and Productivity</td>
<td>$13,112</td>
<td>Kelly Boney Outlaw Land Improvement Company, Inc</td>
</tr>
<tr>
<td>FW09-041</td>
<td>Camino de Paz Orchard &amp; Berry Research &amp; Education Program</td>
<td>$15,000</td>
<td>Greg Nussbaum Camino de Paz Farm</td>
</tr>
<tr>
<td>FW09-047</td>
<td>La Placita Gardens Composting Research Project</td>
<td>$15,000</td>
<td>Abino Garcia Mayordomo La Placita Gardens Andrea Botero LA PLAZITA INSTITUTE</td>
</tr>
<tr>
<td>FW09-049</td>
<td>Organic Weed Control in Perennial Navajo Tea Greenthread</td>
<td>$15,000</td>
<td>Steve Heil</td>
</tr>
<tr>
<td>FW09-008</td>
<td>The Use of Two Mesilla Valley, NM Agricultural Byproducts to Create a Needed Organic Material Soil Amendment</td>
<td>$14,750</td>
<td>Dr. Robert Woody</td>
</tr>
<tr>
<td>Code</td>
<td>Project Title</td>
<td>Funding</td>
<td>PI Name</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>FW08-320</td>
<td>Small Acreage Farms Enlisting Organic and Good Agriculture Practices (SAFE O-GAPs),</td>
<td>$29,750</td>
<td>Nancy Flores</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FW08-004</td>
<td>Manipulating Sandpaper Oak for Livestock and Wildlife Forage and Cover</td>
<td>$15,000</td>
<td>Cheryl Goodloe</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FW07-032</td>
<td>Southwest Survivor Queenbee Project</td>
<td>$15,000</td>
<td>Melanie Kirby</td>
</tr>
<tr>
<td>FW06-321</td>
<td>Growing and Marketing Dye Plants as Alternative Crops</td>
<td>$20,000</td>
<td>Charles Martin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FW05-011</td>
<td>Solar Energy for Sustainable Year-round Production</td>
<td>$9,683</td>
<td>Don Bustos</td>
</tr>
<tr>
<td>FW02-018</td>
<td>Desert Shrimp</td>
<td>$12,000</td>
<td>R. Mack Bell</td>
</tr>
<tr>
<td>FW01-036</td>
<td>Regional Producer’s Improvement Project for High Quality Eggs and Other Poultry Products</td>
<td>$10,500</td>
<td>Steve Warshawer</td>
</tr>
<tr>
<td>FW01-002</td>
<td>Northeast New Mexico Pecan Research</td>
<td>$2,000</td>
<td>Lem Chesher</td>
</tr>
<tr>
<td>FW01-014</td>
<td>Alternative Crops for the Costilla Valley in New Mexico Adoption, Application, Added Value of Product</td>
<td>$10,000</td>
<td>Teresa Young</td>
</tr>
<tr>
<td>FW00-099</td>
<td>Comparing Irrigation Methods for Organic Wheat Production</td>
<td>$10,000</td>
<td>Lonnie Roybal</td>
</tr>
<tr>
<td>FW99-044</td>
<td>Verification of Bat Predation of Pests on a 60,000 Acre Irrigated Farm</td>
<td>$4,000</td>
<td>James Dangler</td>
</tr>
<tr>
<td>FW99-078</td>
<td>A Temporary Step to a Permanent Solution: Use of Strawbales to Construct a Wind Barrier and System of Terrace Planting Beds</td>
<td>$1,760</td>
<td>Fatou Gueye</td>
</tr>
<tr>
<td>FW99-008</td>
<td>Passive Solar Greenhouse Construction and Growing Trial</td>
<td>$5,000</td>
<td>Cathy Hope</td>
</tr>
<tr>
<td>FW98-019</td>
<td>Using a Cultivable Catchment System to Establish a Dryland Commercial Truck Farm</td>
<td>$2,700</td>
<td>John Leaf</td>
</tr>
<tr>
<td>FW98-030</td>
<td>Permanent Irrigated Pasture Demonstration Project Reducing Irrigation Water Use</td>
<td>$3,100</td>
<td>Milford Denetclaw</td>
</tr>
<tr>
<td>FW98-032</td>
<td>The Sustainable Use of Cover Crops in an Annual Vegetable Production System in Northern New Mexico</td>
<td>$4,289</td>
<td>Don Bustos</td>
</tr>
<tr>
<td>FW97-042</td>
<td>Value Added Wheat Production</td>
<td>$3,500</td>
<td>Tom Seibel</td>
</tr>
</tbody>
</table>
### GRADUATE STUDENT GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>GW21-220</td>
<td>Phytochemical Changes and Product Potential of NM Grown Hemp Varieties as Influenced by Production Location and Cultural Practices</td>
<td>$30,000</td>
<td>Dr. Catherine Brewer&lt;br&gt;New Mexico State University&lt;br&gt;Glen Astrove&lt;br&gt;Rich Global Hemp&lt;br&gt;Hanah Rheay&lt;br&gt;New Mexico State University</td>
</tr>
<tr>
<td>GW21-226</td>
<td>Cover Crops for Improving Nitrogen Use Efficiency in a Semiarid Irrigated Forage Rotation</td>
<td>$20,612</td>
<td>Dr. Rajan Ghimire&lt;br&gt;New Mexico State University&lt;br&gt;Pramod Acharya&lt;br&gt;New Mexico State University&lt;br&gt;Vance Dewbre&lt;br&gt;Kiva Farms, LLC&lt;br&gt;Pramod Acharya&lt;br&gt;New Mexico State University</td>
</tr>
</tbody>
</table>

### ON FARM RESEARCH/PARTNERSHIP GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td>OW21-362</td>
<td>Building productivity and soil health with erosion control structures in arid rangelands: effects of organic amendments and seeding.</td>
<td>$74,932</td>
<td>Eva Stricker&lt;br&gt;Quivira Coalition</td>
</tr>
<tr>
<td>OW20-353</td>
<td>Initiation of a New Mexico Participatory Vegetable Breeding Program</td>
<td>$49,571</td>
<td>Charles Havlik&lt;br&gt;NMSU Agricultural Science Center at Los Lunas&lt;br&gt;Dr. Bradley Tonnessen&lt;br&gt;New Mexico State University&lt;br&gt;Dr. Stephanie Walker&lt;br&gt;New Mexico State University</td>
</tr>
<tr>
<td>OW19-341</td>
<td>Evaluation of water and feed intake of purebred cattle in confinement and on arid rangelands, and its implications on selection principles</td>
<td>$49,958</td>
<td>Dr. Marcy Ward&lt;br&gt;New Mexico State University&lt;br&gt;Dr. Craig Gifford&lt;br&gt;New Mexico State University&lt;br&gt;Dr. Samuel Smallidge&lt;br&gt;New Mexico State University</td>
</tr>
<tr>
<td>OW18-034</td>
<td>Pairing Groundwater and Climate Data to Inform Sustainable Ranch Management in Uncertain Times</td>
<td>$49,995</td>
<td>Amy Ganguli&lt;br&gt;New Mexico State University</td>
</tr>
<tr>
<td>OW12-024</td>
<td>The Rocky Mountain Survivor Queenbee Cooperative</td>
<td>$25,000</td>
<td>Melanie Kirby&lt;br&gt;Zia Queenbee Co.</td>
</tr>
</tbody>
</table>
Total funding from the USDA SARE program to New Mexico
$2,759,631

For further information on projects, contact Western SARE at (435) 797-2257 or wsare@usu.edu.
Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).