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 $310 million to more than 7,433 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, granteeproduced information products and other educational materials.

Puerto Rico

Project Highlight: Cover Crops Improve Soil in Plantain Crops

Cover crops bring many benefits to farming systems, from protecting the soil against erosion to suppressing weeds to improving yields and profitability through healthier soil. In Puerto Rico, a team of researchers, educators and service providers used a SARE grant to start bringing these benefits to one of the island’s main crops, the plantain.

Starting in 2013, the research team conducted on-farm experiments to identify cover crops species that could be intercropped with plantains to improve soil health. They focused on jack beans, sunnhemp and sorghum, planted as cover crops both individually and as mixes. The team collected soil samples to measure soil fertility, microbial activity and other indicators of soil health, and they made some important discoveries that should help Puerto Rico farmers make informed decisions about using cover crops. Jack beans established most successfully and showed the most promise overall, whereas rodents and heavy rains impacted the sorghum, and the sunnhemp performed well but was more susceptible to weather conditions than the jack beans.

Most importantly, the cover crop trials revealed an economic benefit. To achieve yields of high-quality plantains by market standards, no nematicides were needed and fungicide applications were reduced 78 percent—representing a cost savings to the farmer.

For more information on this project, see sare.org/projects, and search for project number FS13-271.

SARE in Puerto Rico

southern.sare.org/sare-in-your-state/puerto-rico

$1,200,643 in total funding

25 grant projects

(since 1988)

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

Total awards: **25 grants**

- 9 Farmer/Rancher
- 1 Graduate Student
- 3 On Farm Research/Partnership
- 4 Professional Development Program
- 8 Research and Education

Total funding: **$1,200,643**

- $83,633 Farmer/Rancher
- $10,000 Graduate Student
- $42,473 On Farm
- $158,684 Research/Partnership
- $905,853 Professional Development Program

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: southern.sare.org/sare-in-your-state/puerto-rico

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 southern.sare.org/state-pages/puerto rico to learn more.

Luis Mejia-Maymi
Ag Extension Svc, Univ Of Puerto Rico
(787) 832-4040 Ext: 3481
luis.mejia@upr.edu

For detailed information on SARE projects, go to www.SARE.org

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.
Puerto Rico has been awarded $1,210,643 grants to support 26 projects, including but not limited to, 8 research and/or education projects, 4 professional development projects and 9 producer-led projects. Puerto Rico 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>
| LS20-329  | Agroecosystem Sustainable Guides                                                                                                                                                                              | $41,040      | Silmarie Crespo  
ECO-Services  
Gabriela Medina  
Finca La Jiba |
| LS20-330  | Agro-Ecological Education for New Farmers in the Central Western Region of Puerto Rico                                                                                                                                 | $49,992      | Paula Paoli Garrido  
Plenitud PR  
Bryan Brunner Montes  
University of Puerto Rico, Mayagüez  
Owen Ingley  
Plenitud PR  
Samantha Lopez  
Plenitud PR  
Gina Malley Campos  
Plentitud PR  
Rebekah Sanchez Cruz  
Plentitud PR |
| LS14-263  | Multisectoral and Transdisciplinary Coalition to Spearhead the Development of a Cohesive Network of Local Limited-resources Urban Community Farmers for Sustainable Agriculture Using the Capital City of Puerto Rico as Case Study | $250,000     | Dr.Maria Calixta Ortiz  
Universidad Ana G. Méndez |
| LS10-231  | Weed management alternatives for organic coffee agroforestry systems of Puerto Rico                                                                                                                                 | $150,000     | Mariangie Ramos  
University of Puerto Rico at Utuado |
| LS08-212  | Integrating tropical legumes with condensed tannins into ruminant grass-based diets for sustainable production                                                                                                                                                   | $100,000     | Dr.Elide Valencia  
University of Puerto Rico, Mayaguez |
| LS04-162  | Developing legume shade trees for Sustainable coffee production in Puerto Rico                                                                                                                                                                              | $195,298     | Eduardo Schröder  
University of Puerto Rico |
| LS00-111  | Structures of Sustainability: A Regenerative Model for Community Agriculture Development                                                                                                                                                                     | $19,678      | Vivian Carro-Figueroa  
University of Puerto Rico Agric. Experiment Sta. |
| LS95-072  | Agronomic & Economic Benefits of Intercropping Bean with Banana                                                                                                                                                                                              | $99,845      | Li-chyuan Liu  
University of Puerto Rico, College of Agricultural Sciences |

### PROFESSIONAL DEVELOPMENT PROGRAM GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
### Soil Nutrient Management in Tropical Soils

**Project #**: ES20-152  
**Project Title**: Soil Nutrient Management in Tropical Soils  
**SARE Support**: $69,335  
**Project Leaders**:  
- Dr. Daniel Bair  
  University of Puerto Rico, Mayaguez  
- Dr. Miguel Muñoz  
  University of Puerto Rico, Mayaguez  
- Mario Rodriguez  
  USDA-NRCS Caribbean Area

### Agroforestry Management for Tropical and Subtropical Agroforestry Systems: Management guide and practical workshops

**Project #**: ES19-149  
**Project Title**: Agroforestry Management for Tropical and Subtropical Agroforestry Systems: Management guide and practical workshops  
**SARE Support**: $53,609  
**Project Leader**: Andre Sanfiorenzo

### Integrated Strategic Plan for Sustainable Agriculture

**Project #**: ES97-035  
**Project Title**: Integrated Strategic Plan for Sustainable Agriculture  
**SARE Support**: $25,740  
**Project Leader**: Hipólito O’Farrill-Nieves  
  University of Puerto Rico Agric. Ext. Service

### Alternative Sustainable Practices for Selected Crops in Puerto Rico

**Project #**: ES97-033  
**Project Title**: Alternative Sustainable Practices for Selected Crops in Puerto Rico  
**SARE Support**: $10,000  
**Project Leader**: Miguel F. Monroig  
  University of Puerto Rico

## FARMER/RANCHER GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| FS20-324  | Building Soil and Plant Health with Compost and Compost Teas                   | $12,443      | Gabriela Medina  
  Finca La Jiba                                        |
| FS17-298  | Weed Suppression by Compost Mulch in Plantains                                 | $8,436       | Reed Hepperly  
  Hepperly Enterprises                                    |
| FS13-271  | Cover Crops for Improving Recalcitrant Soil Organic Matter and Soil Biota Management in Plantain Production Systems in Puerto Rico | $10,000      | Duamed Colon-Carrion  
  Agro Tropical, Inc.                                     |
| FS07-213  | Recycling Mushroom Spent Compost                                              | $8,027       | Reed Hepperly  
  Hepperly Enterprises                                    |
| FS05-193  | Organic Farming in the Tropics with Legume Groundcover                         | $8,107       | Luis Miguel Rico                                    |
| FS03-172  | Puerto Rico Shade Grown Coffee Project                                        | $9,956       | Luis Miguel Rico                                    |
| FS99-095  | Breaking the Herbicide Habit: Integrating Cover Crops with Herbicide Application | $9,960       | Rebecca Perez-Rossello                              |
| FS99-098  | Demonstrating the Benefits of Agroforestry Practices on Family Farms          | $6,704       | Andre Sanfiorenzo                                   |
| FS95-028  | Improving Tropical Soils by Utilizing Organic Wastes                           | $10,000      | Andre Sanfiorenzo                                   |

## GRADUATE STUDENT GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| GS08-070  | The fate of the finca: Smallholders in the Hispanic Caribbean                 | $10,000      | Gregory Knapp  
  University of Texas at Austin  
  Katia R. Aviles-Vazquez  
  The University of Texas at Austin |

## ON FARM RESEARCH/PARTNERSHIP GRANTS
OS20-134  Case study for Heritage American Guinea Hogs in Puerto Rico  $12,549  Julie North
          N/A

OS07-033  Precious Indigenous Woods For Coffee Shade  $14,967  Jose Aponte
          El Caribe RC&D

OS05-027  Coffee Seedlings in Forestry Tubes  $14,957  Steven Welker
          USDA NRCS - El Atlantico RC&D

SUSTAINABLE COMMUNITY INNOVATION GRANTS

<table>
<thead>
<tr>
<th>Project #</th>
<th>Project Title</th>
<th>SARE Support</th>
<th>Project Leaders</th>
</tr>
</thead>
</table>
| CS05-038  | Puerto Rico PIG Project    | $10,000      | Steven Welker
          USDA NRCS - El Atlantico RC&D

Total funding from the USDA SARE program to Puerto Rico
$1,210,643

For further information on projects, contact Candace Pollock, Southern SARE public relations coordinator, at (770) 412-4786 or cpollock@uga.edu.
Sustainable Agriculture Research and Education (SARE) is funded by USDA’s National Institute of Food and Agriculture (NIFA).