

www.sare.org

# 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 \$2.2 million to more than 29 initiatives [1].

# 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...

# **South Dakota**

Project Highlight: High-Efficiency, Year-Round, Tropical Greenhouse

In South Dakota, soybeans, corn, wheat, sunflowers, and alfalfa come to mind when considering the state's number one industry: agriculture. However, at Wayward Springs Acres in Aurora, farmer and mechanical engineer Shannon Mutschelknaus is taking a different route—one that combines engineering with horticultural passion to cultivate exotic, tropical crops far from their native climates.

As a child, Mutschelknaus was fascinated by plants and began collecting seeds, experimenting with the growth of tropical and subtropical trees. Over the years, he successfully propagated rare species like soursop, mamey, *Garcinia humilis*, cherimoya, *Monstera deliciosa*, and passion fruit. Realizing the strong demand for tropical fruit trees—often in short supply due to hurricane damage—he saw an opportunity to scale up his efforts with support from an NCR-SARE Farmer Rancher grant.

With that support, Mutschelknaus designed and built a high-efficiency greenhouse featuring an insulated rear wall, passive solar heat, and an in-ground "climate battery" system. This innovative setup utilizes underground tubing to store and redistribute heat, maintaining a consistent temperature in the greenhouse throughout the day and night, regardless of the weather conditions in South Dakota. Today, he's not only growing leafy greens and tomatoes, but also rare fruits like loquats and cherimoya, offering a glimpse into what's possible with creativity and innovation. His greenhouse plans, complete with clear visuals and easy-to-follow instructions, are now available to help other growers explore this unique approach.

View Wayward Spring's greenhouse plans and instructional videos at sare.org/projects; search for project number FNC19-1185.

### **SARE in South Dakota**

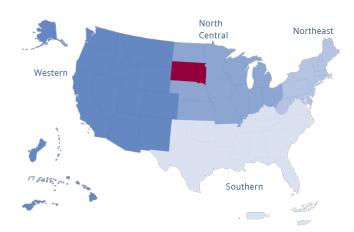
northcentral.sare.org/state-profiles/south-dakota/

# \$2,168,141 in total funding

#### 29 grant projects

(since 1988 [1])

For a complete list of South Dakota grant projects, go to projects.sare.org/state-fact-sheets/



### SARE in South Dakota, 2020–2025

This is a summary of recent SARE-funded activities and impacts in the state. To search all SARE projects visit projects.sare.org. For a list of all projects in South Dakota visit projects.sare.org/state-fact-sheets/.

### Grants awarded

## Total awards: 29 grants

- 5 Farmer/Rancher
- 6 Research and Education
- 1 Professional Development Program
- 5 On Farm Research/Partnership
- 4 Graduate Student
- 5 Youth Educator
- 3 PDP State Program [2]

## Total funding: \$2,168,141

\$83,730 Farmer/Rancher

\$1,312,685 Research and Education

\$89,805 Professional Development Program

\$171,495 On Farm Research/Partnership

\$72,603 Graduate Student

\$27,997 Youth Educator

\$409,826 PDP State Program [2]

[2] The Professional Development Program (PDP) State Program is a noncompetitive award that funds the activities of the state coordinator(s). See more below.

For a complete list of South Dakota awards, visit: projects.sare.org/state-fact-sheets/

## Farmer and rancher impacts

SARE grantees have reported the following impacts from their projects:

2,392 farmers participated in a SAREfunded project

446 farmers reported a change in knowlege, awareness, skills or attitude

102 farmers changed a practice



Learn about local impacts at: northcentral.sare.org/state-programs/south-dakota/

### **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 northcentral.sare.org/state-profiles/south-dakota/ to learn more.

Amanda Bachmann South Dakota State University (605) 773-8120 amanda.bachmann@sdstate.edu

David Karki South Dakota State University (605) 688-4211 david.karki@sdstate.edu





USDA National Institute of Food and Agriculture U.S. DEPARTMENT OF AGRICULTURE

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