

Four Corners Navajo Nation Sustainable Agriculture Demonstration Project

Lyle McNeal (Utah: Research & Education Grant Program)

Project Number: SW93-034

Title: Four Corners Navajo Nation Sustainable Agriculture Demonstration Project

Principal Investigator:

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Guard llamas with the
flock of Irvin and
Marjory Curley of
Ganado, Arizona.



Cooperators: A multidisciplinary team composed of specialists in economics, small business, rangelands, animal science, horticulture and energy from universities in Four Corners states and the Navajo Reservation

Navajo Cooperators:

Joe and Carol Benally
Pinon, Arizona

Raymond and Lena Benally
Keams Canyon, Arizona

Irvin and Marjory Curley
Ganado, Arizona

Leo and Sarah Natani
Shiprock, New Mexico

Joan Thompson and Ella Delgai
Ganado, Arizona

Ruth Watson and Lorena Noelson
Shonto, Arizona

SARE Grant: \$100,000

The Curley
flock



'Doc' McNeal checks a
Curley lamb.



Situation:

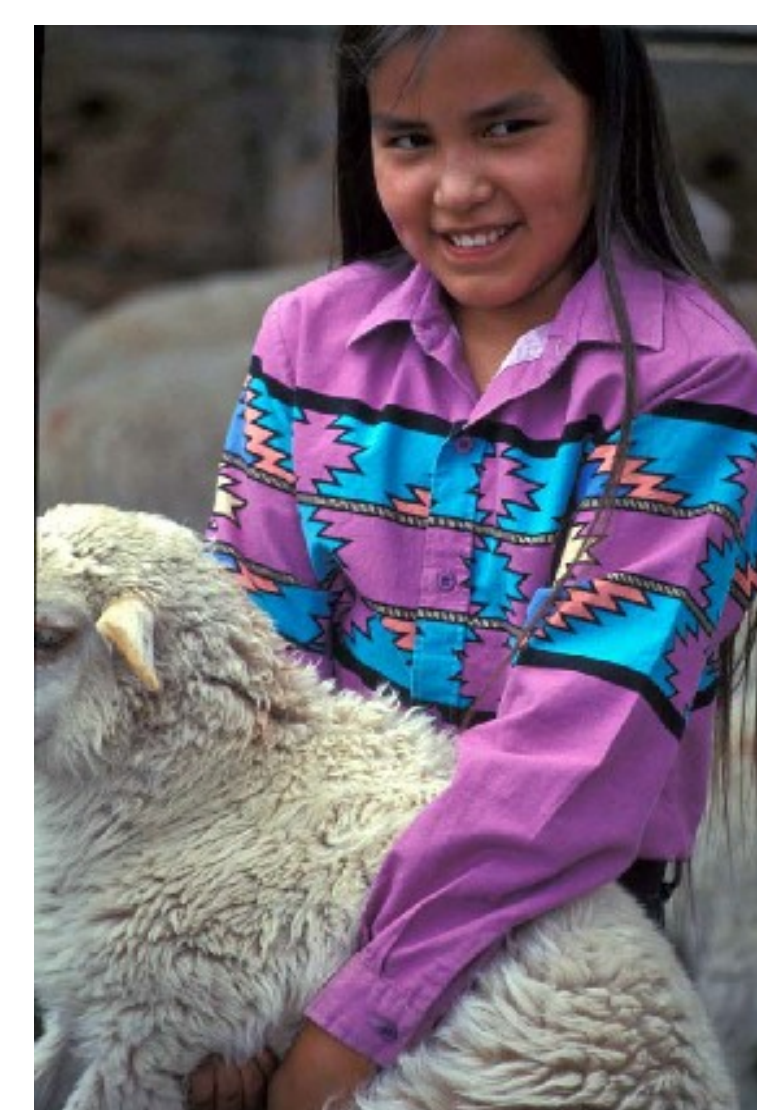
The Navajo Nation encompasses 27,000 square miles in northeast Arizona and parts of Utah and New Mexico. The largest tribal land in America, greater in area than 10 of the 50 states, it is a land of unparalleled beauty and grandeur.

Traditionally, the Navajo People, or Dine, were self-sustaining. They grazed livestock, mainly sheep and goats, for food and cultural values. They planted fields of corn, beans and squash. They hunted and gathered. Contact with Anglos in subsequent years often yielded a bitter harvest, diminishing cultural and traditional ways, including the near loss of the Navajo sheep industry owing to charges of rangeland degradation.

In recent years, several projects, including the Navajo Sheep Project, led by Dr. Lyle McNeal of Utah State University, have nourished hope. This Western SARE Research and Education Grant sought to build on that project's reinvigoration of the Dine agro-pastoral tradition on a nation scarce in water and arable land but abundant in kinship and culture.



Lyle McNeal chats with Irvin and Marjory
Curley about their truckload of wool.



The Curley's
daughter.

Objectives:

1. Develop and sustain improved socio-economic conditions for Navajo agro-pastoralists, maintaining cultural integrity by preserving the 'Navajo Lifeway'
2. Develop integrated systems to maximize output from agro-pastoral production practices while minimizing environmental impacts
3. Develop a whole-farm systems model for sustainable rural economic development
4. Provide on-site mentoring by a trained Navajo to develop entrepreneurial skills and cultivate leadership



The Navajo Nation.



Work goes on at the Curley garden.



Cooperator Sarah Natani hails from
Shiprock, New Mexico.

Actions:

Livestock

With assistance from project team scientists, cooperator families began a planning and calendaring process for managing their sheep and goat flocks. Grazing habits and performance of sheep and goats was evaluated, and guard llamas were placed with a demonstration flock of 950 ewes, lambs, does and kids.

Horticulture

Garden and horticultural materials (plants for food, dyeing wool, making baskets, medicine and ceremonies) were introduced, with nuclear and extended families involved in planning.

Entrepreneurship

Economic analyses were conducted with cooperator families, all of whom expressed a desire for self-sufficiency and returns sufficient to cover the costs of sustainable agro-pastoral practices.



Lyle McNeal, left, and Bill Varga, center, check a
lamb, assisted by cooperator Joe Benally of Pinon,
AZ.



Raymond Benally
and his grandson
prepare to help
catch and ear tag
the new lamb
crop.

Results:

Livestock

A pilot study under the direction of Colorado State University at Hesperus, CO found that returning to traditional migratory grazing practices (winter-spring high desert to summer-fall mountain grazing) benefited the health and well-being of sheep and goats.

Other benefits demonstrated in the project:

- The value of multi-species grazing
- Portable corrals for nighttime bedding to prevent trampling from trailing
- Portable water troughs to reduce animal stress and even out grazing

Navajo grazers:

- Improved animal reproduction efficiency
- Cultivated an eye for culling sheep
- Improved breeding strategies
- Gained new skills in using llamas as guardian animals

Several livestock fact sheets were printed under the auspices of the Western SARE grant:

- Dystocia (Lambing Difficulty)
- The Basics of Saving Newborn Lambs
- Livestock Water Supplies
- Flock Guarding Llamas
- Wool Grading and Evaluation
- Dealing with Drought



Lena and Rachel Benally of Keams
Canyon, Arizona spin yarn from wool.

Horticulture

Navajo cooperators:

- Expanded planting of indigenous varieties of corn, potatoes, squash and melons
- Planted shade and fruit trees around homes for food and windbreaks
- Seeded buffalo grass to control dust
- Installed rain gutters and downspouts for natural water harvest

Entrepreneurship

- One family initiated a value-added wool-processing endeavor, including a mail order catalog that described various types of Navajo food and animal products, including yarns and Navajo rugs.
- Another cooperator family initiated a therapeutic bear sewing project employing six Navajo women in a renovated stone building at the cooperator's home.
- A cooperator daughter, recently graduated from high school, received business training to gain expertise to oversee entrepreneurial ventures.
- Surplus computers were acquired and training conducted.

Potential Benefits:

In addition to improved livestock, cropping and entrepreneurship, this project created:

- A sense of pride and empowerment for cooperator families serving as models
- A bond of trust with Anglos and the universities and programs they represent
- Increased responsibility toward land and livestock stewardship
- A rediscovery of traditional cultivation techniques and plant varieties with functional and cultural values
- Water harvesting and plantings for improving home-site environments