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 $389 million to more than 8,542 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.

www.sare.org

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

Idaho

Project Highlight: High Tunnels Extend Local Food Production

In 2010, Idaho’s farmers, researchers and educators launched a collaborative effort to achieve the goal of having 20 percent of the state’s food produced locally by 2020. At the same time, a survey of local food vendors revealed that the single largest roadblock to making this goal a reality is Idaho’s short growing season.

This prompted the University of Idaho’s Stephen Love to organize a team of horticulture specialists to expand farmers’ use of high tunnels in the state. Funded by a SARE grant, the team collaborated with three experienced high tunnel growers in different parts of the state to evaluate high tunnel designs and the profitability of growing various crops in them.

The experience at the three farms gave the team important information to share with growers around the state. On one farm, eggplants grown inside the tunnels were superior economically to ones grown outside, but for cucumbers the results were mixed. On another farm, there was a clear advantage to growing tomatoes, garlic and peppers in high tunnels. The third farm showed that medicinal crops otherwise unsuited to Idaho’s climate can be grown in high tunnels. It also evaluated structures specially designed by engineering students to withstand harsh winter conditions.

For more information on this project, see sare.org/projects, and search for project number OW13-043.

SARE in Idaho

western.sare.org/sare-in-your-state/idaho

$5,744,533 in total funding

80 grant projects (since 1988)

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

Total awards: 80 grants
- 27 Research and Education
- 10 Professional Development Program
- 33 Farmer/Rancher
- 5 On Farm Research/Partnership
- 5 Graduate Student

Total funding: $5,744,533
- $4,323,362 Research and Education
- $739,754 Professional Development Program
- $314,557 Farmer/Rancher
- $226,960 On Farm Research/Partnership
- $139,900 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/idaho

Contact Your SARE State Coordinator

Grant Loomis
University of Idaho Extension
(208) 788-5585
gloomis@uidaho.edu

Carmen Willmore
University of Idaho Extension
(208) 886-2406
cwillmore@uidaho.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.

For detailed information on SARE projects, go to www.SARE.org
Idaho has been awarded $5,744,533 grants to support 77 projects, including but not limited to, 24 research and/or education projects, 10 professional development projects and 33 producer-led projects. Idaho 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>
</table>
| SW23-946  | Evaluating benefits of neonatal calf gut-originated probiotics, as direct-fed microbials (DFMs), during the weaning transition to improve calf health | $349,875     | Dr. Denise Konetchy, DVM  
|           |                                                                                |              | University of Idaho  
|           |                                                                                |              | Dr. Amin Ahmadzadeh, PhD  
|           |                                                                                |              | University of Idaho  
|           |                                                                                |              | Dr. Bruna Calvo Agustinho, PhD  
|           |                                                                                |              | University of Idaho  
|           |                                                                                |              | Dr. Leluo Guan, PhD  
|           |                                                                                |              | University of Alberta  
|           |                                                                                |              | Dr. Anne Laarman, PhD  
|           |                                                                                |              | University of Alberta  
|           |                                                                                |              | Pedram Rezamand  
|           |                                                                                |              | University of Idaho  
|           |                                                                                |              | Dr. Hernan Tejeda  
|           |                                                                                |              | University of Idaho  |
| SW23-944  | Seeds underhoof: can the soil seed bank facilitate restoration of sheep-grazed, cheatgrass-invaded rangelands? | $71,104      | Dr. Kelly Hopping  
|           |                                                                                |              | Boise State University  
|           |                                                                                |              | Kerry Byrne  
|           |                                                                                |              | Department of Environmental Science and Management, Cal Poly Hum  |
| SW22-938  | Targeted grazing by sheep to control invasive species and reduce wildfire risk on western rangelands | $349,815     | Dr. Kelly Hopping  
|           |                                                                                |              | Boise State University  
|           |                                                                                |              | Sergio Arispe, PhD  
|           |                                                                                |              | Oregon State University  
|           |                                                                                |              | Marie-Anne de Graaff  
|           |                                                                                |              | Boise State University  
|           |                                                                                |              | April Hulet  
|           |                                                                                |              | Brigham Young University  
|           |                                                                                |              | Renee Kehler  
|           |                                                                                |              | U. S. Forest Service  |
SW22-940  Pacific Northwest Cover Crop Decision Aid System  $349,697  Dr. Sanford Eigenbrode  University of Idaho  Kendall Kahl  University of Idaho - Soil and Water Systems  Dr. Subodh Adhikari  University of Idaho  Ryan Boylan  Palouse Conservation District  Tracy Ericksen  The Eriksens  Garry Esser  Esser Farms  Dr. Douglas Finkelnburg  University of Idaho  Mark Greene  Sheryl Hagen-Zacharison  Zacharison farm  Dr. Patrick Hatzenbuehler  University of Idaho  Lucas Sheneman  University of Idaho  Chloe Wardropper  University of Idaho  Frank Wolf  Lester Wolf Farms  Clint Zenner  Zenner Family Farm

SW21-922  Soil health and profitability implications of including brown mustard and its products in an integrated wireworm management system  $349,919  Dr. Kurtis Schroeder  University of Idaho  Dr. Arash Rasheed  University of Idaho  Dr. Erik Wenninger  University of Idaho  Dr. Jae Ryu  University of Idaho  Gordon Gallup  Mark Greene  Dr. Jeremy Hansen  USDA-ARS  Dr. Patrick Hatzenbuehler  University of Idaho  Hans Hayden  Dr. Inna Popova  University of Idaho  Wayne Westberg

SW18-015  On-farm evaluation and demonstration of advanced manure solid/liquid separation technologies for a sustainable dairy industry in Idaho  $287,466  Dr. Lide Chen  University of Idaho

SW16-031  Optimizing Water and Nitrogen Use for Sustainable Wheat Production  $249,939  Dr. Olga Walsh  University of Idaho

SW11-122  Incorporating Cover Crops and Green Manure in High-Desert Organic and Conventional Farming Systems  $47,628  Lauren Golden  University of Idaho

SW06-083  Black Soldier Fly Larvae as a Tool for Managing Animal Waste and Providing a Food Source for the Aquaculture Industry  $117,682  Sophie St-Hilaire  Idaho State University

SW06-039  ‘Living on the Land’ Stewardship Education Program Expansion  $160,204  Stephanie Etter  University of Idaho Extension
<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>SW05-142</td>
<td>Assessment and Demonstration of the Sustainability of Long vs. Short Potato Rotations</td>
<td>$135,756</td>
<td>Amanda Shiffler University of Idaho Dr. Bryan Hopkins BYU</td>
</tr>
<tr>
<td>SW05-067</td>
<td>Assessment and Demonstration of the Sustainability of Long vs. Short Potato Rotations</td>
<td>$179,403</td>
<td>Bryan Hopkins University of Idaho</td>
</tr>
<tr>
<td>SW05-039</td>
<td>Using farmer-rancher input to develop and implement experiential educational opportunities for beginning farmers and ranchers</td>
<td>$160,056</td>
<td>Cinda Williams University of Idaho Extension</td>
</tr>
<tr>
<td>SW03-021</td>
<td>Integrated Residue Management Systems for Sustained Seed Yield of Kentucky Bluegrass Without Burning</td>
<td>$294,243</td>
<td>Donald Thill University of Idaho</td>
</tr>
<tr>
<td>SW02-038</td>
<td>On-Farm Versus Agricultural Experiment Station Evaluation and Improvement of Intrinsic Characteristics of Landrace Common Bean Cultivars for Sustainable Farming Systems in the Twenty-First Century</td>
<td>$167,717</td>
<td>Shree Singh University of Idaho</td>
</tr>
<tr>
<td>SW02-037</td>
<td>Promoting Sustainable Potato Cropping Systems</td>
<td>$158,477</td>
<td>Bryan Hopkins University of Idaho</td>
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<tr>
<td>SW02-004</td>
<td>Reducing Nitrogen and Phosphorus Excretions from Dairies in Gooding and Jerome Counties, Idaho</td>
<td>$145,672</td>
<td>Alexander Hristov University of Idaho</td>
</tr>
<tr>
<td>SW00-042</td>
<td>Exploration and Implementation of Sustainable Ag Practices and Outreach on the Fort Hall Indian Reservation for the Protection of Groundwater</td>
<td>$103,913</td>
<td>Jennifer Miller NCAP John Helsel Shoshone-Bannock Tribes</td>
</tr>
<tr>
<td>SW95-021</td>
<td>Brassica Green Manure Systems for Weed, Nematode, and Disease Control in Potatoes</td>
<td>$112,580</td>
<td>Charlotte Eberlein University of Idaho</td>
</tr>
<tr>
<td>LW91-029</td>
<td>Development of Sustainable Potato Production Systems for the Pacific North West</td>
<td>$330,000</td>
<td>Jeffrey C. Stark University of Idaho</td>
</tr>
<tr>
<td>LWD91-002</td>
<td>An Economic Evaluation of the MSU Crop Rotations On-Farm Research, Demonstration Legume, Cereal Rotations Compared with Conventional Rotations</td>
<td>$23,675</td>
<td>Edgar Michalson University of Idaho</td>
</tr>
<tr>
<td>LW91-027</td>
<td>Development of Winter Wheat Cover Crop Systems for Weed Control in Potatoes</td>
<td>$42,141</td>
<td>Charlotte Eberlein University of Idaho</td>
</tr>
<tr>
<td>LW89-015</td>
<td>Total Resource Budgeting of LISA (SARE) Farm Enterprises</td>
<td>$31,000</td>
<td>Paul Patterson University of Idaho</td>
</tr>
</tbody>
</table>
Building Negotiation Knowledge and Skills for Enhanced Economic and Environmental Sustainability of Western Farm Businesses

Dr. Patrick Hatzenbuehler
University of Idaho
John Hewlett
University of Wyoming, Department of Agricultural Economics
Dr. Hernan Tejeda
University of Idaho
Joel Schumacher
Montana State University

Enhancing Integrated Pest Management Skills Through Pest Friends, an Educational Board Game

Jason Thomas
University of Idaho Extension Minidoka County
Grant Loomis
University of Idaho Extension-Blaine County

Supporting outcome-based management on private & public rangelands: training agricultural professionals on monitoring techniques

Dr. Jason Karl
University of Idaho

Idaho Qualitative Soil Health Initiative and Training

Jessica Harrold
Ada Soil & Water Conservation District
Josie Erskine
Ada Soil & Water Conservation District

Forage and Pasture Educational Program for Extension, FSA, and NRCS in the Pacific Northwest

Glenn Shewmaker
University of Idaho

Building Knowledge of Sustainable Rangeland Management Using Information Technology

Karen Launchbaugh
University of Idaho

Expanding Opportunities for Community-Based Educational Programs in Sustainable Small Acreage Farming and Ranching

Cinda Williams
University of Idaho Extension

Workshops on Soil Quality Assessment and Application for Field Staff

Paula Jones
USDA-NRCS, Three Rivers RC&D Council, Inc.

A Community Based Approach to Extension In Organic Agriculture

Mir M. Seyedbagheri
University of Idaho, Elmore County Extension

Composting Education and Information Access for Western Agriculture

Cinda Williams
University of Idaho Extension
Robert Rynk
University of Idaho

**FARMER/RANCHER GRANTS**

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| FW22-393   | Cardboard layering deep compost mulch for weed suppression, soil health, and profitability | $24,920      | Jonah Sloven
Sweet Hollow Farm                  |
| FW22-407   | Building a holistic, biologically rich, healthy vineyard in order to produce a wine with higher nutrient density and superb flavor | $24,850      | Ron Bitner, Phd
Bitner Vineyards                      |
| FW17-039   | Saving Water and Improving Soil Health Through LESA, Cover Crops, No-Till, and Management Intensive Grazing | $20,000      | Pat Purdy
Pat Purdy                             |
| FW17-055   | No-till potatoes into cover crop, using mod. conv. planter                   | $20,000      | Jeff Parkinson
Jeff Parkinson                         |
<table>
<thead>
<tr>
<th>Project Code</th>
<th>Project Title</th>
<th>Budget</th>
<th>Investigator(s)</th>
</tr>
</thead>
</table>
| FW16-042     | A Rangeland Stock Handling Concept: Inherding on the Hat Creek Grazing Allotment, Ellis Idaho | $19,423 | Glenn Elzinga  
Alderspring Ranch                                                                                     |
| FW11-032     | Goat Meat is Great!                                                           | $7,799  | Evelyn Simon  
Simon Boers                                                                                              |
| FW10-039     | Pokey Creek Farm Elderberry Exploration                                        | $14,877 | Cinda Williams  
University of Idaho Extension  
Greg and Leah Sempel  
Ashley McFarland  
University of Idaho Extension                                                                 |
| FW08-322     | A Multi-Faceted Approach to Managing Powdery Mildew on Organic Table Grapes in Southwest Idaho | $15,000 | Ariel Agenbroad  
University of Idaho Extension                                                                                   |
| FW08-318     | IBC Technical Services to Farmer’s/Ranchers for Online Markets in South Central Idaho | $29,997 | Judy Hall  
Idaho’s Bounty Co-op                                                                                           |
| FW08-031     | What Good Are Pasture-Raised Ducks to Whole Farm Systems?                      | $14,942 | Mary Rohlfing                                                                                               |
| FW06-042     | Harvest Frequency, Yield and Economics of Summer Squash                       | $4,730  | Karen Strickler                                                                                              |
| FW06-036     | Winter and Summer Greenhouse Production for Small-scale Growers               | $6,235  | Brad Jaeckel  
Orchard Farm                                                                                                 |
| FW06-015     | Extending Forage Season with Multifunctional Browse Islands                   | $8,560  | Juvia Judd  
Lazy M Suris  
Deborah Berman  
Lazy M Suris                                                                                                  |
| FW05-007     | Controlling Common Tansy with Sheep                                           | $3,422  | Kimberly McConnaghy                                                                                            |
| FW04-203     | Optimizing Spatial & Temporal Aspects of Designs for Small-Scale Diverse Farms | $5,500  | Bridget Betta Bunzel  
Bunzel Organics                                                                                               |
| FW03-307     | Ovine Browsing for Brush Control of Forested Environments                     | $7,500  | Jeff Nauman  
Idaho Department of Lands                                                                                     |
| FW01-056     | Farmers Educating Farmers: Developing a Soil Quality Indicator Guide           | $10,500 | Kyle Wilson  
Natural Resource Conservation Agency                                                                                       |
| FW01-039     | Noxious Weed Grazing with Goats                                               | $7,000  | Bonnie Jensen  
Lemhi County Ext.                                                                                             |
| FW01-025     | Developing a Sustainable Market for Small Farms in a Rural Community          | $7,385  | Diane Green  
Grentree Naturals                                                                                             |
| FW00-259     | The Farm to Fork Exchange                                                     | $4,625  | Nate Jones                                                                                                   |
| FW00-052     | Low Stress Stockmanship School for Lemhi County, ID                           | $5,450  | Wally Butler                                                                                                 |
On-Site Rearing of Beneficial Predatory Mite Species $4,200 Richard Nathanson

Automated On-Farm Irrigation Water Diversion Gate $3,890 George Davis

Wiersema Dairy Agroforestry Project $5,000 Jim Wiersema

Fear and Loathing in the Potato Patch: Controlling Nematodes with Rape Seed Meal and Green Manures $9,910 John O'Connor

Systems Thinking in a Range Environment $5,000 Jay Black

Non-Irrigated Alfalfa Performance Trial, Benewah County, Idaho $3,500 Christina Crawford

Paradise Time Controlled Grazing $5,000 Mark Pratt

Economic Viability of Greenhouse Solarization $2,450 Larry Higgins

Squash Bug Management Through Introduction of Game Birds $2,740 Jill Kohler Eagle Organic Farms

Cereal Cover Crops for Weed Control in Organic and Conventional Dry Bean Production Systems $30,000 Albert Adjesiwo University of Idaho Prayusha Bhattacharai University of Idaho

Row Spacing Effect on Weed Suppression $530 Lee Griffiths

Biological Control in Idaho Alfalfa Seed Fields $5,000 Larry Sorenson Sorenson Farms

GRADUATE STUDENT GRANTS

<table>
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<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
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</thead>
<tbody>
<tr>
<td>GW23-256</td>
<td>Nematicide Development from Solanum sisymbriifolium for Sustainable Eradication of Globodera pallida in Idaho</td>
<td>$29,943</td>
<td>Louise-Marie Dandurand University of Idaho Lindsay Schulz University of Idaho</td>
</tr>
<tr>
<td>GW23-250</td>
<td>Cereal Cover Crops for Weed Control in Organic and Conventional Dry Bean Production Systems</td>
<td>$30,000</td>
<td>Albert Adjesiwo University of Idaho Prayusha Bhattacharai University of Idaho</td>
</tr>
<tr>
<td>GW21-222</td>
<td>Trap Crops and Crop Rotation for Eradication of the Pale Cyst Nematode in Idaho</td>
<td>$29,966</td>
<td>Louise-Marie Dandurand University of Idaho Paige Hickman University of Idaho</td>
</tr>
<tr>
<td>GW20-217</td>
<td>The effects of cover crops on soil arthropod communities in the Inland Pacific Northwest</td>
<td>$24,993</td>
<td>Dr. Sanford Eigenbrode University of Idaho Dane Elmgquist (PI: Eigenbrode) University of Idaho</td>
</tr>
</tbody>
</table>
GW20-206  Evaluating the effectiveness of mustard species and their concentrated extracts in reducing losses to wireworms in the Pacific Northwest, USA. $24,998  Dr. Arash Rashed  University of Idaho  Reed Findlay  University of Idaho  Atoosa Nikoukar/ PI Rashed  University of Idaho

ON FARM RESEARCH/PARTNERSHIP GRANTS

<table>
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<tr>
<th>Project #</th>
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</thead>
<tbody>
<tr>
<td>OW23-382</td>
<td>Precipitated Calcium Carbonate to Remediate Acidic Eastern Idaho Soils</td>
<td>$75,000</td>
<td>Dr. Jared Spackman  University of Idaho  Jared Gibbons  University of Idaho  Justin Hatch  University of Idaho  Tom Jacobsen  University of Idaho  Joseph Sagers  University of Idaho</td>
</tr>
<tr>
<td>OW15-032</td>
<td>Madison County Healthy Soil Initiative</td>
<td>$50,000</td>
<td>Robbie Taylor  Madison SWCD</td>
</tr>
<tr>
<td>OW13-017B</td>
<td>Reference strips and precision sensors for increased nitrogen use efficiency in wheat production</td>
<td>$1,961</td>
<td>Dr. Olga Walsh  University of Idaho</td>
</tr>
<tr>
<td>OW13-043</td>
<td>Extension of Local Food Production in Idaho Using High Tunnel Technology</td>
<td>$49,999</td>
<td>Dr. Stephen Love  University of Idaho</td>
</tr>
<tr>
<td>OW10-301</td>
<td>Using Aquaponics with Renewable Energy Resources to Create Sustainable Food Systems while Reducing Nutrient, Energy, and Water Costs</td>
<td>$50,000</td>
<td>Matt Johnson  Sustain Pro Management  Harry Ako  University of Hawaii</td>
</tr>
</tbody>
</table>

Total funding from the USDA SARE program to Idaho $5,744,533

For further information on projects, contact Western SARE at (406) 994-4789 or wsare@montana.edu. Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).