

**CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE
2017 Healthy Soils Program Demonstration Projects
Applications Submitted to CDFA**

10/16/2017

* The 2017 HSP Demonstration Projects application information was extracted from the application system as submitted, therefore, CDFA cannot guarantee accuracy of the information. **Project sites located in disadvantaged communities (DACs) were determined using CalEnviroScreen 3.0.

Applicant Organization	Project Description	County	Funds requested	Located in DACs
The University of California, Davis	This project will implement cover crop and compost application in processing tomatoes - feed corn crop rotation at the Russell Ranch Sustainable Agriculture Facility in Davis, CA. Soil health and GHG emissions will be evaluated on fields where compost, winter cover crop, and cover crops plus compost to be implemented. Compost treatments will also be implemented at an adjacent commercial farm and compared with Russell Ranch results. A comprehensive soil health assessment tool developed for N.E. soils will be tested for use in CA soils and paired with the development of an economic model to convey results in a manner useful for CA growers. Results will be shared via social media, blog posts, a webinar, and at seven on-farm field days/workshops.	Yolo	\$ 250,000.00	No
Tara Firma Farms Foundation	This project will accelerate our establishment on the local scene as a leading food purveyor, farm education center, and land stewardship model. As we engage our community in the process of building soil and biomass, we will increase our capacity to grow more food, retain more nutrients, and lessen impact from storms. As we document our journey with data, photos, & video, we will make it accessible on our website, in addition to bringing it to farmer forums throughout the state. We will host an annual "Tara Firma Terra Fest" to expose community members to all aspects of our research findings, and share resources on how they can apply what they learn.	Sonoma	\$ 206,161.00	No
California Marine Sanctuary Foundation	We will seek to improve soil health and reduce greenhouse gases by composting and planting hedgerows on two ranches in the Elkhorn Slough watershed. We will monitor changes in plant dynamics and soil organic matter and conduct an economic analysis for forage production. Demonstration of these practices to encourage broader adoption regionally will be pursued through field tours, highlights in rancher-related newsletters and websites, and in-person presentations to rancher groups. The Marine Sanctuary sees the HSP as an opportunity to further develop and enrich its attempts to constructively engage farmers with win-win practices that improve marine health.	Monterey	\$ 98,830.00	No
The University of California, Davis	Cover cropping has potential to increase soil C and productivity while reducing greenhouse gas emissions. In California, however, only 5.6% of almond growers use a winter soil cover. Our goal is to demonstrate cover cropping management for almond producers to 1) sequester C and reduce GHG emissions, 2) build healthy soils to enhance orchard resilience to climate change, and 3) improve overall sustainability and productivity of almond. We also propose to demonstrate the impact of winter cover cropping strategies on the implications for resource use efficiency of almond production and host outreach events to extend information to growers.	Tehama Merced	\$ 249,858.00	No

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Ananda Valley Farm	Using wood chips in fields can sequester more carbon, reduce GHG emissions and increase mycorrhizal fungi which can fix carbon in the soil for decades or millennia. Wood chips help increase earthworm populations which bring carbon to lower depths in soil where it will be stable for longer periods of time than just the normal plow depth of compost applications. However, using woodchips directly in agricultural fields needs to be useful and practical for a farm while not reducing yields. Wood chips in the soil tie-up nitrogen which lowers yields. This study aims to establish guidelines for using wood chips with additional fertilizer to overcome the nitrogen tie-up, while increasing soil productivity.	San Mateo	\$ 88,945.00	No
Cal Poly Pomona Foundation, Inc.	The Cal Poly Pomona three-year demonstration project aims to show the benefits and costs of building soil health via compost application and incorporating cover crops between cash crop plantings. We will conduct this demonstration project on a field where we are simultaneously transitioning to certified organic production and switching from hay production to vegetable crops. Many farmers throughout California are looking for higher value crops as the costs of production increases. Successful organic production depends on building soil health via practices like cover crop incorporation and compost application. We will have yearly farm field-days throughout the project for farmers to see the benefits and challenges of implementing these two practices.	Los Angeles	\$ 62,520.00	Yes
Yolo County Resource Conservation District	The project will demonstrate compost application on a cattle ranch in Winters, California. The Yolo County Resource Conservation District (RCD) will work with Westside Spreading LLC, Point Blue Conservation Science and CASA Systems 2100, LLC to monitor soil organic carbon and greenhouse gas (GHG) emissions as well as overall improvements to soil health and forage production. The project team will collaborate closely with the landowner, Westside Spreading LLC and range management experts to develop cost-benefit data for regional/statewide adoption and incentives programming. The RCD will lead an outreach program with support from the California Cattlemen's Association, California Rangeland Conservation Coalition, CalCAN and others to share project information with the ranching and conservation community via a project webpage and engaging on-site compost demonstrations and field trial tours.	Yolo	\$ 249,178.00	No
The University of California, Division of Agriculture and Natural Resources	Whole orchard recycling (WOR) incorporates orchard removal waste on-site, without burning or moving the debris to another location. Slow adoption of WOR stems from concerns that incorporating a large volume of high carbon (C) to nitrogen (N) wood grindings before replanting could negatively affect tree nutrition. We project that the large input of C by WOR will increase soil N retention and reduce nitrous oxide (N2O) emissions. This project will monitor N2O and carbon dioxide (CO2) emissions, soil C and N dynamics and soil health indicators for nearly three years after a one-time WOR mulching rate of 60 T/ac. Several field days will allow growers to view the impact of WOR on soil structure and tree orchard growth.	Fresno	\$ 250,000.00	Yes

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National Audubon Society	Our project will plant a Cover Crop and install a Riparian Forest Buffer at River Garden Farms in Yolo County. To evaluate the effectiveness of the cover crop, we will monitor soil organic matter and GHG emissions before and during the three-year period of practice implementation. We also measure multiple benefits, such as nutrient concentrations, soil moisture retention capacity and bird use of the cover crop each year. We will share the benefits of the cover crop and riparian forest buffer and other wildlife-friendly farming practices to a minimum of 120 farmers through on-farm Field Days hosted at River Garden Farms.	Yolo	\$ 99,243.00	No
The University of California, Division of Agriculture and Natural Resources	This project will investigate the influence of cover crops, compost, and reduced tillage on soil health in an irrigated crop rotation. The goal is to accurately estimate the soil practices' environmental and agronomic benefits specific to the region and increase land managers' knowledge and practice adoption. Data include several soil health and agronomic production criteria. The study will be conducted at the UC ANR Intermountain Research and Extension Center with local crops. We predict substantial outreach interest in compost, cover crops, and reduced tillage due to a large acreage shift to organic production in the region. For this reason, the project is evaluating treatments under two production methods: conventional and organic. The inclusion of both methods is needed to accurately estimate changes in soil and crop yield in both systems and it provides the unique opportunity to compare changes in soil health in both systems.	Siskiyou	\$ 165,000.00	No
Center for Land-Based Learning	This project uses an intensive cover crop regime to improve soil structure and nutrient availability at the Cannery Urban Farm, which was previously an industrial site. This will help to increase crop productivity and water percolation capacity of the soil. Currently, the soil has a hardpan at the 0 to 18" layer that is preventing water percolation leading to accumulation of salts. This has led to soil quality deterioration and significantly reduced plant growth. This project will demonstrate how the common occurrence of compacted and unimproved urban and near urban soils can be rendered productive through adopting practices that promote soil health.	Yolo	\$ 80,003.00	No
The McConnell Foundation	Much emphasis has been placed on maintaining and improving soil health via carbon sequestration in recent years. California rangelands may play an important role in sequestering carbon dioxide and slowing climate change through effective land restoration practices and management. The McConnell Foundation envisions the Ross Ranch Carbon Sequestration Demonstration Site as a "learning laboratory" for the northern Sacramento Valley where the applicability of soil management practices can be tested. In turn, the installation and management costs and benefits to soil health, forage production, and ecological function can be disseminated at the local, regional, and statewide scale. The success of the project will be measured by increases in soil organic matter, agricultural and ecological co-benefits, the adoption of soil management practices and new certified compost facilities within the region, and increased participation in the CDFA Healthy Soils Program.	Shasta	\$ 62,452.00	No

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Resource Conservation District of Santa Cruz County	This demonstration project will showcase a variety of conservation management practices used in a 140ac organic multi-crop farm. Conservation practices include hedgerows, grassed filter strips, native grass pastures, riparian buffers, crop rotation, and cover crops. These practices provide multiple benefits to the environment and to the agricultural operation. The project will support implementation of cover crops and hedgerow plantings on a 3-acre parcel where these practices have not been applied before. The RCD of Santa Cruz County and the Agriculture and Land-based Training Association (ALBA) will partner with the farmer to design and host a series of field tours around the farm targeting 40 new growers per year during three years, and focusing on different soil conservation practices, including those supported by this award.	Santa Cruz	\$ 98,628.00	No
The University of California, Davis	The project is to demonstrate implementation of composting, cover cropping, and reduced tillage and monitor changes in soil properties and greenhouse gas (GHG) emissions associated with implementation of these practices at three UC ANR-coordinated farm demonstration evaluations in California. Additionally, the project will develop and implement an outreach program to disseminate information and engage stakeholders in practices that improve agricultural sustainability through soil management.	Merced Sutter San Joaquin	\$ 249,257.00	No
Sonoma Resource Conservation District	The Project will consist of establishing a series of demonstration field plots as the Saralee's Vineyard in Windsor, CA, operated by Jackson Family Wines. Thirty-six field plots will be set up in two vineyard blocks located on the property in order to collect soil data to assess the effects of compost application and different traditional tillage methods (no-till, alternate-row till, and full tillage) on soil health and soil carbon content.	Sonoma	\$ 99,576.00	No
Resource Conservation District of Greater San Diego County	This Healthy Soils project will demonstrate that the implementation of compost application, mulching, and cover crops in San Diego (SD) County can positively impact soil quality, crop yields, cost savings, and the environment— even on a small scale. While improving soil health and crop yields, these practices also potentially reduce greenhouse gas emissions by up to 10 carbon dioxide equivalents per acre per decade, leading to potential solutions for agricultural sectors in our environmental crisis. This project is situated at the Tijuana River Valley Community Garden (San Diego, CA) and targets local farmers in SD County, which is home to the largest number of small (<10-acre) farms in the United States. We will use this demonstration project to highlight the environmental and economic co-benefits of carbon farming practices through field days for local farmers and project dissemination on local and state levels.	San Diego	\$ 248,756.00	No
Santa Clara Unified	SCUSD Farm, 11 acres dedicated to grow healthy organic produce for the Santa Clara School District. Conversion of the farm from conventional to organic, implementing sustainable farming practices such as cover cropping, low till, no till, wind breaks, composting, beneficials, Field borders, hedgerow planting. The project will also include educational opportunities for middle school students, high school students, college students, graduate students and the community.	Santa Clara	\$ 50,000.00	No

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University of California ANR	This project will be the first to demonstrate the use of food waste compost, and comparisons with livestock /green waste compost, on California rangeland. Located at the Sierra Foothill Research and Extension Center (SFREC), the project builds on a compost greenhouse gas emission study funded by California's 4th Assessment effort, allowing us to follow the full life cycle of the feed stocks. We use a rigorous statistical and sampling design to document impacts of compost amendments on healthy soil indicators including soil carbon (C) and nitrogen cycling, forage production, and water holding capacity. Our outreach design includes a participatory action research framework and utilizes a stakeholder advisory committee to co-develop outreach and evaluation activities. This work will foster important partnerships with diverse stakeholders and strongly tie to the UC Carbon Neutrality Initiative, placing this work in a larger context of climate change mitigation.	Yuba	\$ 247,193.00	No
Placer County Resource Conservation District	This project will plant a foothills irrigated pasture mix (cover crop) for the purpose of establishing vegetative cover and providing livestock forage. The control plots will be existing "native" irrigated pasture. The treatments will include three different seeding methods: broadcast, No-Till and Reduced Till. All plots will be managed by the respective landowners as irrigated pasture throughout the growing season (April to October). Each site will contain three Control/Treatment pairs for each of the three seeding methods. The project includes a total of four sites, which are private ranches in Placer and Nevada Counties located at 1000-feet, 1600-feet, 2100-feet, and 2700-feet in elevation.	Placer, Nevada	\$ 249,958.00	No
Cal Poly Corporation	This project aims at determining the effects of compost application and no-till on soil C, greenhouse gas emissions and other soil health parameters relevant to the production of wine grapes (<i>Vitis vinifera</i>) on the California Central Coast. The effects of compost and no-till will be studied in two separate trials, at two vineyards located in the Paso Robles AVA. Changes on soil C, GHG emissions, soil physical properties, crop yield and quality will be evaluated before and after practice implementation at each of the trials. Results will be disseminated through on-farm workshops, as well as through four other external professional presentations and workshops. Current practices and potential for adoption will also be evaluated through outreach activities.	San Luis Obispo	\$ 249,026.00	No
The University of California, Riverside	The project will demonstrate the value of digestate for developing healthy soils that reduce greenhouse gas emissions in a no-till environment. Three digestate products will be applied for three years to an alfalfa field that will be overseeded with winter rye. Treatments will include a control, solid digestate, liquid (10 percent solids) digestate, and aerobically composted solid digestate. Greenhouse gas emissions will be measured directly on a weekly basis. We will hold regular field days at the application site, presentations to alfalfa growers and University of California Cooperative Extension Workgroups, as well as through publications and social media.	Riverside	\$ 247,571.00	Yes

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West Coast Waste, Inc.	The Project will showcase and assess the benefits of compost and mulch application to tree crops on five acres of almond orchards in Madera County. Each acre will be divided into three equal sections for each treatment: control, compost, and mulch. Compost will be applied at a thickness of twelve inches, two times per year to a total of roughly 1.67 acres. Mulch will be applied at the same thickness, frequency, and acreage. The control plots will have neither compost nor mulch applied. All soil health assessments and greenhouse gas emission analyses will be performed by the partner, the University of California, Davis (UCD). UCD will also train local staff on the proper collection of soil and air samples. The Ad Factory, a local marketing firm, will perform all outreach and education responsibilities. The Ad Factory will produce and distribute all outreach materials, such as flyers and brochures, to the target communities.	Madera	\$ 249,646.00	No
The University of California, Davis	Annual crop productions in California provide 40% of the fresh produce in the country as well as several other crops of considerable economic importance such as alfalfa, cotton, and silage corn. However, the sustainability of these production systems is being threatened by soil degradation, water shortage, high labor and fuel/energy costs, and environmental contamination. Conservation management practices such as reduced till, cover crop and compost management are able to address these concerns and to provide benefits to the production systems. We will use replicated, randomized field comparisons to demonstrate the influence these innovative practices may have on soil health, GHG emissions and crop yields over time and it will provide an ambitious outreach program to increase awareness and adoption.	Fresno	\$ 250,000.00	No
Pauma Band of Luiseno Indians	The Pauma Farms Demonstration Project engages a dynamic partnership to transition 35 acres of mechanically cultivated row crops toward a carbon-friendly, no till orchard. The project will demonstrate to at least 120 farmers how cover cropping can be used to manage invasive weed pressure, eliminate the use of herbicides, increase soil organic matter, and reduce farm management costs. Through conscientious monitoring by UC Riverside's Botany Department, the project will also provide quality data and analysis on the role no-till and cover cropping can play in reducing greenhouse gas emissions. In 2019, a "Carbon-Sink Farming Convergence" will bring farmers, tribal representatives and other stakeholders to educate and mobilize active participants in the carbon-friendly farming movement. Impact will be further amplified through ongoing outreach efforts by the Intertribal Agriculture Council, Carbon Cycle Institute, Rural Coalition and Mission Resource Conservation District.	San Diego	\$ 250,000.00	No

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Sonoma Resource Conservation District	Sonoma Resource Conservation District (RCD) and Sonoma Mountain Institute (SMI) will demonstrate carbon sequestration benefits of compost application on grassland to at least 120 ranchers and farmers through demonstration field days. Project activities will take place on SMI's Moon Ranch, where SMI manages cattle grazing with a high density, short duration grazing regime. Soil tests from compost application and Control fields will be analyzed to compare soil organic matter at the site's two different soil types as well as different slopes. Additional expected compost application benefits include improving soil quality and fertility, net primary productivity, forage production, and soil water holding capacity. Achieving impacts of compost application adoption rate increases through demonstrations will be complemented by ongoing carbon farming work Sonoma RCD and partners carry out with local ranchers and farmers.	Sonoma	\$ 85,353.00	No
Community Environmental Council	This project assesses the feasibility of compost application on grazed rangeland, examining local, regional, and statewide opportunities for it to increase soil health and to mitigate greenhouse gas emissions. It addresses carbon farming's potential to scale-up on the Ted Chamberlin Ranch, across Santa Barbara County, and throughout California. Led by the Ted Chamberlin Ranch, the Cachuma Resource Conservation District, and the Community Environmental Council, this project has a large and diverse set of partners. Together, we will integrate compost application into a working ranch, garner support for wide scale adoption of carbon farming practices on agricultural land, and show the potential for the agricultural sector to become both more resilient in the face of climate change and a leader in climate change mitigation.	Santa Barbara	\$ 201,386.00	No
First Generation Farmers	FGF has been teaching and mentoring individual farm apprentices for several years. Now, with a two-year grant from the USDA National Institute of Food and Agriculture's Beginning Farmer and Rancher Development Program, we're launching a formal training and incubator program. The purpose of the program is to provide new specialty crop farmers with the core agricultural skills, business knowledge, confidence, and land they need to establish dynamic and resilient farm businesses on the urban edge—where ever-growing demand for sustainably grown, source-identified produce presents one of the most exciting economic opportunities in the agricultural sector today. Healthy soils curriculum is a fundamental when beginning farmers start their farm business. It is imperative that these beginning farmers have a foundation for reducing GHG emissions in order to continue increase soil health for their long farming futures head of them.	Contra Costa	\$ 60,881.00	No