University of California

Sustainable Agriculture Research and Education Program (UC SAREP)

2021-2022 Sustainable Agriculture and Food Systems Competitive Grants Program

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Building capacity for implementation of soil health practices by small-scale, socially disadvantaged farmers in Fresno County

Final Report

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Location: Fresno County

Proposal Category: Education & Outreach

Priority Area: Supporting Farmers & Ranchers

Commodities addressed: Diversified vegetables, Asian specialty vegetables and herbs, small-acreage fruits

Total funds requested: $7,000

I. Objectives

1. Goal: **Increase the number of farmers who are able to implement the healthy soils practice of applying compost on their farm.**
Objective: Our program will purchase a front loader to complement our existing compost spreader for our grower clientele to borrow when needed. This will increase access to HSP grant funding for small-scale socially disadvantaged diversified farmers in Fresno County to apply compost to their land.

2. Goal: **Train farmers on safe operation and maintenance of equipment needed to apply compost**
Objective: Our program will organize trainings on the use of equipment required to spread compost. To ensure safe and timely use of equipment, and to increase the longevity of the equipment, training will include the establishment of agreed-upon guidelines for use.

3. Goal: **Increase soil health on small-scale diversified farms.**
Objective: Being able to apply compost will help increase soil health on diversified vegetable farms. To measure this, we will monitor the impact of applying compost on soil health indicators in conjunction with required soil sampling for HSP incentives grants and share results with participating farmers.

II. Summary (500 words or less)

The goal of this project was to address barriers in equipment access for implementation of climate smart agriculture and healthy soils practices on small-scale, diversified farms operated by socially disadvantaged farmers. Capital to purchase or rent new equipment is a barrier to adoption of soil health practices for limited-resource growers. Incentives funding based on acreage may not always provide sufficient capital for small-acreage farms to purchase or rent equipment needed to manage biological inputs such as compost, cover crops, and mulch, and providers of contracted services may not prioritize small-scale farms during times of peak seasonal demand or find the complexity of diversified farms difficult to work with, for example with inputs applied to different sections of a farm at different times of the year.

To help overcome these barriers, grant funds were combined with matching funds from the Berkeley Food Institute and a private donor to purchase a front loader that will be available to small-scale, socially disadvantaged farmers for loading and spreading compost in the Fresno area. Safety requirements for transportation, storage, and operation as well as required institutional equipment purchasing procedures were identified, beginning a process that can serve as a foundation for growing a collection of shared tools and equipment to support small-scale farmers in implementing climate smart on-farm conservation practices. Staff were trained in safety procedures and front loader operation, building capacity for technical assistance for compost application on small-scale diversified farms. The front loader was operated to load compost for spreading on

three initial farms, with training and increased equipment sharing planned for future rounds of incentives projects to improve soil health and carbon storage.

III. Specific Results

Objective 1: A front loader was purchased and made available to small-scale, diversified, socially disadvantaged farmers applying compost to their farms through the Healthy Soils Program Incentives projects. We experienced substantial delays in locating a front loader of the appropriate size and capacity for an affordable price. We had hoped to purchase a lightly used front loader used farm equipment in good condition. With the $7,000 from the SAREP small grants program and up to $3,000 committed in matching funds, we were planning to purchase a used front loader for around $10,000. However, we found that prices were much higher than usual, and availability of used equipment for purchase was very limited due to COVID-19 related supply chain disruptions, the resulting scarcity of materials, and economic uncertainty. Normally when farmers trade in lightly used equipment for newer models, there is a good inventory in the Fresno area of high-quality used equipment that is more affordable than new equipment, but this did not occur in 2021. This caused us to re-evaluate the need for matching funds and seek increased funding to cover the higher cost of purchase.

Matching funds were provided by the Berkeley Food Institute (BFI) and a private donor, allowing us to purchase a front loader in good condition at current prices. A Kubota front loader was finally located in January 2022, for a total cost of $29,919.83, and the purchasing process was initiated. In early March 2022, we were notified by UC Davis Supply Chain Management Procurement and Contracting Services that, as a single-purchase transaction between $10,000 and $250,000, this purchase fell within the Small Business First policy requiring us to purchase from a certified small business. This caused additional delays. While the business we were purchasing from, Fresno Tractor, did meet the criteria for a small business, staff at Fresno Tractor did not have capacity to complete the paperwork needed to obtain a small business certification and become registered in the UC Davis purchasing system under the Small Business First program. After much discussion, we were able to submit a waiver of the Small Business First program, which was approved on April 1, 2022. The front loader was then picked up two weeks later in mid-April.

Objective 2: We researched safety training requirements and additional safety equipment needed for transportation, storage, and use of the front loader. This process included consultation with UC ANR Risk Services, farm operations staff at the Kearney Agricultural Research and Extension Center (KARE) in Parlier, and farmers familiar with front loader operation and safety. We also used matching funds to purchase a flatbed trailer to transport the front loader, tie-downs, and locks for secure storage and transportation. Small farms staff involved with transportation and use of the front loader were trained 1) by KARE staff on proper storage, unloading and loading from the flatbed trailer, and trailer hookups; and 2) by a representative of the African American Farmers of California (AAFC) on safe front loader operation. A set of initial training materials was gathered including:

- ANR Risk Services Safety Notes (General Tractor Safety, Hydraulics Safety, and Pinch Point Safety Hazards)
- A front end loader safety video from SafetyVideos.com recommended by ANR Risk Services
- The Kubota operational manual for the front loader

Our original workplan had been to develop training materials in summer – fall 2021 and conduct a training in October 2021 before compost applications began for the Healthy Soils Incentives projects. Due to the delays in locating and purchasing the front loader, we were not able to organize a larger training of multiple farmers. Most had already completed their compost application for the spring and were already busy with production in April – May 2022. However, we organized a demonstration and training of small farms staff by the AAFC on one participating farm in May 2022, combined with compost application using the front loader to load compost into the compost spreader.

Objective 3: Since the process of identifying matching funds, locating a front loader, obtaining a waiver, and going through the purchasing system took much longer than expected, the front loader was not ready for use by farmers until near the end of the season of compost application for the Healthy Soils Program incentives projects. Most farmers had already applied compost by March 2022. However, there were three farmers still needing to apply compost, and the front loader was used to assist with compost application on these three farms. In each case, the front loader was operated either by small farms staff who had been fully trained, or by the farmer who had been required to review the ANR Safety Notes, video, and manual. Soil sampling for organic matter was conducted as specified for the Healthy Soils Program incentives projects; however, this was conducted before purchase of the front loader due to the extensive delays in the purchasing process. These data are currently being analyzed, as ongoing required sampling continues, to better understand the effect of multiple years of compost application on soil organic matter content.

IV. **Dissemination of Findings**

Now that the front loader has been purchased, safety procedures are in place, and staff are trained on transportation and operation, future plans include development of additional training materials relevant to small-scale, socially disadvantaged farmers and organizing in-person trainings. Training materials will be developed in English, Hmong and Spanish as originally planned, and we will conduct a training on front loader safety and operation at KARE before the next round of compost applications on Healthy Soils Program Incentives projects we are assisting with. During this next round, farmers will be able to borrow the loader once they have completed all of the required training. Also, once all of the Healthy Soils Program incentives projects in the pilot group of farmers have been completed, data on soil organic matter over the life of those projects will be compiled and disseminated.

V. **Benefits/Impacts on Agriculture and/or Food Systems**

This project has enhanced the technical assistance services and resources available to small-scale, socially disadvantaged farmers implementing soil health practices. Through the addition of a front loader to the small farms equipment lending library at KARE, limited-resource farmers receiving incentives funding for soil health practices no longer have to rely on renting a front loader or contracting private services to load and spread compost. This allows the small farms technical assistance team to provide all the equipment needed to schedule compost loading and spreading at the farmer's convenience, while greatly reducing the cost of spreading compost.

A side benefit of this project has been to learn the processes of the UC Davis purchasing system for farm equipment over $10,000 and subject to the Small Business First policy. In the future, we will be better able to navigate this system, locate appropriate businesses to source from, and work with small businesses to complete the certification and be entered in the system. Should this or other programs purchase additional farm equipment for an equipment sharing or lending program, this process is essential to understand.

VII. **Impact on Target Audience**

A. Number of adults reached - 6

Gender		Ethnicity		Race			
Man/Boy	4	Hispanic/Latino		American Indian/Alaska Native		More than one race	
Woman/Girl	2	Not Hispanic/Latino	6	Asian	6	Race not listed	
Nonbinary		Prefer not to state		Black or African American		Prefer not to state	
Gender identity not listed				Native Hawaiian/Pacific Islander			
Prefer not to state				White			