

Project Narrative

Project Background

From a 10,000 mile above look, it is clear that there is a need to transition to a more sustainable way of living. In particular, the way that food is produced is second only to the energy system in causing harm to the environment and the capacity for the planet to sustain human life. Our food system also causes harm to workers and hurting consumers as 1 in 3 young people in the U.S. are at risk from type-2 diabetes which is primarily related to diet and lifestyle. It would seem that in order to sustain life, we have to align food production with environmental conservation and public health. Our prime case study: The “Inland Empire.” The Inland Valley region known as the “Inland Empire” stretches from the eastern boundary of Los Angeles County to the Western border of Nevada and includes both Riverside and San Bernardino Counties. Particular burdens face Inland Communities. In 2018, the United Way declared one-in-three Inland Empire families does not earn enough to “make ends meet”(1). To add to the burden of poverty, the Los Angeles Times reported in 2015, that “people living near 60 Freeway in Ontario breathe the worst air in the Southland”(2). The pollution burden and poor job market for Inland regions lead to chronic illnesses such as depression, obesity, diabetes, and cardiovascular disease.

As a response, Huerta Del Valle was founded as a 501(c)3 in 2014, a food systems non-profit organization that aims to address food insecurity in socially disadvantaged communities by equipping communities with the tools to grow their own food and build sustainable community empowerment and health while bringing people together to grow their own food. Currently, HDV operates two active community gardens in high-need areas and has access to four vacant farm properties totaling over 80 acres of land within our management. The access to this land was obtained through funding from USDA-NIFA CFP grant which aimed to create land access for farmers to grow more organic local food. The first community garden, “Flagship site” is highly developed and has received EQIP funding in the past. This has become our model site and now serves as an educational facility, as well as a working farm. The second garden, “Jurupa Site” is marginally developed with no current EQIP practices other than mulching, although not funded by EQIP. The “Ontario Compost site” is an undeveloped property where HDV will develop a composting facility to collect waste from local cities and make soil feed all of the other sites. This site development is funded by the Transformative Climate Communities (TCC) grant from the strategic growth council and is a cap and trade funded grant. It will be used as a match for our CIG application. The three other sites are within Riverside county parks and are known as “Crestmore,” where HDV will develop a new farmer incubation farm to teach, train, and support new farmers. “Jensen Alvarado” is where HDV will use a mixture of traditional and modern growing methods to grow staple crops and livestock, and the “Lewis Rubidoux Nature Center (LRNC),” HDV is partnered with several organizations to rehab the land, farm it sustainably, and develop a sustainable ecology center. None of these sites have any current EQIP practices and are essentially fallow unmanaged land, or as we like to call them: blank canvases. On all of the sites, HDV aims to develop demos based off of the flagship site where we can produce food while implementing innovative combinations of conservation technologies appropriate to the site and surrounding areas. Currently, besides the TCC grant and a few other grants HDV also is in control of a CDFR Healthy soils program grant to fund application of compost, mulch, and hedge rows on the Jurupa site and the three sites in the Riverside County parks. This grant will also be used as match for the CIG application presented here. Between past

grants, TCC, CDFR, and revenue generated from produce sales, HDV plans to develop, scale, replicate, and sustain work on all 6 sites. CIG funds will be used to support additional development on these sites into powerful demonstration sites and then further to support them as tools to promote the increased scale and pace of conservation adoption through studying these demo sites.

HDV has seen the value in launching a New Farmer training course to support the overall vision of developing an equitable, local, sustainable food system. In 2018, this idea was realized and is now in pilot phase with a 24-person cohort. HDV has applied for funding from USDA-NIFA-BFRPG to fund the New Farmer Training long-term. In particular, this program seeks to engage historically underserved communities in learning how to farm using conservation methods so that they are best equipped to create solutions to the very burdens that diminish their quality of life. HDV will provide incubation space to these new and beginning farmers upon graduation and plans to engage them in CIG if awarded.

Inland Empire Communities struggle to move beyond disease since 18.3% and 18.2% of San Bernardino and Riverside residents respectively live in poverty according to the Public Policy Institute (3). California's SB 535 has qualified most of the areas the HDV has farm projects as Disadvantaged Communities (4) and the 2018 California EnviroScreen data reported our flagship site zip code (91761) to be one of the five most polluted in Southern California and all of the areas within HDV service areas are in the top percentile for pollution (5). The chronic health and poverty in the region are directly related to the major local industries including the logistics industry which builds warehouses on hundreds of acres (6). While the region is moving away from agricultural industry, it seems that the region is also getting sicker, poorer, and more polluted. The particular industries that contribute to poverty, illness and pollution are also the ones that are consuming prime farmland at an alarming rate (7). With so much uncultivated land, the development of more warehousing and other land-use will become the next best thing if there are no new farmers to keep growing. Unfortunately, the loss of working farm lands also means the loss of crucial environmental services such as water filtration, rainwater catchment, groundwater recharge, CO2 sequestration, and wildlife habitat that happens when farms are maintained in good health.

Conversely, if we can preserve available land and promote the use as conservation farms where economic, health and environmental benefits are in harmony, we can reverse the trend. If a new population of farmers and gardeners is prepared to enter new organizations and/or careers and start new businesses in diverse agriculture, then the regional food system can be preserved. If those farmers see the economic and socio-emotional benefits to farming in a conservation-oriented way they will choose to adopt these farming methods rather than the harmful status quo. This is why HDV plans to convert the farmland that it manages into 6 demonstration sites that will serve to address priority 1 of CIG to Increase the Pace and Scale of Conservation adoption. In particular, by engaging 30 beginning and experienced farmers in the region and showing economically viable conservation-based farming demonstrations, they will choose to adopt such methods on their farms: especially when there is a chance for further investment or bigger retail gains as a result. New careers in farming will use land resources in environmentally beneficial ways, create healthy local food access, and provide new living wage jobs especially for disadvantaged communities.

HDV sees the CIG program as an opportunity to demonstrate conservation, food production, economic development, and public health as a co-existing strategy rather than opposing forces. We relish the opportunity to develop demonstrations and engage local farmers who are in high

need communities to adopt these practices and become part of the solution. HDV suggests that those most affected by economic disparity and environmental pollution have the most to gain from adopting innovative conservation practices.

Project Objectives

This application is for a project that addresses priority 1: **Increasing the pace and scale of conservation adoption.**

Long-term Goal: Huerta del Valle will align food production with job creation, public health and most importantly environmental sustainability. Huerta del Valle will engage historically underserved populations, those who are most affected by environmental degradation and least likely to be engaged in conservation efforts, in learning about incentives and being coached to adopt conservation either as new/beginning farmers or as experienced farmers.

Our approach: We will transform unused land into sustainable farming demo sites. These sites will be studied as proof of concept and to develop protocols for creating carbon credits by reducing CO₂ on the farms and even carbon negative outcomes via sequestration. These studies will be turned into protocols and transition plans for other farmers who want to implement them. We will develop a set of standards for farmers to be able to achieve the Carbon negative label. Case studies will be made about economic outcomes as well as quality of life impacts as an added measure to promote adoption. These sites will be used to engage farmers to encourage adoption of the methods used on the sites. We will do this by developing protocols for Carbon Credits (CC) as well as a protocol for qualifying for a “Carbon Negative” label on produce. These protocols will allow farmers to adopt these methods and see significant economic gain from choosing conservation methods. Farmers will be convinced by economic study, study of the benefits to their farm and land, and study of impacts on quality of life. We feel these three are key to making a farmer choose to adopt what can often seem to be a costly transition to conservation.

Objectives to achieve the outcomes and long-term goal:

- Objective 1 Develop Six demonstration farm sites,
- Objective 2 Develop Carbon Credit protocol,
- Objective 3 utilize one more of the demo sites to practice CC protocol
- Objective 4 Develop Carbon negative protocol,
- Objective 5 Develop Carbon negative brand and labeling,
- Objective 6 use one or more of the demo sites to test the carbon negative protocols.
- Objective 7 Develop Economic case-study data and reports.
- Objective 8 Develop farmer quality of life and quality of the farm narratives
- Objective 9 Engage 30 farmers with reports, protocols, and demo sites

Project Methods

Huerta del Valle will use demo sites as a case study for all of our proposed ideas. Attractive reports will be made and disseminated widely based on site research via print and digital materials that are open source and user friendly so as to encourage adoption by as many as possible.

Study of demo site efficacy via CO₂ reduction/sequestration analysis

Each site will be studied by our carbon farm analyst to get a baseline CO₂ emissions. The total emissions will take into account on farm production as well as food distribution measures such as vehicle miles traveled. This will allow the analyst to create a footprint for each farm site

from which to reduce. From there each site will be equipped for at least two seasons with CO2 flux chambers to measure changes in CO2 emissions on the fields being worked. The carbon farm analyst will also use calculators to get a strong estimate of CO2 produced and later CO2 reduced or sequestered over the life of the far.

Study of economic impact on demo sites

Staff and evaluators will work to create total farm cost models for each demo site from which it can be shown the total costs and benefits of each practice and how it impacts production. Metrics will be in the form of expenditures vs income for produce taking into account the impacts and cost of implementing conservation practices and then the subsequent impact on production as well as value of the crops. Projections will be made for long-term and evaluated against traditional farms producing similar crops. When farmers adopt some practices, our evaluators will track the economic costs and benefits of their adoption as additional data for the final case studies.

Engage new and beginning farmers in the region

Community outreach staff will use traditional word of mouth, fliers, and presentation methods to engage farmers. Presentation and materials will be made in Spanish and English to engage a more diverse crowd. Outreach staff will also use websites and social media platforms such as Facebook, craigslist, Instagram, and also local print media to cast a wide net and assure engagement of various strata of society. The HdV New Farmer Training program will be engaged to bring in new and beginning farmers.

Engage experienced farmers in the region

Utilizing the databases of local NRCS in the region will allow us to access farmers that are known to have been farming in the region. University extension will also be contacted to support getting the word out about these programs and offerings to farmers.

Study of farmer quality of life

Consultants will develop pre and post surveys for the 30 farmers engaged to track changes in quality of life over the course of adoption. Does adopting conservation practices also create a better quality of life for farmers? If so we want to include this in our reports and publications to inspire more adoption.

Creation of protocols for CC generation on demo sites

Our dedicated staff will research best practices and past CIG success stories to choose the best approach to plan for CC development on farms. Staff will work to create a protocol on each unique site of the 6 for how to generate a CC. Staff will use measurements of CO2 measured by carbon farm analyst to show total reduction of CO2 to justify the CC. Staff will search first for local companies that can buy CC and if none then will research the global marketplace. UCI legal team will aid in legal matters related permitting for creation and sales of CC.

Creation of Carbon Negative protocols using demo sites

Our dedicated staff will work to research best practices for creating labeling standards using examples such as organic, non-GMO, gluten-free, fair trade etc. From these best practices an attractive brand and label will be created based on market research around labelling and purchasing decision-making science. The brand will be developed and trademarked with support from UCI legal team. Further a set of standards will be developed for the label to be used and with support from UCI we will assure it is used responsibly. Economic benefit of having the label will be studied using the sales from demo farms as a case study. Do sales increase? Can produce be sold for more than traditional crops of the same type?

Conservation practices to be implemented on each of 6 sites and other site usages.

Huerta del Valle Ontario flagship site

Currently: existing compost, vermicopost, season extension high-tunnel, tractor received from NAQI program, mulch, drip irrigation, moisture sensors, IPM, biodiverse tree and vegetable cropping, low-till farming.

Planned for CIG: no additional practices

Use for CIG: will be used as an immediate research site and demo site to engage local farmers while other sites are developing. Will get the whole farm footprint study and will see if CO2 can be reduced for CC. Will see of produce can achieve carbon negative status. Will have study of expenditures and income related to farm production. Will be used to develop first draft of protocols.

Huerta del Valle Jurupa Valley site

Currently: existing compost, mulch, drip irrigation, IPM, biodiverse tree and vegetable cropping, low-till farming.

Planned for CIG: Plan to create bioswales to support water infiltration on a hillside. Plan to implement hedgerows, compost application, native pollinator plant planting, cover cropping, multi-story tree cropping, conservation cover, and further erosion control. Will get bees, chickens, goats on site and small areas of pasture or sylvopasturing between trees.

Use for CIG: will be used as a research site and demo site to engage local farmers while other sites are developing. In particular will be used to demonstrate practices on a high-erosion-susceptibility site with sandy soil. Will get the whole farm footprint study and will see if CO2 can be reduced for CC. Will see of produce can achieve carbon negative status. Will have study of expenditures and income related to farm production. Will be used to develop first draft of protocols.

Huerta del Valle TCC grant Composting Facility

Currently: Fallow farm field leased by Huerta del Valle.

Planned for CIG: This project is part of the TCC grant. Two acres will be developed for the exclusive use of Huerta del Valle and the other 8 will be shared with our partner Sierra Vista. They will use their acreage for nursery crops and about 3 acres will be devoted to grinding and storage of mulch from green waste. One the two acres exclusively used by Huerta del Valle one acre will be built out as a medium scale composting facility on which mulch, manure, farm waste, and food waste from the city will be composted. A pre-existing well on the site will be refurbished. Vermicopost will also be developed on the site along with bioswales, and a catch basin. The other acre will have row crop production grown in a no-till method using drip irrigation and mulching as additional practices. Solar panels will be installed for farm energy needs and demo sized biodigestion will take place with excess food waste.

Use for CIG: will be used as a research site and demo site to engage local farmers in understanding food waste recycling and how compost can be applied to farms for CO2 sequestration. The site itself will get the whole farm footprint study and will see if CO2 can be reduced for CC. Will see of produce can achieve carbon negative status for the produce. Will have study of expenditures and income related to farm production. Will be used to develop first draft of protocols especially for farms that have larger-scale composting as an on-farm land-use.

Huerta del Valle Crestmore Farmer incubation site

Currently: Fallow farm site with an existing well.

Planned for CIG: Compost, mulch, and hedgerow application. This site will be divided into up to 20 small plots for new farmer incubation while serving as a demo-site for conservation methods.

Through direct student practice of conservation methods, they will be better able to adopt them on their own farms. The site will also get cover-cropped, have strip-cropping with pollinator crops use micro spray and drip irrigation, as well as bioswales to collect rainwater run-off on the site. Will get small composting as well as native plant plantations.

Use for CIG: Will get the whole farm footprint study and will see if CO2 can be reduced for CC. Will see of produce can achieve carbon negative status. Will have study of expenditures and income related to farm production. Will be used to develop first draft of protocols. Will be a demo for larger-scale production vs the smaller scale production at the Ontario and Jurupa sites. Total of 8 acres of row-cropping on this site.

Huerta del Valle Jensen Alvarado Farm

Currently: Fallow farm site with an existing ditch flood irrigation system and existing orchard.

Planned for CIG: Compost and Mulch application, and hedgerow application. This site will be divided into 3 plots as a demo-site for conservation methods. The plots will be managed as rotating grazing, cover cropping, row cropping and permanent pasture for animals from goats, chickens, to pigs and cows. These animals will be managed via managed grazing and will enter into other fields as a form of crop rotation. The site will get additional trenches dug to bring water from the flood system across the whole site efficiently. Since the ditch water is not consistent water storage tanks will be installed with solar pumps that will be able to store water and pump it when there is plenty for times when there is no water. This will allow for constant cover on the fields. Drip irrigation will be used one fields with row crops. A well will be dug on the site to provide more water quantity and because this sit connects directly to the Lewis Rubidoux site via the ditch well water can also be used to help increate water quantity on the downstream site. Crops that are drought tolerant will be planted and a focus on corn and beans will be produced on site to allow for no-till drill seeding rather than larger-scale tillage. Flail mower will be sued annually to slash crop residues and allow them to become mulch or be eaten by animals on site. Animals will be allowed to forage for a season on previously cultivated site so as to increate fertility.

Use for CIG: Will get the whole farm footprint study and will see if CO2 can be reduced for CC. Will see of produce can achieve carbon negative status. Will have study of expenditures and income related to farm production. Will be used to develop first draft of protocols. Will be a demo for larger-scale production vs the smaller scale production at the Ontario and Jurupa sites. Total of 8 acres of pasture 4 of row-cropping and 3 of orchard on this site.

Lewis Rubidoux Nature Center

Currently: Fallow farm site with an existing ditch flood access and an existing estuary and existing nature center building.

Planned for CIG: Compost and Mulch application, and hedgerow application, native pollinator garden planting as well as numerous practices to recover the existing estuary on the site will be implemented. Waterway will be protected via filters to prevent trash build up, planting of native plants and removal of invasive plants and fish. This site will be divided into 3 plots as a demo-site for conservation methods. The plots will be managed as rotating grazing, cover cropping, row cropping and permanent pasture for animals from goats, chickens, to pigs and cows. This site also has a small estuary that will be recovered by partners. Animals on site will be managed via managed grazing and will enter into other fields as a form of crop rotation. Improvement of soil via pasture and grazing will aid water recharge into the waterway south of the site. Since the ditch water is not consistent a well will be dug on site and water storage tanks will be installed

with solar pumps that will be able to store water and pump it when there is plenty for times when there is no water. This will allow for constant cover on the fields. Drip irrigation will be used on fields with row crops. The well dug on Jensen Alvarado will help to provide more water quantity to LRNC. No till methods will be used to plan cover crop and pasture on this site. Flail mower will be used annually to slash crop residues and allow them to become mulch or be eaten by animals on site. Animals will be allowed to forage for a season on previously cultivated site so as to increase fertility.

Use for CIG: Will get the whole farm footprint study and will see if CO2 can be reduced for CC. Will see of produce can achieve carbon negative status. Will have study of expenditures and income related to farm production. Will be used to develop first draft of protocols. Will be a demo for larger-scale production vs the smaller scale production at the Ontario and Jurupa sites. Total of 15 acres of pasture 5 of row-cropping on this site.

Geographic Location and Size of Project Area

The Projects area spans a regional scope including the west end of San Bernardino and Riverside Counties. The demonstration sites are all within a maximum of 15 miles from each other. We hope to impact other farmers within this region as well which is roughly 30 miles/sq. We have provided maps demonstrating the project area, the location of the six project sites and qualifying the areas served as socioeconomically disadvantaged as well as areas of high pollution burden.

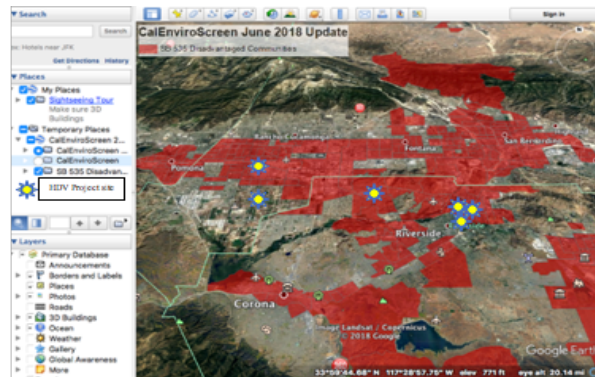


Figure 1. Map of Socially Disadvantaged Communities in the Inland Region and HDV project sites <https://oc.sba.ca.gov/cal-enviro-screen/sdb615>

EQUIP Eligible Producer Participation

Huerta del Valle is already an EQUIP eligible producer and will be leading the development of the demonstration projects. HdV engages farmers via our new farmer training program from which graduates incubate on the up to an acre of the Crestmore site. All of these small producers will be EQUIP eligible. Through our partnership with IERCD and our local NRCS chapter HDV works with several other EQUIP eligible producers including local strawberry producers and some other vegetable and nursery producers in the region. HDV will conduct outreach through various means including through NRCS to reach participants in our programming on the demonstration farm sites which means we will have a good chance of engaging EQUIP eligible producers. We will also work with NRCS to support inclusion in the EQUIP program where possible for producers we engage who are eligible, but not aware of the program.

Project Action Plan and Timeline

There are six project sites which total 86 acres of diverse land resources representative of land in the target area to be affected by the grant. One of the sites is on a hillside, two have historic orchards and are fed by historic water resources, two sites have wells. The flagship site is already developed and will serve as the model for replication. The larger sites will allow for demonstrations of increased scale of already proven concepts.

Actions/Milestones	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<i>Objective 1 Develop Six demonstration farm sites.</i>												
Master Plan for LRNC, Crestmore and Jensen Alvarado												
Master plan for Jurupa												
Master plan for TCC site												
Begin Implementation of Conservation practices on all sites												
Finish all practice development												
<i>Objective 2 Develop Carbon Credit protocol.</i>												
Create total farm CO2 footprint for each site.												
Research past success stories with CC												
<i>Objective 3 Utilize one or more of the demo sites to practice CC protocol.</i>												
Work to network with CC buyers												
Make first CC sale												
Make final protocol for CC generation and sale												
Coach farmers in CC												

plan-making														
<i>Objective 4 Develop Carbon negative protocol.</i>														
	Year 1				Year 2				Year 3					
Quarters	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Create total farm CO2 footprint for each site.														
Research past success stories with branding														
<i>Objective 5 Develop Carbon negative brand and labeling.</i>														
Design the label														
Trademark the label														
Test the label in market place and via advertising.														
<i>Objective 6 Use one or more of the demo sites to test the carbon negative protocols.</i>														
Implement standards on at least one demo-site														
Create report of findings and coach other farmers toward carbon negative practices														
<i>Objective 7 Develop Economic case-study data and reports.</i>														
Study baseline costs and gains on each demo site														
Study baseline costs and gains on other farms as control														
Create and administer survey to see impact of conserve. adoption on farm economics at demo sites and at other farms.														

Create final report showing economic benefit to adoption												
	Year 1				Year 2				Year 3			
Quarters	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<i>Objective 8 Develop farmer quality of life and quality of the farm narratives</i>												
Interview 30+ farmers												
Create and administer pre and post adoption qualitative surveys												
Create a quality of life improvement report with findings to help inspire adoption.												
<i>Objective 9 Engage 30 farmers with reports, protocols, and demo sites</i>												
Compile CO2 footprint, CC, and Carbon negative reports and protocols with Economic and quality of life surveys												
Create user-friendly versions of the report in at least English and Spanish												
Do outreach to recruit farmers to demo sites to learn about conservation practices and be exposed to the benefits shown through the research.												
Coach the implementation of conservation practices and then study the impacts for them on their farms.												

Project Management

Project management will be shared between the partners and the team will hold regular project meetings to ensure good communication and progress. Our project partners include Inland Empire Resource Conservation District, San Bernardino Valley Municipal Water District, UC Irvine Community and Economic Development Legal Clinic, Riverside County Parks, and Ersoylu Consulting. Project personnel include the key persons such as Executive Director, Project Manager and the Program Coordinator, along with the help of an Assistant Program Coordinator, Administrative Support, Demo Site Head Developer, Conservation Practice Developer, Carbon Farm Analyst, Carbon Credit Development Manager, Carbon Negative Brand Manager and an Outreach/Community Engagement and Education Coordinator.

The Outreach/Community Engagement and Education Coordinator will report to the Program Coordinator, Project Manager and Executive Director while creating educational materials to be used on the farm demo sites so that they serve as the most effective educational resources. They will reach out to the community and recruit at least 30 farmers to learn from the demo sites and begin their own conservation adoption. This role will also be responsible for working with Ersoylu Consulting, an evaluation service that will be hired to conduct surveys and create a final report to disseminate widely. The evaluators will conduct surveys to learn about farmer quality of life before and after adoption and create a report outlining impacts on farmer's lives of making the change to conservation.

Our Carbon Negative Brand Manager will report to the Program Coordinator and be dedicated completely to the development of protocols and standards for achieving the "carbon negative" standard. The Carbon Credit Development Manager will report to the Program Coordinator as well develop protocols around creating carbon credits on the demo sites and developing contacts and needed networks to be able to sell these carbon credits once created. A Carbon Farm Analyst will report to the Program Coordinator, Project Manager and Executive Director, while studying the current conditions of each of the 6 demo sites and creating the frameworks and metrics to study CO₂ emissions and sequestration on each site. Our Conservation Practice Developer will assist the Demo Site Head Developer with all tasks related to implementing the proposed conservation practices on each site and be responsible for doing much of the maintenance of conservation practices as well as testing their efficacy. The Demonstration Site Head Developer will work directly with the Admin. Assistant to assure staying on-time and on-budget with the projects, they will report to the Program Coordinator on progress and will be required to report to the Project Manager and Executive Director. They oversee and deliver on each of the conservation practices proposed for each site as well as acquiring any permits needed to develop such practices.

Administrative Support will be keeping all accounts, expenditures, financials, and payroll in order to support the Director, Project Manager, and Program Coordinator's roles, they will also be will be the communication pass through for all staff dedicated to the program. The Assistant Program Coordinator will report to the Program Coordinator and oversee grant spending, achievement of grant deliverables, and reporting. The Program Coordinator will report to the Director, Project Manager and work with administrative support to assure proper bookkeeping, while implementing the program. The Project Manager will oversee all projects of the organization, while aiding the Director. Our Executive Director, while not acting as the PD for this grant, will assure the smooth development of sites, strong development of partnerships and hiring for the project.

In addition to the above project team members, the San Bernardino Valley Municipal Water District (SBVMD) will be contributing via a master plan of the LRNC site, which will also include the other two sites within the Riverside County Parks such as Crestmore and Jensen Alvarado. The Inland Empire Resource Conservation District will support HdV CIG staff in-kind by supporting research and reporting related to GHG emissions and reduction, best practices for carbon farming, and support outreach to the public and farmers within their service area and the area to be impacted by this project, which overlap. The University of California Irvine Community and Economic Development Clinic will commit as legal counsel related to research, for the creation and sale of carbon credits as an incentive model for farmers to adopt conservation practices on their farms.

Project Deliverables/Products

Through the combination of engagement and learning through demonstration, showing a path to access real economic benefits, and being able to provide provocative written materials about economic benefit, soil health, farm health, environmental health, and personal health benefits of conservation adoption we will be able to achieve Priority 1: Increase the pace and scale of conservation adoption.

This grant application will deliver the following

1. Six diverse Regional Demonstration sites on land representative of the southern California land resources.
2. Demonstration site research on CO₂ emissions, reduction, and sequestration for all six sites as well as pre and post adoption impacts on water quantity, soil health, and pollinator populations.
3. In the field creation of Carbon Credit protocols for farmers to have a guide how to generate and sell these credits as an incentive for conservation adoption.
4. Creation of Carbon negative label and guidelines for farmers to implement enough conservation practices in order to get certified and be able to label produce as Carbon Negative.
5. Involvement with the Carbon Negative label will result in increased sales gains and further investment in these farms.
6. Outreach materials will be made to attract farmers to conservation ideas in at least Spanish and English. At least 30 farmers will be engaged by the project and will adopt some practices as a result. At least 50% of them will be from historically underserved communities.
7. Through evaluation, research will be produced about the economic and quality of life benefits from adoption on demo sites and other farms. This will help craft reports for the USDA and also convincing literature and case-studies to inspire farmers to adopt conservation.

Project Evaluation

This CIG project will be evaluated in both quantitative and qualitative measures. Our HDV staff and our partners IERCD will support quantitative measurements related to GHG reduction and on-farm conservation practice demonstration efficacy while our contracted third-party evaluation team from Ersoylu Consulting will support quantitative measurements around the efficacy of market-based components of the project such as the generation and sale of CCs,

improved sales with Carbon-negative label, and qualitative measures *vis a vi* farmer interviews about quality of life before and after conservation adoption.

HDV is committed to a strong evaluation inclusive of the community and will engage participants in the program to create a modified evaluation plan that depicts both *process* and *outcome evaluation*. It is critical that we understand the changes in knowledge, actions and conditions related to the project. Furthermore, we are committed to the dissemination of learning from the HDV project and will dedicate resources to ensure that the lessons learned are shared with USDA and can contribute to the emerging body of knowledge regarding conservation practice adoption. In order to assess the outcome and impact, we will engage in a multi-method approach and intend to use pre- and post- surveys to measure changes related to our proposal of conservation practices. We will utilize surveys to check in on the conservation of the six demonstration sites, amount of people impacted by the demo sites, and farm site improvements. Additionally, the thirty farmers engaged in the program and the impact on their overall quality of life will be taken into account in the evaluation. Furthermore, the amount of CO2 reduced and sequestered will be measured, as well as the economic impact of adoption. We are interested in the program’s impact on health and environment, as well as understanding the innovative ways that the surrounding community adopts the new conservation practices, as well as the sites for fostering community engagement. In order to support the USDA’s desire to determine best practices, including valuable lessons learned, we insure that the model implemented will be shared across the field, as well as within USDA.

Ersoylu Consulting relies on the overall framework for evaluation based on the CDC’s Program Performance & Evaluation Office (PPEO) ***Framework for Program Evaluation***. Relying on this set of standards will ensure that the evaluation of HDV’s USDA-NCRS-CIG project will be appropriately tracked and measured based on the resources available.

Table 1: Outcome Measures and Proposed Metrics

Outcome	Target	How Measured	When Measured
Demonstration site conservation methods efficacy	Calc total CO2 on sites and show significant reduction	CO2 emissions and savings, soil organic matter, and economic surveys	Quarterly studies over the course of the grant
Amount of people impacted by demo sites	30 farmers plus 1000 additional visitors over grant period	Pre- and post-surveys and attendance sheets	Last quarter of each year in the three years of the grant
Number of farmers engaged	30 farmers	Pre- and post-surveys	Quarterly over the course of the grant
Number of farmers who adopted one or	30 farmers	Pre- and post-surveys	Quarterly over the course of the grant

several methods on their farms			
CO2 reduced vis a vi adoption on demo sites	Measure CO2 against initial footprint equiv at least one carbon credit per site	Carbon farm analyst's' plan	Quarterly studies over the course of the grant
CO2 sequestered vis a via demonstration technology on demo sites	At least 200 metric tons per site per year.	Soil org matter and Carbon Flux chambers and calculators	Quarterly studies over the course of the grant
CO2 sequestered vis a via demonstration technology on other farms	At least 100 metric tons per site per year	Soil org matter and Carbon Flux chambers and calculators	Quarterly studies over the course of the grant
Number of farmers qualifying for CC	30 farmers	Via our protocols and permitting by CC marketplace	Last quarter of every year for the three years
Number of CC sold total	At least 36	Sales confirmation Press release	Last quarter of every year for the three years
Number of farmers in transition to carbon negative practices	10 farmers	Pledge letters	Quarterly studies over the course of the grant
Number of farmers who qualify for the carbon negative label	10 farmers	Achievement of standards based on our protocols	Last quarter of every year for the three years
Economic impact of adoption on production cost	Min 5-10% cost savings	Financials at end of fiscal year	Quarterly studies over the course of the grant
Economic impact of adoption of sales	Min 5-10% revenue increase	Financials at end of fiscal year	Quarterly studies over the course of the grant
Quality of life impact on farmers of adoption	Self-reported improvements in weight, asthma, stress etc.	Pre- and post-surveys	Last quarter of every year for the three years

Benefits or Results Expected and Transferability

HDV expects that on each of the six demonstration sites there will be significant and scientifically demonstrable benefits to soil health, pollinator habitat and population, and water quantity. HDV anticipates benefit from creating master plans for each site including a Carbon footprint for each site from which CO₂ emissions can be tracked, reduced and in some cases, CO₂ can be sequestered on site. These master plans will serve as models of other farmers to assess their farm Carbon footprint and have stronger tools to address reductions and sequestration.

Beyond the benefit of creating a carbon footprint HDV anticipates reducing CO₂ emitted by the various farm sites and in some cases even causing carbon sequestration on some of the sites. This will be shown via the increase in soil organic matter on all of the sites and via the carbon flux chamber data. HDV will benefit the local farming community by allowing farmers to see successful demonstration projects of what the benefits of conservation adoption could look like, and by failing for them and generating best practices based on success and failure in order to increase likelihood of other farmers' success. Each demo site will be open to the public from regional visitors to guests from across the nation. We anticipate others adopting our strategies based on our ability to show positive outcomes. HDV expects to coach farmers through the process of developing their own carbon footprints and ultimately conservation plans. This coaching model will be crucial to supporting historically underserved farmers access to knowledge and ultimate success with adoption. HDV expects to see benefit to other farmers who choose to adopt based on our models.

While our projects are in the unique Southern California climate we anticipate that the model of whole farm carbon footprinting and subsequent practices to reduce and sequester CO₂ can be applied to any farm in any context with appropriate modifications for climate and farm size. All of the conservation strategies suggested by HDV are scalable from micro to mega size farms.

HDV expects to show enough CO₂ reduction or sequestration on at least some of the demonstration sites to be able to generate Carbon Credits and be able to demonstrate sale of those CCs as an economic incentive to conservation adoption. HDV expects to sequester enough carbon on at least one site while still producing food from the site to be able to achieve its own standard of carbon negative food and utilize the label in market trials. HDV expects to see not only economic savings on farm costs as a result of conservation adoption/investment, but also see economic gain via superior sales, superior retail value and the additional income from the sale of CCs. These protocols, standards, and guidelines will aid in transferability and scalability of the demonstrations as they will be written in the form of roadmaps for other farmers to follow to gain the same benefits from conservation adoption as we did on the demonstration sites.

HDV expects to generate data such that it can disseminate and promote the successes and learnings of these projects as well as the particular protocols and guidelines laid out for other farmers to follow suit. HDV expects to produce enough data about economic, farm health, and quality of life incentives to make conservation adoption very attractive to farmers. This overall will support transferability of findings and outcomes to a greater audience. Any farmer who wants to save money, live a healthier quality of life, improve the land they steward will see that conservation adoption is the way to do it while making up any loss of production via the various incentives described here and potential future investment in their farms by NRCS or funders.

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