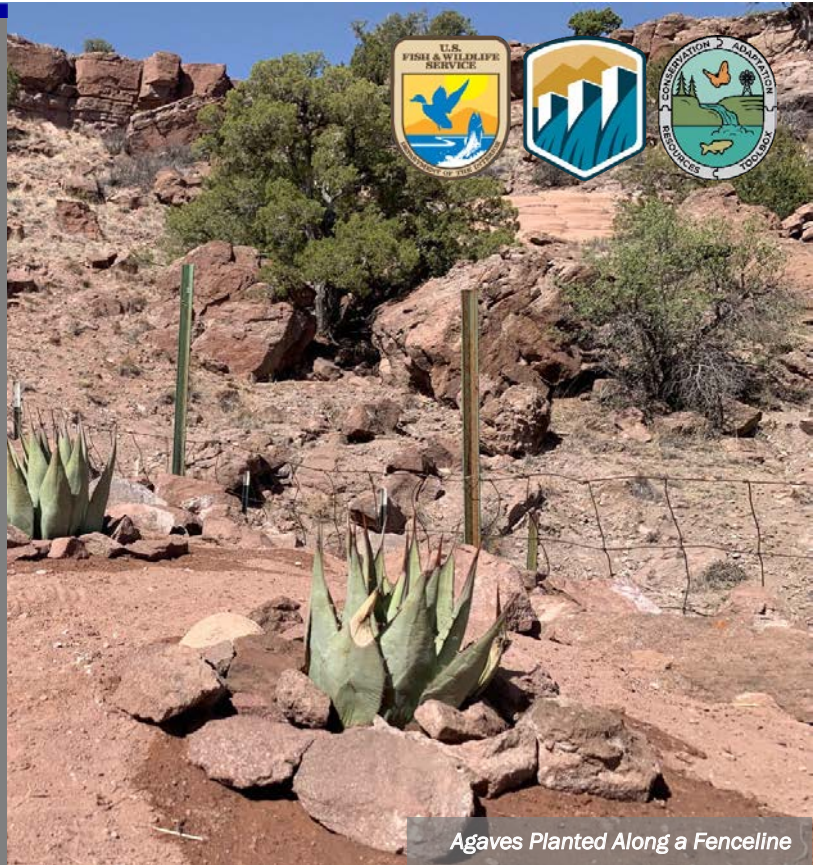


COMMUNITY ENGAGEMENT AND EDUCATION

Cultivating Agave Using Regenerative and Indigenous Methods



Located in Northern New Mexico, Chelenzo Farms applies soil health and agroecology principles while cultivating agave and other native plants. Agave nectar is a food source for Mexican Long-nosed bats (*Leptonycteris nivalis*), important pollinators that help fertilize the desert ecosystem. The plants use water efficiently because they utilize the crassulacean acid metabolism (CAM) process in which they open their stomata during cooler nighttime temperatures to minimize water loss. Chelenzo Farms is cultivating a permaculture food forest of CAM succulents to increase drought-adapted plant populations and plant diversity, promoting regenerative agriculture and community engagement in the process.



KEY ISSUES ADDRESSED

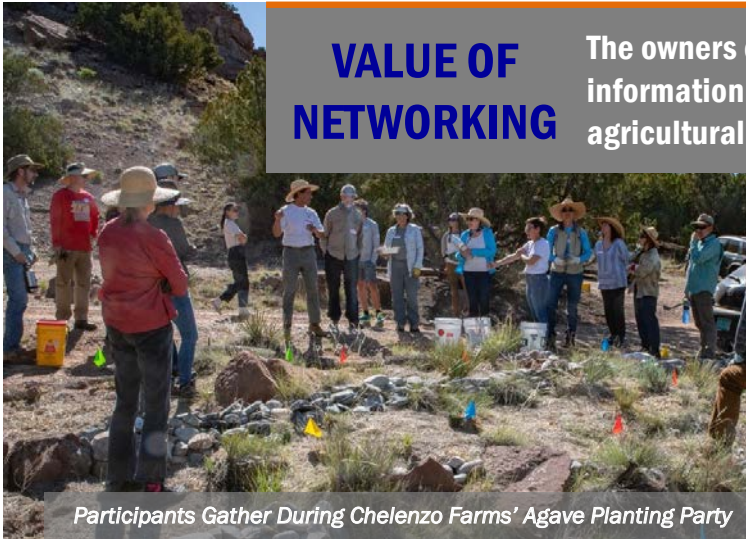
A 23-year drought in the Southwest has made water conservation more important than ever for farmers and ranchers. Agricultural industrialization has increased farm productivity, but such methods can degrade soils and reduce plant diversity. Monoculture and the use of chemical fertilizers and pesticides may increase crop yields in the short term but negatively impact natural soil microorganisms over time. Drought-resistant plants and traditional water harvesting structures have helped Indigenous groups sustainably farm an arid landscape for centuries, but education efforts are necessary to responsibly disseminate this traditional knowledge to agricultural producers and the public.

PROJECT GOALS

- Cultivate a variety of native drought-resistant plants to increase biodiversity, improve soil health, and restore the local ecosystem
- Elevate Indigenous Knowledge (IK) and integrate IK into agricultural practices at Chelenzo Farms
- Educate producers on native plants, IK, and the value of sustainable production systems

VALUE OF NETWORKING

The owners of Chelenzo Farms value a mutual exchange of information and have established relationships across agricultural, cultural, and artistic disciplines.



Participants Gather During Chelenzo Farms' Agave Planting Party

PROJECT HIGHLIGHTS

Regenerative Methods: Chelenzo Farms grows a variety of slow-growing, drought-resistant plants such as agave, cacti, cholla, yucca, and desert spoon. The farm is committed to allowing at least half of agave plants to flower to support pollinators. Rather than applying chemical fertilizer, they use natural amendments such as inoculants to supplement soil nutrients and promote plant growth.

Community Engagement and Education: Chelenzo Farms hosts educational workshops to teach regenerative farming practices to producers and the public. Past workshops covered water harvesting techniques, Johnson-Su bioreactors, and soil health. At the Agave Planting Party in June 2023, volunteers planted 460 succulents, including 300 agaves, and learned more about succulents and the use of inoculants.

Indigenous Agriculture as Art: The Endangered Species Coalition sponsored the creation of two murals at the farm. The addition of these murals is symbolic of what Chelenzo Farms hopes to achieve: a greening of the landscape by pairing soil science with the art of Indigenous agriculture.

Collaborators

- Chelenzo Farms
- Cruces Creatives
- Endangered Species Coalition
- See online for full list of collaborators

CART Author: Jack Carter, University of Oklahoma, October 2023.
Photos courtesy of Chelenzo Farms
For more information on CART, contact Genevieve Johnson (gjohnson@usbr.gov) or Karlee Jewell (karlee.jewell@fws.gov).

Visit CART:



LESSONS LEARNED

Chelenzo Farms uses Johnson-Su bioreactors to create the natural amendments, but commercial organic inoculants are also available. Inoculation at the time of planting is most important, but follow-up applications, typically done once per year, can be beneficial.

Volunteer partnerships are critical to the success of the farm. Chelenzo Farms utilizes both workshop volunteers, as well as Worldwide Opportunities on Organic Farms (WWOOF) volunteers to complete projects and daily operations. Participants work for about 25 hours per week in exchange for meals and lodging.

Grants are a valuable source of funding for regenerative agriculture projects, but the application process can be challenging and time-intensive for producers. Chelenzo Farms received the Western SARE grant, which supports sustainable agriculture projects that conduct both research and outreach. Western SARE grants are open to farmers, ranchers, and research scientists. The Western SARE website contains resources to help producers through the grant writing process.

NEXT STEPS

- Work with New Mexico State University's Agricultural Science Center to implement semicircular buffer strips in a new field containing various CAM succulents
- Construct Zuni bowls, one-rock dams, and a retention pond to improve water management on the farm
- Continue developing a permaculture food forest

For more information on this project, contact Lorenzo Dominguez: lorenzo@haciendadominguez.com



Murals by Mexican Muralist Pola "HOKZYN" Martinez