



U.S. Department of Agriculture
Natural Resources Conservation Service

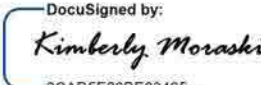
NRCS-ADS-093

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number NR233A750004G050	2. Amendment Number	3. Award /Project Period Date of Final Signature - 05/31/2028	4. Type of award instrument: Grant Agreement
5. Agency (Name and Address) USDA Partnerships for Climate-Smart Commodities c/o FPAC-BC Grants and Agreements Division 1400 Independence Ave SW, Room 3236 Washington, DC 20250 Direct all correspondence to FPAC.BC.GAD@usda.gov		6. Recipient Organization (Name and Address) LYNKER CORPORATION 338 E MARKET ST STE 100 LEESBURG VA 20176-4101 UEI Number / DUNS Number: MCLPKDBCDKY7 / 807889683 EIN:	
7. NRCS Program Contact Name: ECHO DOMINGUES	8. NRCS Administrative Contact Name: MICHELE DEVANEY	9. Recipient Program Contact Name: Sarah Pautzke	10. Recipient Administrative Contact Name: Kimberly Moraski
(b)(6)			
11. CFDA 10.937	12. Authority 15 USC 714 et seq	13. Type of Action New Agreement	14. Program Director Name: Christopher Hawkins (b)(6)
15. Project Title/ Description: Expand climate-smart fruit,vegetable,coffee,beef,bread,fruit,avocado,taro,specialty crop markets in HI andsupports farmer-rancher-forest landowner climate-smart practice implementation and monitoring.			
16. Entity Type: Q = For-Profit Organization (Other than Small Business)			
17. Select Funding Type			
Select funding type:	☒ Federal	☒ Non-Federal	
Original funds total	40,000,000.00	\$2,836,328.00	
Additional funds total	\$0.00	\$0.00	
Grand total	40,000,000.00	\$2,836,328.00	
18. Approved Budget			

Personnel	\$2,073,187.00	Fringe Benefits	\$663,420.00
Travel	\$82,312.00	Equipment	\$0.00
Supplies	\$34,650.00	Contractual	\$552,121.00
Construction	\$0.00	Other	36,594,310.00
Total Direct Cost	39,591,024.00	Total Indirect Cost	\$408,976.00
		Total Non-Federal Funds	\$2,836,328.00
		Total Federal Funds Awarded	40,000,000.00
		Total Approved Budget	42,836,328.00

This agreement is subject to applicable USDA NRCS statutory provisions and Financial Assistance Regulations. In accepting this award or amendment and any payments made pursuant thereto, the undersigned represents that he or she is duly authorized to act on behalf of the awardee organization, agrees that the award is subject to the applicable provisions of this agreement (and all attachments), and agrees that acceptance of any payments constitutes an agreement by the payee that the amounts, if any, found by NRCS to have been overpaid, will be refunded or credited in full to NRCS.

Name and Title of Authorized Government Representative KATINA HANSON Acting Senior Advisor for Climate-Smart Commodities	Signature KATINA HANSON Digitally signed by KATINA HANSON Date: 2023.05.24 08:50:12 -05'00'	Date
Name and Title of Authorized Recipient Representative KIMBERLY MORASKI Contracts Administrator	Signature  2CAD5E86BE83495	Date 5/23/2023

NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW., Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

PRIVACY ACT STATEMENT

The above statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. Section 522a).

Statement of Work

Purpose

The purpose of this agreement, between the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) and Lynker Corporation (Recipient), is to build markets for climate-smart commodities and invest in America's climate-smart producers to strengthen U.S. rural and agricultural communities.

Objectives

The objectives of this project are to support the production and marketing of climate-smart commodities by providing voluntary incentives to producers and landowners, including early adopters, to implement climate-smart agricultural production practices, activities, and systems on working lands; measure/quantify, monitor and verify the carbon and greenhouse gas (GHG) benefits associated with those practices; and develop markets and promote the resulting climate-smart commodities.

Budget Narrative

The official budget summarized below and described in the attached Budget Narrative will be considered the total budget as last approved by the Federal awarding agency for this award.

Amounts included in this budget narrative are estimates. Reimbursement or advance liquidations will be based on actual expenditures, not to exceed the amount obligated.

TOTAL BUDGET \$ 42,836,328.00

TOTAL FEDERAL FUNDS \$ 40,000,000.00

PERSONNEL \$ 1,884,715.00

FRINGE BENEFITS \$ 603,109.00

TRAVEL \$ 74,829.00

EQUIPMENT \$0

SUPPLIES \$ 31,500.00

CONTRACTUAL \$ 501,928.00

CONSTRUCTION n/a

OTHER \$ 36,494,943.00 (includes \$14,642,016 of PRODUCER INCENTIVES-practice implementation and travel)

TOTAL DIRECT COSTS \$ 39,591,024.00

INDIRECT COSTS \$ 408,976.00

Recipient has elected to use the de minimis indirect cost rate and a base of Modified Total Direct Costs.

TOTAL NON-FEDERAL FUNDS \$2,836,328.00

PERSONNEL \$ 265,457.00

FRINGE BENEFITS \$ 84,946.00

TRAVEL \$0

EQUIPMENT \$0

SUPPLIES \$0

CONTRACTUAL \$ 53,900.00

CONSTRUCTION \$0

OTHER \$ 2,391,595.00 (includes \$513,695 of PRODUCER INCENTIVES)

TOTAL DIRECT COSTS \$ 2,795,898.00

INDIRECT COSTS \$ 40,430.00

When equipment is purchased with Federal funds it must be used until no longer needed as described in the General Terms and Conditions and 2 CFR 200. If the residual value of the equipment is \$5,000 or more at the time it is no longer needed, the recipient must request disposition instructions. The disposition instructions may direct the recipient to: 1) sell the equipment and return a proportionate share of the proceeds to the Federal agency; 2) transfer title to another eligible entity identified by the Federal agency; or 3) keep the equipment if desired and compensate the Federal agency for its proportionate share of the value.

Responsibilities of the Parties:

If inconsistencies arise between the language in this Statement of Work (SOW) and the General Terms and Conditions attached to the agreement, the language in this SOW takes precedence.

RECIPIENT RESPONSIBILITIES

Perform the work and produce the deliverables as outlined in this Statement of Work and attachments.

Ensure Paperwork Reduction Act (PRA) clearance is obtained prior to conducting data collection from producers or other project participants, including data collection performed by subrecipients.

Comply with the applicable version of the General Terms and Conditions.

Submit reports and payment requests to the ezFedGrants system as outlined in the applicable version of the General Terms and Conditions. Reporting frequency is as follows:

Performance Reports: Quarterly

SF425 Financial Reports: Quarterly

Detailed Progress Report: Quarterly

(The detailed progress report is in addition to the performance and financial reports referenced above and described in the general terms and conditions)

Expected Accomplishments and Deliverables

See attached Benchmarks Table and associated Project Narrative.

Resources Required

See the Responsibilities of the Parties section for required resources, if applicable.

Milestones

See attached Benchmarks Table and associated Project Narrative.

GENERAL TERMS AND CONDITIONS

Please reference the below link(s) for the General Terms and Conditions pertaining to this award:

<https://www.fpacbc.usda.gov/about/grants-and-agreements/award-terms-and-conditions/index.html>

Attachments:

Budget Narrative

Project Narrative

Benchmarks Table

Climate-Smart Practices List and Limitations

Data Dictionary

Climate-Smart Specific Terms and Conditions

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Portfolio of Partnerships for Hawai'i Climate-Smart Commodities

**Response to Notice of Funding Opportunity: Partnerships for
Climate-Smart Commodities National Funding Opportunity
No. USDA-NRCS-COMM-22-NOFO0001139**

CAGE: 56F28 | UEI: MCLPKDBCDKY7 | TIN: 74-3233110
May 18, 2023

REVISED PROJECT NARRATIVE

Submitted By:
Lynker

Thomas Rabung, Contracts Manager
338 East Market St., Ste. 100
Leesburg, VA 20176

Submitted To:
U.S. Department of Agriculture
Natural Resources Conservation Service



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1 EXECUTIVE SUMMARY

Lynker Corporation (Lynker), a HUBZone certified and employee-owned company, offers the USDA-NRCS a mature, innovative, federal contractor-partner to execute this proposed pilot project to create and sustain a Hawai'i Climate Smart Commodities Partnership (CSC). Our entire partnership team is ready and able to start the project immediately upon award. In this and the following sections, we provide relevant examples of our capabilities for eligibility, as found in the Notice of Funding Opportunity (NoFO). Lynker is excited and proud to assist and partner with the many great organizations described in this proposal. This funding will enable important, relevant CSC across Hawai'i's forest, agroforest, silvopasture, and crop production spectrum, as well as the required data and marketing/branding efforts to support the entire effort for the project period and beyond. In Phase 1, we anticipate nearly 6,468 acres of implementation and \$11,433,138 of direct financial assistance to more than 50 producers. In Phase 2 we will identify, fund, and implement an inclusive, community-based approach to identifying and supporting the needs of underserved producers.

1A. Contact Information

Company Name and Address	Lynker Corporation Marine, Ocean, and Coastal Science and Information (MOCSI) Group 338 East Market St., Ste. 100, Leesburg, VA 20176
Management Point of Contact	Dr. Christopher Hawkins, VP MOCSI (West) chawkins@lynker.com, 808-494-7116
Program Manager	Sarah Pautzke, Project Manager MOCSI (West) spautzke@lynker.com, 808-497-5009
Contract Point of Contact	Tom Rabung, Contracts Manager trabung@lynker.com, 571-278-5946
Principal Investigator	Dr. Susan E. Crow, Assoc. Professor, University of Hawai'i Mānoa, College of Tropical Agriculture and Human Resources, Department of Natural Resources and Environmental Management; crows@hawaii.edu , 808-956-8149

1B. List of Project Partners

The project will be guided by the voices of Hawai'i's producers and practitioners to achieve meaningful climate benefits through implementation of climate-smart practices and development of sustainable, system-level decision support and diverse market opportunities. Key overarching project components are Lynker's project management core (Project Manager, Sarah Pautzke), the Knowledge and Strategic Design Lead (Principal Investigator, Dr. Susan Crow, co-PI/Key Person, Dr. Johanie Rivera Zayas (Hawaii Agriculture Research Center (HARC)), and an Equity, Partnerships, and Indigenous Innovation Team (Office of Indigenous Innovation (UH OII) Director, Kamuela Enos; O'ahu Agriculture and Conservation Association Executive Director, Dr. Amanda Shaw). Key partners came together for the first time to meet the overall project objectives:

- Hawai'i Producer Engagement Team (Hawai'i PET): Hawai'i Cattlemen's Council (HCC), O'ahu Resource Conservation and Development Council (ORCD), Hawai'i Farmers Union United (HFUU), The Kohala Center (TKC), Forest Solutions Incorporated (FSI), Hawai'i Department of Land and Natural Resources (DLNR), and University of Hawai'i Mānoa College of Tropical Agriculture and Human Resources (UH Mānoa CTAHR) Extension



- Measurements, Modeling, Reporting, Verification (MMRV) Team: UH Mānoa; Hawai'i Agriculture Research Center (HARC); University of Florida (UF); Colorado State University (CSU); Natural Resource Data Systems (NRDS)
- Marketing and Promotions Team: Lynker; Transforming Hawai'i's Food Systems Together; UH Mānoa; NRDS
- Supporting external initiatives: Aloha + Challenge, Hawai'i Greenhouse Gas Sequestration Taskforce, FarmLink, Hawai'i Department of Agriculture, Pacific Gateway

1C. List of underserved/minority-focused project partners

- **Hawai'i** is the country's third-most diverse state overall. It is the most racially and ethnically diverse state; ranks third for cultural diversity, and fourth for economic diversity.
- **UH Mānoa** is a minority-serving institution. The UH OII, housed within the Office for Research Innovation, is directed by Kamuela Enos;. 68% of UH Mānoa students are from Hawai'i. According to the Chronicle of Higher Education, UH is "the most diverse university in terms of students and faculty." Forty-one percent of UH Mānoa students are underrepresented students; this category breaks down as follows: 14% Native Hawaiian/part Hawaiian, 10% Filipino, 15% Mixed Race, 2% Pacific Islander.
- **P.I. Dr. Susan Crow**, leads the Hawai'i Soil Health Research Group and the Soil Ecology and Biogeochemistry Lab at the UH Mānoa, where she currently employs 32% underserved Graduate Assistants, postdoctoral fellows, and other staff; The Dr. Todd-Brown lab at **UF** is a female-led computations lab with a majority of female team members. **HARC** is an independent 501(c)(3) non-profit entity serving traditionally underserved communities in the agricultural sector, focused on specialty crops. HARC executive director is a woman, the HARC President of the Board of Directors is a woman of color, and Dr. Rivera-Zayas is a Hispanic woman.
- **HCC**, led by a woman of color, will engage pilot participants for rancher practices that focus on female-led operations and small producers. **TKC** on Hawai'i Island, is directed by a Native Hawaiian woman and operates as a partner through its Rural and Cooperative Business Development Services Program's (RCBDS), with relevant client percentages fluctuating between 66% to 69%. RCBDS has over 10 years of experience working on socially-disadvantaged populations and initiatives to better understand and serve their needs. **ORCD** is an independent, 501(c)(3) non-profit entity serving Hawai'i's rural communities, farms, and ranches since 1997 to improve stewardship of natural resources. ORCD coordinates the Hawai'i Women Farmer Network, over 600 partners strong. **HFUU** is an independent, 501(c)(3) non-profit entity serving smallholder diversified family farms. HFUU President is a Hawaiian male, and Vice-President is a woman of color.
- **Producers across our portfolio** meet multiple demographic markers such as limited resource (3%), beginning farmer/rancher (22%), socially disadvantaged (47%), women-owned farms/ranches (28%), and specialty crop producers (61%).



1D. Compelling need for the project and project goals

Hawai'i has an important role to play in moving the U.S. CSC ball forward, and as leader in this arena for all U.S. insular areas. We are making important strides in local institutional food purchasing and progressive climate policy mandates, including those described immediately below. We must now integrate these programs (and others coming online) and create partnerships that ensure their benefits become widely shared. Hawai'i simply cannot do this in any meaningful way absent the funding provided by this CSC Funding Program. The portfolio of projects we propose, and the partnership we have stood up, create a path to leverage this convergence, solidify existing relationships, and build new partnerships to maximize the opportunity to build CSC into new purchasing agreements. This project thus operationalizes policy mandates for both local food production and improved soil health and carbon (C) sequestration in natural and working lands (see end of this section). It does so by 1) overcoming implementation barriers through investment and incentives, 2) improving technical assistance capacity in our community-based organization networks, 3) building basic decision support tools for modeling/verification, and 4) generating internal momentum for a market-based sustainable food system embedded within resilient and abundant landscapes across Hawai'i.

We propose an inclusive, two-phase process that both facilitates shovel-ready; large scale; diverse; early adopter; and infrastructure investment projects in Phase 1 and an inclusive, community-based approach to identify and support additional needs (especially those of underserved producers) in Phase 2. As a result, verifiable, locally-produced climate smart products will improve environmental and economic outcomes through investment in Hawai'i's producers and their communities. With this investment, we will build a decision support tool that facilitates forecasting and quantification, monitoring, reporting, and outcomes verification from climate smart actions in an equitable and just manner for Hawai'i. Essential long-term data and process-based models required for forecasting soil C, greenhouse gasses (GHG), and yield outcomes currently are lacking in Hawai'i as a result of *chronic underinvestment* outside of the conterminous U.S. Therefore, the COMET Tools ubiquitous for the continental states are limited in Hawai'i - COMET Farm is not activated and COMET Planner uses only IPCC Tier 1 and II equations for limited systems (e.g., no "Woody Plantings," which includes all reforestation, agroforestry, silvopasture, and windbreaks). Since the U.S. Climate Alliance and American Farmland Trust used the COMET tools to create CARPE and other planning and policy calculators, these also are not initialized for use here. In response, a UH Mānoa research team successfully competed for USDA-NIFA, USDA-NRCS, and U.S. Climate Alliance funds over the last decade to: identify archetype soils and productive ecosystems (including forestry, ranching, and cropland); initialize a process-based model with potential to capture key ecosystem processes critical to C; nutrients, and GHG; determine appropriate soil metrics; and build a web-based tool to assist cooperators request measurements and monitor change in soil health and carbon.

Investments in data and decision support infrastructure that implements this knowledge system and deploys climate-smart practices are now essential for Hawai'i to participate meaningfully in climate activities in natural/working lands that (re)build landscape abundance and resilience.



- **Program Goal 1:** This pilot project will establish a partnership to implement a portfolio of climate-smart production practices, activities, and systems on working lands in Hawai‘i that prioritizes diverse, multifunctional landscapes and targets known “lowest-hanging fruits” for a maximum climate benefit through both sequestration and emissions avoidance. It will also pilot an incentives program introduced in this state legislative session as both HB2493 and SB3325 “Hawai‘i Farmland and Forest Soil Health Carbon Smart Incentive Program” with broad Environmental Caucus backing that bridges state mandates to achieve net decarbonization and improved C sequestration, yields, and soil health in working lands by 2045 and one-off, independent efforts/actions targeting a land manager/owner.
- **Program Goal 2:** Our partnership will invest in infrastructure for a decision-support tool, the architecture of which will be intentionally rooted in shared knowledge pathways and datastreams designed to minimize bias and prepare Hawai‘i’s lands and people to be climate ready.
- **Program Goal 3:** Finally, our outcomes will include a systems-level metric for improved climate benefits and healthy soils that backs certification for high-value markets as “local, climate smart” products and potential environmental markets.

As mentioned above, Hawai‘i has established important, relevant state-wide policy mandates:

House Bill 2182: the state has mandated at least carbon neutrality by 2045 and established a Greenhouse Gas Sequestration Task Force to “identify land and marine use policies, agricultural policies, agroforestry policies, and mitigation options that would encourage agricultural and aquaculture practices and land use practices that would promote increased greenhouse gas sequestration, build healthy soils, and provide greenhouse gas benefits.” **Act 175** requires the Hawai‘i Department of Education to source 30% of food served in schools from local producers by 2030. **Act 176** mandates that all state departments purchase 50% of their food needs from local sources by 2050. These actions will help shift the composition of total food sales from imports to local foods. By making investments now in CSC value chains, our team is poised to help ensure that not only are these food purchases local, but also climate smart.

1E. Approach to minimize transaction costs associated with project activities

Lynker is a nimble private government contractor known for administering large-scale contracts and grant awards efficiently and with a comparatively small overhead. We bring a track record of understanding issues and challenges inherent in managing specialized, matrixed, and dispersed personnel and subcontractor teams. Lynker is most interested in ensuring funds go to support maximum CSC outcomes. As the Prime and primary point of contact for the government, we will ensure quality services, fiscal responsibility, and a reduction of transaction-based expenses at every turn. Our ISO-certified Quality Management System (QMS) is the foundation for ensuring high-quality management and cost savings. Notably, we will work directly with partners and producers to trim or eliminate costs associated with unnecessary multi-tiered subcontracts.

1F. Approach to reduce producer barriers to implementing Climate Smart Agricultural and Forestry practices for the purpose of marketing CSC

Hawai‘i’s diverse agricultural sectors are robust and 28% of the state’s landmass is in some form of production. Hawai‘i Island alone, being the size of Delaware, has 11 of the world’s 13 climate zones and produces an equal amount of diversity in commodities and cultural items. Hawai‘i’s agricultural history from the late 1800’s to 2010’s was characterized by the rise and fall of extractive plantation (i.e., monocrop) agriculture that dismantled the sophisticated indigenous Native Hawaiian ahupua‘a, or resource management, system. More recently, a surge of small diversified farms dominates the next phase of food production in Hawai‘i and seeks a renewed reciprocity and relationship to the land and environment, much like was central to the ahupua‘a system. Today, Hawai‘i’s 7,328 farmers and ranchers steward a total of 1,135,352 acres, and constitute a diversity of operation sizes and producer demographics with a rapidly-growing new/beginner farmer base.

Federal definitions of “underserved producers” as those who are beginning, veteran, limited resource and small-sized, socially disadvantaged, or Indian Tribal members improved funding distribution for US producers to address histories of racial and gender inequity within farm funding (Feder & Cowan, 2013). Subsequently, the 2018 Farm Bill and other efforts continue emphasizing the need to better support “underserved” producers (Johnson, 2022). Today, Hawaii’s existing producers compete with global markets and urban development (Mostafanezhad & Suryanata, 2018) yielding economic conditions that characterize many as “resource limited.” Indeed, according to 2017 USDA census data, less than half of Hawaii’s farm operations are breaking even (Perdue & Hamer, 2019). By USDA definitions, 47% of principal producers are classified as socially disadvantaged, 14% hold veteran status, and 35% of farm operations are new and beginning (Perdue & Hamer, 2019). However, census data is limited in some ways by low response, language barriers, and classifications that do not fit the islands’ unique demographics (Rehkamp et al., 2021; Vaughan & Vitousek, 2013).

National outreach and education efforts tend to focus on groups of Socially Disadvantaged Farmers and Ranchers (SDFRs) based in the continental U.S., including Black/African American, Hispanic/Latino/a, Native American/American Indian, and Asian farmers. But, Hawai‘i’s producers represent a distinct set of cultural and language backgrounds. The ethnic background of Hawai‘i’s producers has a high proportion of Native Hawaiian, Other Pacific Islander, and Asian Farmers. These producers include both American- and foreign-born. Hawai‘i also has one of the highest proportions of non-English speakers in the nation, with 26.5% of Hawai‘i residents speaking a language other than English at home (PGC). As these demographics are represented within our farming and ranching communities, information on languages spoken by agricultural workers has not been formally collected since 2006 (USDA 2006). Based on the work of local producer organizations and past data, many “underserved” producers are Native Hawaiian and/or different immigrant/English Language Limited/English Language Learner farmers—specifically Thai, Laotian, Mandarin, Ilocano, Tongan, Marshellese, Chuukese, Ponhpein and several other language speakers (USDA 2006). These are Hawai‘i’s producers and practitioners who our project will work to support and build relationships with in order to encourage climate-smart management practices.

Across the breadth of producers and practitioners in Hawai‘i, layered barriers to implementation of climate-smart practices exist. The U.S. Climate Alliance funded the Hawai‘i Natural and Working Lands (NWL) Initiative team (including PI Crow and co-PI/Key Person Rivera-Zayas) to identify implementation barriers regarding climate-smart practices in our producer

communities. From 2020 to 2021, this team co-produced a first-order opportunity assessment for NWL climate actions by conducting semi-structured interviews with land managers, watershed partnerships, extension specialists, community leaders, state and federal agencies, researchers, organizations representing historically underserved communities, and non-profit organizations. This assessment uncovered three primary factors tied to barriers to implementation of desired practices (Fig. 1F-1): 1) **land** (tenure in ownership versus lease and lease period, land and soil status including health and invasive species, and landscape position, erosion, and degradation), 2) **education and training** (blending generational, theoretical, and practical knowledge, and accessing information and technical assistance), and 3) **resources** (capital to cover upfront costs, eligibility to grants, loans and incentives; infrastructure for roads, fencing, water, and electricity; labor, supplies of seeds, fertilizers, materials; machinery through rental or ownership, transport, maintenance; and language barriers).

Land	Education and Training	Resources
 • Tenure • Owned • Lease • Landscape • Slopes • Erosion • Soil Degradation • Invasive Species • Weeds • Pest control • Nematodes • Pests • Soil status • Soil Health • Soil structure • Soil Fertility	 • Land Stewardship Options • Education • Access to technical experience • Theoretical knowledge • Generational knowledge • Technical assistance • Language Barrier • Labor • Foreman • Field workers	 • Capital • Upfront Costs • Eligibility to loans, grants and Incentives • Infrastructure • Fencing • Water • Access Roads • Certified Kitchen • Access roads • Seeds and propagation material • Climate and pest resistance varieties seeds. • Improved forages • Fertilizer and Soil conditioners • Machinery • Rental or ownership • Transportation • Maintenance

Figure 1F-1. Although some producers already implement climate-smart practices, background barriers can be divided into three main categories that feed into one another and interact: land, education and training, and access to resources.

Multiple knowledge systems working together make better land use and management decisions that support abundant, resilient landscapes. Healthy soils and healthy societies are intertwined, and our partnership, including data governance, outreach, and policy-driven environmental market framework, will be guided by a long tradition of Indigenous Hawaiian knowledge and practice centered in the core concepts of aloha ‘āina (reverence for a living landscape) and ‘āina momona (the intentional cultivation of abundance). **We know that expanding participation in the Hawai‘i Partnership for CSC through a second phase of recruitment (Phase 2), focused**



on food systems and reaching additional underserved producers and indigenous practitioners outside of our current networks, is critical to addressing existing barriers and therefore the sustainability of climate smart commodities beyond the life of the project.

1G. Geographic focus

The project primary service area is the State of Hawai‘i, inclusive of Hawai‘i County, FIPS code 15001; City and County of Honolulu, FIPS Code 15003; Kalawao County, FISP code 005, Kaua‘i County, FISP Code 15007; Maui County, FISP Code 15009.

1H. Project management capacity of partners

Lynker has a proven approach to ensure maximum management capacity and efficiency, as evidenced by our recent \$137M award from the National Weather Service for scientific support services to the National Centers for Environmental Prediction. We have assembled an excellent team to manage this partnership and its associated funded projects, headed by a Hawai‘i-based project manager (PM) and PI, with a supporting ensemble of climate smart specialists (CSSs) and other technical assistants, some of whom will be embedded within partner organizations. We realize the importance of having teaming partners with the capacity and capabilities to perform and who are fully committed to this project. Our partners and producers all bring many years of experience managing similar projects, and all have agreed to collaborate with our PM and PI to ensure seamless portfolio coordination.

Lynker’s PM Ms. Sarah Pautzke will serve as the primary PoC to the USDA and will be responsible for overall task order delivery, organization, and monitoring of week-to-week activities. She will also summarize task progress/accomplishments, performance metrics, and issues/risks in Monthly Progress Reports (MPRs). Lynker documents all meetings with actions, assignments, and reports per government requirements. Our teaming and subcontracting agreements clearly define our relationship with our subcontractors and subawardees. Our accounting system ensures accurate tracking of subcontractor timesheets and invoices, and our ISO library provides consistent templates for work plans, quality control plans/metrics, checklists, status reporting, and other activities for efficient and consistent task execution.

Principal Investigator Dr. Susan Crow is a Hawai‘i representative to the U.S. Climate Alliance Natural and Working Lands Research Team and worked closely with the Climate Change Mitigation and Adaptation Commission to craft the 2021 Climate Ready Working Paper titled “Nature-based resilience and adaptation to climate change in Hawai‘i”. Dr. Crow served on the GHGSTF from 2016 when it was originally established as the Carbon Farming TF through 2022. She co-leads the collaborative Hawai‘i Soil Health Research Group and is a co-P.I. on a current USDA-NRCS Conservation Innovation grant for On-Farm Soil Health Demonstrations. She recently participated in the AGU panel titled: Challenges and opportunities of managing soil carbon as a natural climate solution and serves on the Science Leadership Group to the North American Carbon Program. Dr. Crow’s academic background provides the technical and field basis for the underlying science of CSC and recent involvement in policy and leadership prepare her for this role with the lateral support of Lynker and our cast of trusted project partners. We have clear team composition, organization, interfaces, and responsibilities (**Table 1.H-1**).



Table 1.H-1. Lynker's task team structure/interfaces/responsibilities are defined and streamlined.

Lynker Personnel	Primary Interfaces	Responsibilities
Task Management and Delivery		
Sarah Pautzke <i>P.M.</i> <i>(Kamuela, HI)</i> <i>Primary Contract PoC</i>	Government POCs	Primary Point of Contact (PoC). Overall task order performance and compliance, status reporting. Rapid issue response, resolution, and future prevention.
	Project P.I.	Overall coordination of project, primary POC.
	Lynker PMO	Tech/operational performance, time reporting/review/QA, risk mgmt. Active subcontractor oversight and management.
	Lynker employees	Operational oversight, team communications, performance monitoring, issue resolution.
TBH <i>Project Coordinator</i> <i>(Hawaii)</i>	Task PM Lynker employees	Assist with invoicing, status reporting, travel arrangements, other coordinating tasks as needed.
Lynker Team Personnel	CSSs Subcontracts Manager Finance and Account Payable staff	Execute work as described in assigned roles. Contribute expertise technical capabilities to project execution.

Lynker's P.M. reviews activities, schedules, deliverables, and performance expectations with our personnel at kickoff and regularly thereafter. Lynker's adept use of G-Suite enables us to share progress monitoring information (dashboards and visualizations) with our employees, partners, and the government. Finally, Lynker's teaming and subcontracting agreements clearly define our relationship with our subcontractors. Our accounting system is compliant within USDA requirements and ensures accurate tracking of subcontractor timesheets and invoices, and our ISO library provides consistent templates for work plans, quality control plans/metrics, checklists, status reporting, and other activities for efficient and consistent task execution.

2 Plan to pilot climate-smart large-scale agriculture and/or forestry practices

2A. A description of climate-smart practices to be deployed

What are the climate smart supporting practices for Hawai'i?

Land use changes One time establishment, yearly monitoring

- Agroforestry and afforestation on working lands (e.g., silvopasture)
- Afforestation/reforestation and sustainable forest management
- Windbreaks
- Conservation tillage and reduced field pass intensity (Low-till or no-till)
- Control invasive species (e.g., fencing, ungulate removal to protect climate-smart practice, plant removal when composting, biochar, anaerobic digestion is used for nutrient and carbon recapture)

Management changes Yearly investments required

- Efficient nutrient management and enhanced efficiency fertilizers
- Crop diversity through rotations and cover crops
- Feed management to reduce enteric emissions
- Climate-smart pasture practices, such as prescribed grazing, legume interceding, rotational grazing and improved forage
- Manure management
- Waste-stream derived soil amendments such as compost, biochar, and anaerobic digestion products
- Improved cropping systems (incl. agroforestry)

Investment in infrastructure Produce or increase capacity, quality, or access

- Waste-stream derived soil amendments such as compost, biochar, and anaerobic digestion production to meet producer needs
- Limiting resources such as on-island seed or feedstock

Phase 1 will fund a portfolio of shovel-ready CSC across forestry, ranching, and crop producers - based on established, strong relationships across and amongst our broad partner network. Phase 1 includes known needs for waste-stream management and amendment production among several partners that will upscale their operations to meet the requirements of current CSC producers, communities, and anticipated demands created by this project (Fig. 2A-1). **Figure 2A-1.** In response to known barriers and our best expert knowledge for meaningful climate benefits in Hawai'i's productive systems, we developed our CSC portfolio with supporting practices in three categories: 1. land use change, and 2. management change, and 3. targeted investments in waste-stream conversion to soil amendments and other limiting resources.

The portfolio for Phase 1 is summarized by sector and geographic across the Hawai'i Islands (Table 2A-1). The targeted working lands were classified as agroforests, cropland, orchard, livestock, and forests. Cropland includes vegetable production (e.g. maize (*Zea mays*)) and specialty crops (e.g. turmeric (*Curcuma sp.*), pumpkin (*Cucurbita spp.*), kalo (*Colocasia esculenta*), mushrooms (*Agaricus bisporus*), banana (*Musa acuminata*). Orchards are mainly fruits and nuts trees including macadamia (*Macadamia integrifolia*), breadfruit (*Artocarpus altilis*), coffee (*Coffea spp.*), cacao (*Theobroma cacao*), rambutan (*Nephelium lappaceum*), and citrus (*Citrus sp.*). Livestock includes beef cattle (*Bos taurus*) and deer (*Cervidae*). Agroforests projects include a combination of specialty crops with fruit and nut trees, fruit and nut trees with livestock, forest products trees with livestock. Forest projects are mainly *Acacia koa*.

Table 2.A-1. Phase 1 portfolio for projects in the sectors of agroforest, cropland, forest, orchard and pasture. With a total 6,260 acres of implementations across the Hawaiian islands.

Incentive	Hawai'i	Mau'i	Moloka'i	Lana'i	O'ahu	Kaua'i	Total
Agroforest	-	26	-	-	55	5	46
Cropland	-	24	-	-	157	5	216
Forest	1,950	50	-	-		-	2,030
Orchard	574	-	-	-	40	326	940



Pasture	1,600	1,340	62	-	48	-	3,299
Total	4,124	1,440	62	0	300	336	6,260
Investment							
Compost/biochar producer	1	1	-	-	-	1	3

The Phase 1 projects encompass the following agricultural landscapes: forests, grazed pastures, silvopasture with wood products, silvopasture fruit trees, orchards, agroforests with fruit trees, forest farming row crops, and specialized crop production. Management systems include conventional, organic, biodynamic, Korean Natural Farming, permaculture, and indigenous agricultural practices. The land being used in this project is designated as agricultural land; meaning is already in agricultural production or is land that will come back into production, having been unmanaged after previous intensive use. In Hawai'i, conservation land may be used for agricultural management, for example, lo'i and biocultural agroforestry systems, when appropriate practices (consistent with many climate-smart practices) are implemented. Proposed practices to implement have been categorized in three main categories: standard practice, standard practice with deviation, and indigenous practices. Standard practices with deviations and indigenous practices will be developed during the YR1, YR2, and YR 3 of the project. For each standard practice with deviation or indigenous practice, our team will assess the producers' needs, and assess it for standardization and environmental assessment and submit it for approval to the National Program Officer (NPO) prior to practice implementation (Table 2A-2).

Table 2A-2. List of pre-identified climate-smart practices aligned with NRCS EQIP practice standards. Proposed deviations to the practice standards and indigenous and other practices are still to be determined during the outreach process efforts towards Phase 2.

<i>NRCS Practices to be implemented</i>	
NRCS Practice Code	Practice Name
314	Brush management
315	Herbaceous weed treatment
317	Compost facility
327	Conservation cover
328	Conservation crop rotation
329	Residue and tillage management, no tillage
336	Soil Carbon Amendment
340	Cover crop
345	Residue and tillage management, reduced tillage



379	Forest Farming
380	Windbreak/Shelterbelt Establishment and Renovation
381	Silvopasture
382	Fence
384	Woody residue treatment
484	Mulching
490	Tree/Shrub site preparation
512	Pasture and hay planting
528	Prescribed Grazing
590	Nutrient management
548	Grazing Land Mechanical Treatment
612	Tree/shrub establishment
660	Tree Shrub Pruning

2B. Plan to recruit and support producers and landowners

Phase 1: Initial recruitment of producers and landowners

In the timeframe allowed for the initial proposal development, our project leadership team immediately worked within our existing networks to identify Phase 1 producers and landowners/managers already interested in climate-smart practices. These shovel-ready producers required resources to supplement and expand implementation already underway, implement known climate-smart practices, create locally-produced waste-stream derived soil amendments, and build new partnerships to support on-island climate smart practices. When developing the original portfolio, our PET considered multiple criteria when developing their producer projects (Table 2B-1).

Table 2B-1. Phase 1 criteria developed during the initial proposal development stage and used during the budget negotiation stage.

Phase 1 Project Considerations	Explanation
Project Climate impact	Projects maximize climate impact based on practice matrix or other.
Project Readiness	Projects are truly ready to go, with results available within Year 1 (est. May 2023-May 2024).



Indigenous practices	Project incorporates native species and/or indigenous agricultural practices. PET to help identify what these are and help test inclusive frameworks to indigenize equity, help NRCS as well prove those concepts.
Innovative practices	Project incorporates practices with potential climate benefit that would not qualify or receive inadequate incentives from existing USDA-NRCS conservation programs, including indigenous agricultural practices, efficient use of on-site crops residues/mulches, commercial agroforestry, etc.
Judicious use of resources	Resources are used in an efficient and effective manner, achieving value-for-money.
Reaches smart goals	SMART (Achievable, Specific, Measurable, Achievable, Relevant, and Time-Bound) - 1 point each except relevant which is part of the first question on climate impact
Early adopter of climate smart practices	Clear track record as early adopter of climate smart practices.
Producer Demographics	
Limited resource farmer/rancher (USDA/NoFO)	Limited-resource farm households are defined as having low farm sales and low household income for 2 years in a row. In 2020, low farm sales meant direct or indirect gross farm sales not more than \$180,300.
Beginning farmer or rancher (USDA/NoFO)	Materially and substantially participated in the operation of any farm or ranch for 10 years or less).
Socially disadvantaged (USDA/NoFO)	Those belonging to groups that have been subject to racial or ethnic prejudice
Veteran producer (USDA/NoFO)	Farmers or ranchers who served in the United States Army, Navy, Marine Corps, Air Force, or Coast Guard, including the reserve components thereof, and who was discharged or released under conditions other than dishonorable, and who has 1) not previously operated a farm or ranch or; 2) has operated a farm or ranch for not more than 10 years.
Women-owned (USDA/NoFO)	Women were principal (having primary responsibility for the day-to-day operation of the farm) operators
Specialty crop producer	Specialty crops include: taro, ulu, banana, avocado, diversified vegetables, cacao, sugarcane, mango, olena, coffee, macadamia nut, mushrooms, and tropical fruits.
Native Hawaiian	Identifies as Native Hawaiian
English Language Learner/Immigrant	Identifies as English language learner/limited English proficiency

The proposal team initially met with 57 producers whose operations covered a total of 6,260 acres. Many fit at least one federal designation of “undeserved”, and have existing relationships with members of the PET. Thirty six of our original Phase 1 producers reported on their



demographics, with one identifying as limited resource (\$11,845 in direct financial assistance), eight as beginning farmer/rancher (\$1,520,747), seventeen as socially disadvantaged (\$12,206,543), two as veteran (\$2,832,243), ten as women-owned (\$4,280,544), and sixty-one as producers of specialty crops (\$12,468,869).

Our team assisted Phase 1 producers in a rigorous project design process. Producers chose the climate-smart supporting practices of interest and then created a financial assistance plan to implement based on the NRCS Pacific Islands Area (PIA) Environmental Quality Incentives Program (EQIP). The same process will be conducted for producers in Phase 2. Phase 1 projects align with current NRCS practices determined by the Hawaii Regional Conservation Partnership Program 2020 Environmental Quality Incentives Program (EQIP). The cost for each practice, by acre, unit, or feet, was calculated using an incentive calculator prepared by our team using the costs recommended by the Hawaii Regional Conservation Partnership Program 2020 EQIP. Some prices per unit were adjusted to the reality of costs and resource availability across the Hawai'i Islands (based on data from our producers and PET). Some practice implementation logistics are expected to require minimal changes due to Hawaii's diverse agroecosystems and resource availability. Before implementing the practices, our team will update the climate-smart practices implementation standards as required to ensure the project's cultural, economic, and agricultural reasonability and viability. Then, we will share them with the CSC National Program Officer for feedback and approval. Finally, we will seek approval by a certified engineer or a specialized environmental professional.

Phase 2: Plan to recruit and support producers and landowners

Producer engagement, equity, and governance will be fully addressed in Phase 2, which will be led by our statewide Producer and Practitioner (P&P) Council (composed of producers and practitioners) as well as our Producer Engagement Team (PET) and Equity and Indigenous Innovation (EII) Team from the beginning of the project period. This process involves three stages: the first is based on observation and contextual understanding and referred to as **Kahua, Setting** in Y1. The second, **'Auamo Creation** will come in Y2-4, and create opportunities for sharing and co-learning. The third stage, **Kūkulu Promotion**, is one of promotion and evaluation to gather and share lessons learned in Y5. The three terms used are derived from Native Hawaiian nomenclature and are intended to provide programmatic metaphors based off of indigenous frameworks to ensure equitable coproduction. *Kahua* literally refers to "base or platform" and will therefore focus on identification of the current landscapes of practice in Hawaii as well as focus on developing foundations of trust with practitioner communities. *'Auamo* refers to a tool that is used to distribute weight evenly and will therefore focus on the distribution of resources after relationships and capacities have been developed. *Kūkulu* literally means "building" and will focus on building enduring partnerships and projects that have been established via initial investments during Phase 2. These three terms have often been used when building beloved spaces that are intended to be passed along generations. It is in spirit and intention we hope to replicate in this project. The work plan associated with this approach is detailed below.

The EEI Team will be led by the UH Office of Indigenous Innovation (UH OII) with support from O'ahu Agricultural and Conservation Association (OACA) and all project partners. The P&P Council will be composed of producers and practitioners from diverse, membership-based

organizations, private industry, and established non-profits and can engage the breadth and depth of Hawai'i agriculture. The P&P Council and EII Team will help intentionally build stronger relationships amongst all project partners and under-served producers and practitioners – including Native Hawaiian practitioners, socioeconomically underinvested regions/communities, English language learners producers, women producers, and small producers.

The EII Team will center their activities on existing regular meetings and planned outreach events supported through the PET. Existing regular meetings include annual All-Hands convenings and quarterly CSS meetings. The PET members each plan to hold outreach events with their producers and communities throughout the project period. These events will provide coordinated opportunities for the EII Team to engage directly with producers via the PET. Additionally, the CSS team will assist with one-on-one meetings or outreach as needed. Annual All-Hands convenings will play a particularly important role in our collective understanding, evaluation, and adaptation while we support Phase 1 and recruit and support Phase 2 producers and practitioners.

Annual Convening Process. Annual, All-Hands convenings will bring together all members of the project teams, producers and evaluation experts. Hybrid participation will be a key feature, using LAVALab CyberCANOE through the University of Hawai'i, in offering accessibility and representation consistently year over year with the foundation of each annual convening being grounded on the island in which it will be physically held (Fig. 2B-1). The Annual convenings will use the technology CyberCANOE (Cyber-enabled Collaboration, Analysis, Navigation and Observation Environment) which are multi-screened computer environments to connect those who can't travel. Convenings will take place in Y1 Q2, in Q4 in Y2, 3 and 4 and in Q3 in Y5. The Y1 CSC core group led by OII to understand the collected efforts to lead within the next few years understanding the shared understanding of our responsibility as a team and each team and project member responsibilities. This process will provide reciprocity for the project core team with the P&P and other participants. Additionally to the core team, a section of the Y1 Convening will focus on introducing the P&P organization to the project. Convenings on Y2 and Y3 focus on a core project for tracking annual milestones. Convening in Y4 will include another section of P&P organizations to confirm the reciprocity and equity of the project from Y1 to Y4. During the final convening, Y5, the team will provide the final evaluation.



Figure 2B-1. CyberCANOE (Cyber-enabled Collaboration Analysis Navigation & Observation Environment (Kawano, 2017) have been deployed at several locations in Hawai'i- including the UH West O'ahu and UH Hilo for remote connection to the O'ahu-based LAVALab at UH Mānoa.



A primary purpose of the annual All-Hands convenings is to establish a solid foundation of relationships and shared understanding, grounded in ‘āina. Providing an immersive, intentional space for partnership contributions and learnings to be shared and for the producers & practitioners voices to be centered. To be together and be of service to ‘āina, experience and learn from Hawaiian perspectives and indigenous knowledge, share techniques, tools, challenges, learnings and promote socio-ecological wellbeing in individual and collective work. The convenings will offer a variety of spaces and learning activities to experience producers and practitioners initiatives on site.

Draft Convening Outcomes During our time together, participants will: Learn from ‘āina. Be of service to ‘āina. Experience and learn from Hawaiian perspectives on ‘āina (“resource management” vs pono / aloha ‘āina). Learn from indigenous and cultural perspectives from our diverse farming communities that have roots in the Pacific, East Asia and other contexts. Experience ritual and ceremony as a powerful tool to establish shared context and sacred spaces. Practice listening deeply to others’ stories, Practice telling their own stories, Practice telling (k)new stories, Be introduced to 1) skills, techniques and approaches for climate smart commodities, 2) the framework of cultivating emergence to accelerate weaving together contemporary practices with indigenous innovation, 3) current strategies deployed to create conditions conducive for long term, sustained implementation and adaptation of climate smart commodities, 4) a systems-level view of the eco-socio-economic systems. Understand strategic importance of project goal setting, data tracking & reporting towards creating conditions conducive to project goals. Receive literary resources exploring continental & island (non-dominant) perspectives on cultivating transformation (Emergent Strategy x Kaiaulu). Learn self-care practices that can be applied in our individual & collective work. Leave feeling rejuvenated, accomplished, clear, connected, inspired and nourished. Build relationships within and across partnerships, producers, and practitioners.

Draft process for 2-day annual convenings Day 1: PILINA & PROCESS - Launa: Welcome, introductions, setting the space, aloha circle; Agenda review, overview of CSC; P&P Council introduce projects/practitioners/producers on host-island; Host-island producers/practitioners share about projects (challenges, needs, opportunities); Lunch Break; Breakout Group - Cross-Pollinating Practices (brainstorming issue areas/opportunities that came up before lunch); Share Back; Site walk through of a host project; Pau hana gathering. Day 2: PURPOSE & PRACTICE - Opening, grounding, agenda; On-site climate-smart work day; Lunch Break; Next steps, follow-ups, closing reflections; Pau.

Project Metrics and Evaluation. External evaluation will occur to ensure the process is successful according to internally developed metrics of success and alignment with the OII emerging goals related to the importance of Native Hawaiian land-based practices. The stated intent of the OII is to position bio-centric traditional practices as sciences and technologies that are vital to addressing a holistic array of contemporary ecologic, economic, and social challenges. The OII also understands practitioner communities as the holders of these sciences and therefore works with them to co-produce projects that allows them to identify ways that their organizations can continue and scale their work via receiving sustained financial and political support. This focus on the nexus of communities of practice and contemporary, equity-centered innovation is intended to develop systems shifts in Hawai‘i’s economic, education, and

ecological resilience. Therefore, OII's metrics of achievement focus on cultural continuity, ecological conservation, economic development, and educational attainment.

In alignment with project goals and data verification and reporting, the team will identify overarching project metrics related to equity in the food system and climate change that are either in use by partner organizations currently or have been recommended, whether in a publication or through community-based practitioners. To create a set of metrics that are both meaningful and useful, the focus is on data with explicit ties to food and agriculture in Hawai'i as well as indigenous practices used for thousands of years. The evaluation will also consider how the project contributes to wider outcomes related to:

- **Food and farm business viability**, which includes factors influencing people's ability to successfully own and operate food- and farm-based businesses. Subcategories of this theme include indigenous and underserved demographic ownership of land or means of production and business support.
- **Food security & climate change movement**, which is meant to measure equity in who is leading and benefiting from these movements themselves. Metrics touch on topics such as indigenous and underserved demographic leadership and financials.
- **Food access**, which focuses on individuals' barriers to consuming the food they deem healthy or want, because of economic resources, knowledge, or the environment around them. Subcategories of food access include food security/hunger, food at schools and early childhood education sites, the community food environment, and food education.
- **Equity and climate change performance metrics** Qualitative discussion of effect on economic displacement, county-wide and in specific areas of projects. Precipitation (extreme high): Amount and percentage of projects located in areas with high exposure to flooding and landslides. Heat: Amount and percentage of projects located in areas with high temperatures. Heat: Amount and percentage of projects in areas with low tree canopy coverage. Sea-level Rise: Amount and percentage of projects in areas affected by sea-level rise.
- **Biodiversity and native species** in climate vulnerable locations and low-income communities.
- Others to be determined by the project team.

1. Kahua Setting: Project Start Up and Inreach (Y1)

In this Stage, the EII team will lead the following deliverables:

- **Framework for governance and producer engagement developed (Y1, Q2).** Kahua will include a landscape analysis, which is a gathering and review of local and national social and environmental (socioecological) data/processes/tools. Multiple examples of this process exist and will be built on:
Example References:
 - (Hawai'i) Kulana Noi'i <https://seagrant.soest.hawaii.edu/kulana-noii/>
 - (Hawai'i) Hālau 'Ōhi'a <https://www.kekuhi.com/halau-ohia>
 - (Continental U.S.) Movement Generation's Propagate, Pollinate, Practice Toolkit <https://movementgeneration.org/propagate-pollinate-practice-curriculum-toolkit/>

- (International) Improving Equity and Social Justice Through Agriculture (GIIN / UN) <https://navigatingimpact.thegiin.org/strategy/sa/improving-social-equity-and-justice-through-agriculture/>

Existing practices within the P&P Council will help build a community-based governance framework that centers equity and is relevant and appropriate for indigenous and underserved communities previously identified, to identify existing best practices for community-based governance frameworks that help center indigenous innovation and the knowledge of underserved producers. This process will also inform project-wide decision-making and will consider forms of transparency, safety, and genuine remedies to root causes of inequity. Through this process, we commit to internal equity and processes in order to identify and uplift organizational practices that support equity, growth, and development. The outcomes of the landscape analysis will guide the process of working with producers (and specifically with under-served producers) in Phase 2. Further details on this are detailed in section 2E. The project's equity and justice framework embedded within an ancestral, place-based, culturally appropriate, and inclusive framework that positions care for the land, soil, and people as the basis for all abundance and well-being. Development of this framework will initially identify the demographics and equitable practices already served and active within PE organizations. This framework is critical to developing effective, equitable and inclusive governance so that the project contributes to building trusting relationships and lasting partnerships amongst diverse producers and practitioners, helps deepen partner commitments and competency with regards to equity and to ensure ethical engagement with frontline, under-served communities. Overall, the phased approach described immediately below will require annual project-wide convenings in order to facilitate equitable and effective partnerships and relationship building.

- **Producer and Practitioner Council Recruited (Y1 Q2).** This will be drafted, revised and validated at the first annual convening, with the call going out through project team and PET networks.

Draft criteria for recruitment include:

- Active producers or practitioners with 5-7 + years of experience
- Experience implementing climate smart practices
- Geographic representation across the islands
- Identify as under-served in one of the criteria laid out for Phase 2
- Expertise in Native hawaiian approaches to land and agriculture
- Deep relationships with any of Hawai'i's farming communities, including producers and practitioners using English as a second language

The Council will be involved in shaping the overarching process of connecting with producers and will meet on a quarterly basis to provide insight and strategy. Stipends will be provided to facilitate participation of five members meeting quarterly as well as funding for participation in Annual convenings.

- **First Co-Learning Workshop with Organizations completed (Y1 Q4).** This workshop is an introduction to the Hawai'i CSC scope of work and will provide an overview. The

EII team will provide strategic insight into the annual convening planning process and facilitate co-learning workshops with organizations on technical assistance for the implementation of climate smart practices, and theoretical knowledge on climate smart practices for working lands. The co-learning workshops will serve as umbrella training to organizations working with producers in Hawai'i. During the co-learning workshop HARC and PET organizations will lead a training based on the Climate-Smart Training School. The workshop will open space for the organizations to provide feedback and share their knowledge and experience related to the implementation and maintenance of climate smart practices in working lands. Post co-learning, the HARC and PET team will integrate the learned knowledge into the Climate Smart Training Program. Similarly, the OII and OACA team will integrate this knowledge into their ongoing outreach and relationship building.

The EII team will also provide input into the following deliverables during Y1:

- **First annual convening designed (Y1 Q1 and annually thereafter).** The EII team will provide strategic input to annual project convening locations, methodologies and content alongside the Lynker and project team. More on this annual convening process is noted in the following section.
- **Farmer to Farmer (F2F) co-learning designed (Y1 Q1).** Lead by ORCD, PET, HARC, supported by OII, and OACA. In Y1 the F2F meetings will take place in a farm, ranch, or forest on each island. These place-based activities will serve as a venue for other P&P to join and learn about the project, learn about CS practices, current strategies to implement and maintain CS practices, and strengthen the communication between P&P. Furthermore, the F2F activities will serve as a medium to engage and recruit farmers to apply to Phase 2.
- **External evaluation designed (Y1 Q2).** The EII team will provide strategic input into the Evaluation process, including supporting the development of the Evaluation Scope of Work, identification of evaluators and culturally-relevant resources. Further information on the external evaluation is noted above.
- **Ongoing technical assistance** to producers and practitioners will also support producers and practitioners beyond the life of the project, through linking them with markets (Markets team) and funding research support (OACA). Further information on the provision of this assistance is highlighted in Section 2D.

2. 'Auamo Creation: Producer onboarding, co-learning and technical assistance. (Y2-4)

Building on equity and governance processes embedded in Kahua Setting with the FGPE, we will stand up Auamo Creation in Stage 2 (Y2-4) that deepen co-learning to ensure we prioritize under-served producers in accessing incentive payments for their work and opportunities to access markets for their commodities. During this time the EII will lead the following processes:

- **Phase 2 RFP and Roadshow implemented (5 in-person events) (Y2, Q1-4).** Utilizing in-person site visits, online meetings, and outreach work, we will develop an accessible and participatory collaborative onboarding process for new producers that has the hallmarks of a "request for proposals". We will develop and launch an RFP in Year 2 in conjunction with input from the P&P council and project team. Preliminary criteria will

be validated with project partners and culminate in a ranking system utilized as part of an RFP process for Phase 2 (Table 2B-2).

Table 2B-2. Preliminary selection criteria for Phase 2 to be further developed during Kahua Setting.

Phase 2 Project Considerations	Explanation
Project Climate impact	Projects maximize climate impact based on practices matrix or other.
Project Readiness	Projects will be ready to go in Y3 Q1.
Indigenous practices	Project incorporates native species and/or indigenous agricultural practices.
Limited resource farmer/rancher	Limited-resource farm households are defined as having low farm sales and low household income for 2 years in a row. In 2020, low farm sales meant direct or indirect gross farm sales not more than \$180,300.
Beginning farmer or rancher	Materially and substantially participated in the operation of any farm or ranch for 10 years or less).
Socially disadvantaged	Those belonging to groups that have been subject to racial or ethnic prejudice.
Veteran producer	Veteran producer.
Women-owned	Women were principal (having primary responsibility for the day-to-day operation of the farm) operators
Native Hawaiian	Identifies as Native Hawaiian
English Language Learner/Immigrant	Identifies as English language learner/limited English proficiency
Area impacted by climate change	Defined through GIS data
Economically under-invested area	Defined through USDA criteria and/or other data sources.

Reviewers will be drawn from the project team, P&P Council and externally. Match can also be determined using this ranking process, with points awarded per category to reduce match burden on underserved producers and will be determined as part of the RFP process. This RFP will include a short, one-page application as part of the first round for selection, with a site visit and interview for applications that advance to the second round. All PET and project partners will be involved in the development and roll-out of this call, which will be given as a Roadshow. This roadshow process will involve taking the CSC project and Phase 2 opportunity out into communities, with in-person and online events to help producers learn about the opportunity and answer any questions about the application. This process is similar to that recently undertaken by the County of Honolulu for their agricultural grants, in which several PET organizations participated, and which was successful in broadening the reach of RFP to underserved communities. The roadshows will offer opportunities for producers and practitioners to look inside the

project to assess whether available incentives could meet their needs and align with their work. The roadshow activities will be coordinated with Y2 **F2F training events**.

- **F2F co-learning implemented** (5 events in Y2 and 5 events in Y3). Led by ORCD, PET, HARC, OII, and OACA, the F2F meeting will be coordinated with the RFP roadshow in Y2 and developed to coincide with other project activities as much as possible in Y3-4.

Along with technical support focused on climate smart best practices for farming, ranching and forestry, there will be a coordinated effort to cocreate a community of practice for participants to ground into and navigate from. The framework will be place-based, culturally relevant, and have an ethos that is genuinely considerate of adversity experienced by underserved communities and practitioners. Practitioners will be invited to share and co-create through their unique lived experiences and community-based expertise. Socio-ecological health and wellbeing will be a major component of the equity lens cultivated and practiced amongst participants.

3. Kūkulu Promotion: Sustainability and Evaluation (Y5).

During this phase, the project will focus on synthesizing co-learning and developing sustainability plans for CSC producers.

- **Sustainability plan.** Grounded in relationships, elevated by co-creative processes and the cross pollination of participants in Phase 1 with Phase 2 will support a sustained, and ideally, regenerative network of abilities that will go beyond the 5 year project, towards multigenerational capacities. The plan will be guided by the CSC producers, their experiences, successes and learnings throughout the 5 year project. The synthesis between the social, ecological, and economical components will reflect both the importance of technical expertise and a deeply rooted ethos of governance and value systems centering equity and indigenous innovation. Laying a solid foundation that is both globally relevant and locally prosperous will provide a runway for continued opportunities, interest, and capacities to be fostered with the CSC sector. The plan will embody the abilities of CSC producers and spark future potential opportunities for increasing interest and capability in expanding markets and practices.
- **Final Evaluation processes.** An external evaluator will be tasked with supporting a culturally relevant analysis of project accomplishments and alignment with OII metrics of success. The external evaluator will already have a solid foundation of understanding of OII metrics as well as a cultural competency within the area of environmental and social equity perspectives.

2C. Plan to provide technical assistance, outreach, and training

During year 1, we will launch a Climate-Smart Training School conducted at HARC and offered through Outreach College for continuing education credits at UH Mānoa. The Climate-Smart Training School aims to capacitate professionals in the disciplines of soil sciences, environmental sciences, and agriculture to further understand agricultural systems from a

technical perspective. The program, which will be performed in a hybrid format, will include a set of *virtual and in person* training focused on theoretical and technical aspects of measuring, monitoring, reporting and verification of economic outcomes, soil health, soil C, and GHG. Furthermore, the School will provide agronomic training and understanding of on-farm logistics focused on climate-smart practice implementation in cropland, pasturelands, agroforests, orchards and/or forests. The curriculum will be led by Dr. Rivera Zayas, and developed in collaboration with the PET team, key producers and practitioners across Hawai‘i, and the EPII team. Course content will include information from the NRCS PIA EQIP, the PIA Agricultural Management Assistance, Conservation Stewardship Program, Agricultural Conservation Easement Program, and the Conservation Assessment Ranking Tool (CART).

The curriculum will be tailored during Y1 Q1-2, based on theoretical and technical knowledge gathered during current and previous partnerships lead by USDA NIFA Foundational Programs and Hatch Capacity Grants, student WSARE, Agricultural Research Service cooperative agreements, and NRCS cooperative agreements and Conservation Innovation Grants awarded to PI Crow, key personnel Jonathan Deenik and Tai Maaz since 2011, and extension agents Josh Silva, Jensen Uyeda, Amjad Ahmed, and others. This award is the deployment and scaling up of multiple efforts since PI Crow joined UH Mānoa as research faculty in 2009. Further, this award joins the current and previous USDA funded work with Hawaii-specific policy work of PI Crow and co-PI/Key Person Rivera Zayas. The first training program will be launched by Y1 Q3 for the initial 5 CSSs. During the Y1 Convenings, the Climate-Smart Training School will be hosting a P&P organization activity at the HARC experimental station. Here, organizations leaders will join for a co-learning space in which the Climate-Smart Training School curriculum will be revised to incorporate further training specific to Hawaiian agricultural systems to guarantee the CSSs will be able to provide the best technical assistance to producers. By the end of Y1 and early Y2, the project will run a F2F activity, 1 per Hawaiian island. During this activity, led by Oahu RC&D, HARC, OII, and OACA, the producers will be able to see results from the practice implementation from Phase 1 producers, and share experiences on climate-smart practice implementation, learn about our project and join our portfolio of producers to apply for Phase 2. Furthermore, Climate-Smart Training Program will perform quarterly meetings with the CSSs; this will serve as quarterly technical training to reinforce the services provided to the producers.

Climate Smart Specialists scope of work. We have identified four areas of responsibility for all place-based CSSs: 1) on-farm implementation technical assistance, 2) collecting soil and GHG samples and shipping them to UH, 3) community outreach, and 4) data reporting. Some CSSs will be directly embedded within our PET partner organizations and producer communities. This project requires specific metric tracking and recordation across diverse project types, and soil and GHG sample collection, and shipping. Our training program will include online tutorials, in-person demonstrations, certification, and annual gatherings for sharing, learning, and adaptable continued training. Dr. Johanie Rivera Zayas, together with the Interisland Field Technician, will lead program development and work with P.M. Sarah Pautzke, to serve as a bridge between UH Mānoa, the Hawai‘i PET, the CSSs, partner organizations, and contractors. This training program will involve producer-centered education regarding implementation and benefits of CSP material. In addition to soil and GHG sample collection and transport and reporting metrics, we will charge CSSs with on-farm assistance, quarterly outreach, and regular communication back



to project leaders and collaborators developing measurement and monitoring protocols and decision support tool modeling parameters. A Partnerships and Management Team led by Lynker will ensure consistency among the CSSs and provide place-based, on-site assistance, sampling, reporting, and community outreach and feedback to the UH Mānoa-based Project Development and Technical Support Team. Lynker's P.M. will coordinate with partner organizations to embed CSSs or assist internal CSSs supported via these funds with key tasks.

Climate-Smart Training School Trainees.

- Interisland Climate Smart Specialist. The Interisland CSS (IICSS, Fig 2C-1) will link UH Mānoa, HARC, and the CSSs across the islands. Embedded in UH Mānoa at O'ahu, the Interisland CSSs will bridge the MMRV efforts to the UH laboratory facilities and provide technical support to the CSSs in the rest of the islands. During YR 1 and YR 2, the InterIsland CSSs will provide full technical support to the producers in Kaua'i and Moloka'i.
- Climate Smart Specialists. Proposed CSSs, include CCS1 in Hilo, Hawai'i Island (in red, Fig 2C-1), CSS2 in Kona, Hawai'i Island (in gray, Fig 2C-1), CSS 3 in Maui (in green, Fig 2C-1), CSS 4 and 5 in O'ahu (in orange, Fig 2C-1). The InterIsland CSS will receive support from CSS 3 and CSS 4 and 5 to provide service to Moloka'a and Kaua'i. By YR2 Q2, we expect to have a CSS in Kaua'i (In blue, Fig 2C-1), Moloka'i and Lana'i.
- P&P organizations. Producers and practitioners (P&P) organizations leaders will be able to join the program during the project convenings on YR 1 and YR 4.
- Additional trainees. Members of the natural and working lands organizations, such as CTAHR extension agents, federal agencies, and other organizations, will be able to participate in continuing education.
- UH Mānoa students. Once the UH Mānoa Outreach Project is approved, students can join the program for credits.



Figure 2C-1. Current scope of work across Hawai'i. The Interisland Climate Smart Specialist (IICSS, in purple) will be located in O'ahu, and provide services to Moloka'i and Kaua'i, until Phase 2. CSS 1 will provide service to the 12 implementation sites in the Hilo area, Hawai'i Island, and will cover producers in the area during Phase 2. CSS 2 (in grey) will provide service to the 14 implementation sites in the Kona area, Hawai'i Island, and will cover producers in the area during Phase 2. CSS 3 (in green) will provide service to the 9 implementation sites in Maui and will cover producers in the area during Phase 2. CSS 4 and 5 (in orange) will provide service to the 23 implementations sites in O'ahu, and will cover producers in the area during Phase 2. CSS 6 (in green), 7 and 8 (in blue) are expected to start by Y2 Q2 and cover Kaua'i, Moloka'i, and Lanai.

Climate Smart Specialists role in the agricultural community. (Table 2C-1) By YR1, the project team will prepare a matrix to rate the estimated climate benefits of the climate-smart practices of interest for producers and practitioners in Phase 2. The matrix will include current known data for soil C and GHG emissions, available infrastructure across the islands to facilitate the implementation of the practices, and the NRCS CART. During YR 2 and YR 4, the F2F outreach process will be conducted on each island. The CSSs, Rivera-Zayas, and the PET team will assist ORCD F2F in supporting technical training for agroforests, croplands, forests, orchards, and pasturelands based on the Climate Smart Training School. During the F2F co-learn space, Rivera-Zayas will follow up with the local team of CSSs and CTAHR extension agents and include knowledge in the training curriculum.

The YR 1 F2F activity will allow our CSSs team to:

1. Get introduced to the local agricultural community,
2. Participate in the co-learning process to understand producer's interests, needs, and experience with climate smart practices,
3. Recrute producers for phase 2,



4. Identify current availability and needs on infrastructure to support climate smart practice implementation, and
5. Identify further collaboration and potential members for the project to fulfill the CSSs positions for Phase 2.

During the F2F activity, the CSSs, OII, OACA, and PET teams will identify the climate-smart practices of most interest among farmers and ranchers, and the PET team will have a Portfolio of potential producers focused on minority producers and practitioners for Phase 2. Rivera-Zayas, InterIsland CSS, and CSSs work will collaborate directly with the EII team to support the PET team to deliver a CSS recruitment for Phase 2 implementation informed by and centering indigenous innovation, using an equity lens that is ancestral, place-based, culturally appropriate, and inclusive. A framework that positions care for the land, soil, and people. Information will inform CSC by deepening the presence of the unique diversity and complexity that Hawai'i encompasses from both a social and ecological perspective. Indigenous-island innovation specific issues and opportunities will be a cornerstone of recruitment such as considering wholistics systems like rehabilitating ahupua'a as part of a climate smart commodity. By YR 2 Q2 to Q4 and YR 3 Q1 and Q2, the EII team matrix will be available for the P&P Council to get a consensus on which producers will join Phase 2.

Simultaneously, by Y2 Q2, Rivera Zayas will deliver an economic case scenario based on Phase 1 implementation projects and previous information collected through previous work on CIG On-Farm Trials with Dr. Deenik PI. This economic case scenario will be developed in collaboration with Dr. Makena and Dr. Olson to be considered as part of the Policy and Environmental Markets. The economic case scenario main objectives are to 1) be considered into the Policy and Environmental Markets, and 2) to provide NRCS with a guideline of producers and practitioners needs, interests, and expenses related to the implementation of conservation and climate smart practices. The EII Team will co-create a framework and practice in YR 1 and 2 alongside the P&P Council to be incorporated in YR 3 to 5 (Table 2C-1).

Table 2C-1. Timeline for major Climate Smart Training School Activities

Task or Deliverable	Y1				Y2				Y3				Y4				Y5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Create Climate Smart Training Program Curriculum	X	X	X	X		X		X		X		X					X	X		
Updates to the Climate Smart Training Program				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Create Climate Smart Training Program incorporation to the project Portal with NRDS	X	X	X		X				X				X				X			
Climate Smart Specialists Training		X				X				X				X						



Quarterly CSS Inreach				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Submit Economic Case Scenario					X	X														
Annual Convenings and P&P Co-Learning		X													X					
Farmer to Farmer and RFP Roadshow (all islands)					X	X	X	X	X	X	X	X								
Phase 1 CS Implementation			X	X	X	X														
Phase 2 CS Implementation							X	X	X	X	X									

2D. Plan to provide financial assistance for producers and landowners

Our PET and project personnel have extensive experience using incentives calculators to create transparent financial structures for incentive payment-based implementation projects. We developed Phase 1 project plans using an incentive calculator that is based on rates found in the Pacific Islands Area Environmental Quality Incentives Program (PIA EQIP). To ensure actual costs to our producers are covered, some standard EQIP rates were updated for current market-values and additional costs specific to Hawaii. In collaboration with our producer organizations, extension, and regional NRCS staff, we increased rates when necessary to meet current average market price of inputs (e.g., compost), transportation costs to access resources (e.g. access to resources in Molokai costs about 20% more than for example Oahu), and current resources available (e.g., heavy equipment, compost spreader).

Development of incentives calculator: An Excel spreadsheet was developed to calculate the cost incentives by practice. Producers filled out the spreadsheet to determine their grant requests. The spreadsheet, internally referred to as the “NRCS incentives calculator,” lists primary practices of interest by Hawaii producers and practitioners identified through UH Manoa Hawaii Soil Health Research Hui project efforts. Each practice has a spreadsheet explaining the code, what encompasses implementing the practice, and the total dollar amount per acre as determined by the Hawaii Regional Conservation Partnership Program 2020 Environmental Quality Incentives Program (EQIP). In some cases, our team looked at examples based on “The United States Department of Agriculture, NRCS Practice Scenarios for Hawaii 2023” (<https://www.nrcs.usda.gov/sites/default/files/2022-11/Hawaii-Scenarios-23-payment-rates.pdf>).

Use of incentives calculator to develop the financial assistance in Phase 1: Our Producer Engagement Team (PET) reached producers within their networks across the Hawaii Islands. Interested producers and practitioners (hereinafter referred to as “producers”) were informed about the logistics of the project. 1) Farm Service Agency (FSA) registration. Dr. Rivera-Zayas provided the FSA registration package to producers to clarify concerns about the information



required during registration. This step was the first action for producers to move forward in the CSC collaboration process. 2) Our PET team explained how this funding targeted minorities to this new group of producers. Producers were asked to identify their operations within the minority categories: limited resource farmer/rancher, beginning farmer or rancher, socially disadvantaged, veteran, women-owned, or specialty crops. About ten producers decided not to continue as collaborators during this process, as they did not self-identify as fitting in one of the minority categories. 3) Our PET team discussed the logistics of participating in the CSC project with this new producer group, including:

- a. Allowing our research group to gather baseline data before the practice is implemented;
- b. Working with the Climate Smart Specialist to implement the practice as stipulated in NRCS EQIP Practice Standards or as discussed and previously approved by the Hawaii CSC Producer and Practitioner Council. The Hawaii CSC Producer and Practitioner Council will ensure the successful implementation of the practices as agronomically, economically, and culturally appropriate for Hawaii producers;
- c. Producers will allow the Hawaii CSC research team to collaborate with our team and allow monitoring of the sites during the project period. Furthermore, the producers pre-agreed to enable our team to use the data gathered during the project period for different scientific and data management purposes. Once the project starts, our research team will request permission from the Institutional Review Board to ensure a safe and ethical process;
- d. Producers are expected to join the CSC market developed during the project process.

Dr. Rivera-Zayas and the PET team explained to each producer what the “NRCS Incentive Calculator” is, how our team uses it, and the logistics of each practice of their interest. During the process, the PET team encouraged producers to contact the local NRCS agent to learn more about EQIP and how it works. Additionally, Dr. Rivera-Zayas provided the Hawaii Regional Conservation Partnership Program 2020 Environmental Quality Incentives Program as requested. Rivera-Zayas and the PET team met with the final 61 producers, discussed practices for the 66 projects, and ran the “NRCS Incentive Calculator” for each. Producers could examine results and voice concerns about the dollar amount calculated based on the “NRCS Incentive Calculator” before accepting the results. Some producers had resources in place; therefore, they requested less than the total amount calculated by the incentive calculator; some voiced that the incentives calculated were not enough but agreed to participate and cover the additional costs. Except for those producers that will cover the additional costs of executing the practices, a match of at least 4% was requested for the rest of the producers.

Finally, producers that agreed to the four requirements mentioned above were approved to participate in Phase 1. A letter of support was requested to finalize the process.

Table 2D-1 describes the total scope of CSC practices to be implemented in the 66 plots in Phase 1 —using average dollar amount per practice established by NRCS PIA EQIP the federal estimated total cost is \$30,923,413, and the estimated federal request of \$11,433,138.28.

Standard Practice	EQIP Code	# of Producers	\$ /unit	# of unit	Unit	Total Federal Request
Nutrient management and	157	10	\$3,116.74	10	plan	\$31,167



implementation activity						
Brush management (Oahu)	314	6	\$1,457.56	495	acre	\$721,491
Brush management (Maui)*	314	6	\$1,300.00	1040	acre	\$1,352,000
Herbaceous weed Mgmt	315	4	\$267.07	139.5	acre	\$37,256
Composting facility	317	1	\$9,150.09	1	unit	\$9,150
Conservation cover	327	8	\$1,563.48	87	acre	\$136,023
Conservation crop rotation	328	1	\$380.72	2.25	acre	\$857
No till	329	1	\$43.03	20	acre	\$861
Cover crop	340	10	\$954.78	305.75	acre	\$291,924
Residue and tillage	345	1	\$53.40	20	acre	\$1,068
Forest farming	379	13	\$4,127.50	108.2	acre	\$446,596
Multi-story cropping	379	1	\$4,127.50	15	acre	\$61,913
Windbreak/shelterbelt establishment and renovation	380	2	\$11.46	5625	ft	\$64,463
Silvopasture	381	3	\$184.82	632	Enclosed tree	\$116,806
Fence	382	1	\$2.00	6,580	ft	\$13,162
Fence	382	3	\$6.00	10875	ft	\$65,250
Fence	382	1	\$9.00	1866	ft	\$16,794
Fence	382	1	\$11.00	3168	ft	\$34,848
Fence	382	1	\$36.00	1056	ft	\$38,016
Mulching	484	14	\$11,570.56	55	acre	\$636,381
Forage and Biomass planting	512	3	\$694.82	7.5	acre	\$5,211
Forage and biomass planting	512	5	\$833.79	407	acre	\$339,353
Prescribed Grazing	528	6	\$1,889.07	280	acre	\$528,940
Nutrient Management	590	12	\$473.77	124.75	acre	\$59,103
Tree/Shrub Establishment	612	5	\$3,514.00	33.5	acre	\$117,719
Tree/Shrub Establishment*	612	4	\$2,500.00	2000	acre	\$5,000,000



C additions (Oahu)*	336	1	\$740.00	15	acre	\$11,100
C additions (Oahu)	336	12	\$1,458.00	292.25	acre	\$426,101
C additions (Multiple Islands)	336	6	\$3,563.00	229.8	acre	\$818,777
Molokai Inflation rate 20%						\$50,812
Total						\$11,433,138

Use of incentives calculator to estimate the financial assistance in Phase 2: The federal request for Phase 2 is \$2,818,478. The practices and costs described in Table 2D-2 represent estimates of practice names, and costs of practice implementation will be informed by the outreach process, minority and indigenous producer's feedback, and economic analysis of practice implementation and available resources. We will target historically underserved producers in Phase 2 and anticipate smaller average acreages per producer, broadening inclusion and diversity through project outreach efforts and allowing for a higher producer-to-dollar ratio than in Phase 1. Therefore, we anticipate a minimum of 15 producers in Phase 2 with funding ranging from \$10,000 to \$300,000 each, although specific dollar amounts per producer will be determined through the RFP and selection process. The specific Phase 2 practices and implementation logistics, including revised and newly identified procedures and practices, will be determined through the outreach process and will incorporate producer input and lessons learned from project results in years 1 and 2. Our team envisions Phase 2 producers to fit three main tiers based on the amount of their implementation plans and federal request to ensure equitable access:

- Tier 1: \$10-50 K
- Tier 2: \$50-150 K
- Tier 3: \$150-300 K

Table 2D-2. The following table describes an estimate of Phase Two practices, including indigenous agricultural (Native Hawaiian) practices, along with an estimated breakdown of how the Phase 2 federal request may be allocated.

Standard Practice*	EQIP Code	Acreage*	\$/unit*	Unit	Total Federal Request*
Nutrient Management	590	301	\$473.77	acre	\$142,605
Silvopasture	381	2,500	\$184.82	Enclosed tree	\$462,050
Fence	382	40,086	\$5.58	ft	\$223,680
Brush Management	314	200	\$1,489.07	acre	\$297,814
Forest Farming	379	100	\$4,127.50	acre	\$412,750
Mulching	484	25	\$11,570.56	acre	\$289,264
Conservation Cover	327	110	\$1,563.48	acre	\$171,983



C additions (Oahu)	336	275	\$1,458.00	acre	\$400,950
C additions (Hawai'i, Maui, Moloka'i, Lana'i, Kaua'i)	336	100	\$3,562.80	acre	\$356,280
Cover crop	340	64	\$954.75	acre	\$61,104
				Total	\$2,818,479**

*means an estimated number of acreages, cost per unit for practice implementation, and total estimated request. Real numbers are to be determined as the Phase 2 outreach process unfolds and minority producers' needs are assessed.

**This is off slightly due to rounding. Final numbers will not be known until after the RFP process is completed.

2E. Plan to enroll underserved and small producers

Our entire portfolio is inclusive of underserved and small producers. 90% of our Phase 1 producers self-identified as fitting at least 1 indicator of underserved: 5 limited resource farmer/rancher, 11 beginning farmer/rancher, 29 as socially disadvantaged farmer/rancher, 1 veteran, 18 women-owned farm/ranch, and 47 as specialty crop producers. Further, Phase 2 as described above is focused specifically on equity and inclusivity of underserved producers and indigenous practitioners who currently encounter barriers to accessing available support. As diverse as our established networks and Phase 1 producers are, we recognized that the short time frame to respond to this funding opportunity did not allow an adequate opportunity to include smaller, less well-connected producers - many of whom are indigenous, immigrant, minority, and/or homestead farmers and livestock producers. In this regard, our overarching goal is to fund a truly inclusive and equitable suite of projects via comprehensive community-based outreach and co-production. We have learned of at least 235 producers interested in being considered for Phase 2 funding and participating in governance processes to be developed during YR1. Given this interest, and to stay committed to equitable practices, we made \$2 million in project monies available for Phase 2 and to mobilize external resources to increase the amount of incentives that can be offered. We anticipate that Phase 2 projects may be lower acreage, but critically important to inclusivity, access, and equitable outcomes. OACA and OII will also undertake three outreach trips to Moloka'i, Lāna'i and Kaua'i to enhance the geographic equity and reach to smaller islands.

3 Plans to measure/quantify, monitor, report, and verify

3A. Approach to GHG benefit quantification

The UH Mānoa Hawai'i Soil Health (HSH) Research Team currently consists of two senior PIs (Crow and Deenik), a junior faculty (Maaz), and a team of technicians and students. In a previous USDA NIFA funded data synthesis and networking grant (PI Crow and Deenik), a custom web hub was built to translate and transfer our growing scientific knowledge of soil health to a new network of stakeholders including farmers, researchers, and policymakers, etc. A web-based Volunteer Geographic Information Systems (V-GIS) platform was developed to 1) provide localized soil information and customized decision-making support; 2) collect spatially explicit soil samples, soil observations and feedbacks from farmers to monitor soil conditions; and 3) facilitate knowledge dissemination and outreach activities within farmers and communities. The Hawai'i Soil Health tool is currently in the beta testing phase with our Hawai'i-based network, extending to American Samoa, Pohnpei and Puerto Rico.

Empowering producers to implement climate-smart practices and improve soil health and productivity requires information, support, and recommendations that are individualized and accessible yet routine. Each project/user will be registered in the existing user-based, privacy controlled, Hawaii Soil Health Webtool and the portal used to initiate sample analysis. The underlying database collates user-derived data with lab-derived soil carbon, health, and GHG flux data. The NRDS dashboard will pull project data from the broader HSH database (which currently holds over 800 unique sample units) to drive the aggregated project console and embed ecosystem models for the predictive and monitoring systems. Led by PI Crow, the UH Mānoa-based HSH team will oversee MMRV and development of a decision support tool for Hawaii's systems that leverages ecosystem models (a classical two-pool land carbon model, tied into MEMS model when available) to enable the Climate Benefit of Sequestration computation for warming benefits of the system. Additionally, we will create a public-facing visualization of the aggregated outputs in the UH Mānoa LAVA Lab (Jason Leigh and team) for 3-D view of the climate-smart landscape.

1. Models

Before climate-smart practices and monitoring are implemented, the likely climate benefit of the additionalities (i.e., above and beyond business as usual) is typically assessed with modeling, often embedded within existing decision support tools. However, functional soil carbon and ecosystem models are not currently available for Hawaii, and so our team must develop and deploy them.

a. Protocols for Archetypes

Key drivers of soil health, C, and GHG flux in Hawai'i include broad mineralogical classification (i.e., high activity clays or HAC, low activity clays or LAC, or poorly and non-crystalline minerals or PNCM) and legacy land-use history (specifically intensive mono-crop agriculture or none), and the soil disturbance level associated with contemporary practices (Crow et al., 2022). These factors are currently being integrated into the development of a soil health index, which should set minimum and maximum benchmarks and weight parameters according to relevant and fair standards (Hubanks, 2019; Crow et al. 2023, Maaz et al., 2023).

Likewise, we will select model field sites for each key archetype of importance to our portfolio and Hawai'i's productive, climate smart landscapes (up to 12) to develop the minimum measurements standards for monitoring. For soil GHG flux, a gridded approach with up to 50 nodes for return measurement and up to 14 return sampling dates a year will be used for intensive measurements to determine baseline prior to implementation and through year 2 post-implementation of land use or management practice. For soil C, 5 x 1-m deep soil cores will be collected from each model site in yr 1 (baseline) and yr 3, yr 5 post-implementation of practice. We will also monitor soil health via the collection of five samples from the gridded area, three times per year for five years. From these intensive sites, UH Mānoa, CSU, UF, and partners will derive a monitoring protocol for certification. We look forward to input from other regions through the Partnership Network to assist with developing our monitoring protocols.

b. Soil Models

Baseline modeling (in collaboration with Dr. Kathe Todd-Brown, University of Florida) will leverage local expertise to estimate carbon fixation rates and turnover times for a classic two

pool (vegetation growth and decay) model in year 1 and estimated response of these rates to climate smart practices. We will develop an accurate, easy-to-use soil carbon support tool that will help Hawai'i users identify and select practices for climate-smart agriculture or specific outcomes, such as soil carbon sequestration, and track the impact of these practices. Language and vocabularies connecting land management, data, and models are a critical missing gap to support cross-project data exchange and future data-driven AI.

- **Produce a hierarchical description of soil measurements** used to construct the Hawaiian soil quality index, and climate smart strategies relevant to the broader project. This will result in contributions to semantic resources like ENVO.
- **Apply the soil descriptions as metadata annotations**, working in collaboration with data managers at UH, to both internal and external facing data. In addition, we will link external facing data to relevant community databases (International Soil Carbon Network) via a set of open source scripts. This will result in archived version of public-facing data contextualized with data from other projects.
- **Develop a reduced complexity model to predict soil carbon stocks**, given changes in soil inputs and decays anticipated by different management strategies in major soil classes across Hawaii. We will work with Dr. Crow to document soil inputs and decay rates based on expert island experience, as well as identify and develop data integration to further constrain parameters. Finally, we will work with collaborators to link this reduced complexity model to more process explicit simulations.

c. Ecosystem Models

The process-rich MEMS model will be implemented for key archetypes and practices (in collaboration with the CSU Team) and this model will be linked hierarchically to the classical two pool model, thus reducing the uncertainty inherent in the expert parameter estimation. The MEMS 2.0 model (Figure 1) is an ecosystem model built to simulate soil organic matter dynamics for both topsoil and subsoil with its interactions with plant growth, soil temperature, soil moisture, inorganic nitrogen, etc. (Zhang et al., 2021). The model has been calibrated and validated for native grasslands in U.S. Great Plains. Our MEMS 2.0 model was developed for temperate soils. Tropical and subtropical soils are different from temperate soils in terms of soil formation, physical, and chemical properties (Anderson and Ingram, 1994). Soils from Hawai'i are unique among tropical/subtropical soils, because most of them are volcanic or active clay soils (Chadwick et al., 2003). Thus, we propose to create MEMS-Hawai'i as a stand-alone ecosystem model to specially represent Hawai'i soils, which will increase understanding of the dynamics of carbon and nitrogen and their interactions with plants, minerals, microbial communities and water dynamics. This work will contribute greatly to future development of MEMS-Tropics that simulates all tropical/subtropical soils, and contribute to our ultimate goal to integrate all the new knowledge of tropical and temperate soils to form a new version of MEMS that is capable of representing all major soils types in both tropical and temperate soils for global-scale applications.

- **Modify representation of organic matter dynamics** based on soil data from PI Crow's team and other published data to perform analyses on the controls and causal relationships between soil properties. In particular, we believe we will need to modify the representation of organic matter saturation of mineral surfaces, since there is no evidence

of saturation for volcanic and active clay soils. We plan to link soil mineralogy traits to some processes in the model. We will investigate if the existing pedotransfer equations (e.g., Saxton and Rawls, 2006) which transfer commonly measured soil properties (e.g., soil texture) to soil hydraulic parameters work for Hawai'i soils. We will test and improve the soil water module of the MEMS model to accurately simulate the soil water content and water flow in these soils, which is critical for soil carbon and nitrogen dynamics.

- **Improve the existing simple crop module** (which has only been used in temperate cornfield cropland systems) to represent tropical crops grown in Hawaii. Also, the tree growing module will be improved to simulate local agroforestry systems. Using existing experimental data and survey data, we will parameterize the MEMS model for major agricultural crops and tree species. We will also parameterize it for local field management practices.
- **Calibrate and validate the performance of the MEMS-Hawai'i model** using the data from the archetype farms that PI Crow's team have been collecting along with other available data. We will conduct calibration using the Markov Chain-Monte Carlo (MCMC) Bayesian approach described in Zhang et al. (2020). After calibration, we will verify MEMS-Hawai'i performance at representing Hawaiian soil carbon dynamics using a different subset of sites and produce predictive uncertainty values (Zhang et al., 2020). This new model will be compared with the current widely-used ecosystem model DayCent for Hawaiian soils. The DayCent model has been used for tropical soils (e.g., Oliveira et al., 2017) but its performance on Hawai'i soil is unknown. As the DayCent model lacks the mechanisms of representing volcanic and active clay soils, our hypothesis is that it will produce biased results. However, it is the model currently used within the COMETFarm tool, which NRCS plans to use in Hawai'i.
- **Conduct predictions under different management scenarios**, with the validated model. These results will identify possible required changes in the systems with long-term management practices and provide insight for other decision-making. We will support integration of the MEMS-Hawaii model to the project's decision support tool.

2. Climate benefits of climate-smart practices and systems.

To achieve meaningful climate benefits, field-scale inventory and more holistic life cycle analysis should be assessed together with economic and barriers assessment. These integrated biogeochemical models will be linked to a conceptual/mathematical framework that will quantify the Climate Benefit of Sequestration (CBS). We will embed model runs for key systems and states within the NRDS console for use as a predictive tool to compare with measured outcomes for verification of climate benefits in every implementation project. The objective of the analytical console is analogous to COMET-Planner, with additional information of soil health in Hawai'i. Information displayed in the analytical console will be aggregated and comply with the privacy protocol with users and will be developed as an analytical interface to display the overall soil health conditions to researchers, planners, and decision-makers. Models will also be available for incorporation into the COMET Tools.

The supporting practices list was developed to the best of expert local knowledge and existing research results for practices that will result in (at least) directionally correct C and GHG flux, and improve soil health. The HSH and HARC team will lead the adjustments to USDA NRCS

Conservation Standards to craft tailored language that honors the diverse Hawai‘i agroecosystems and producers’ needs, and ensures successful implementation of the climate smart practices. This new standard includes development of guidelines for standardization and implementation of the practice(s). The proposed changes for the practice standards will be reviewed and approved by the PET Council, Hawai‘i-specific agricultural expertise of our core team, CTAHR extension agents, and finally approved by the CSC Acting National Program Officer. Once the practice standard is approved, the CSSpecialists will be trained to support producers to implement these practices after an environmental assessment is granted for each site and for each approved practice.

Through the proposed investment in a decision support tool, uncertainty in C and GHG outcomes will decrease, and verification of quantifiable, meaningful climate benefits will emerge through measurements, monitoring protocols, and life cycle analysis for climate benefits of sequestration and avoided emissions associated with production of local products with local soil amendments (Sierra et al., 2020; Crow and Sierra, 2022). In collaboration with Scott Turn (HNEI), and Makena Coffman (ISR), the HSH Research Group will compute **net warming and economic benefits to include ecosystem C sequestration, soil GHG flux, and emissions avoidance from waste-diversion, as well as avoided imports of food, fertilizer, and wood products**. The NRDS console will aggregate project climate and economic outcomes to provide system-level GHG benefits considered at the island- and state-level through life cycle analysis (Scott Turn, HNEI and postdoc and graduate researcher).

Through the proposed decision support tool, uncertainty in C and GHG outcomes will decrease and verification of quantifiable, meaningful climate benefits will emerge through measurements, monitoring protocols and lifecycle analysis for climate benefits of sequestration and avoided emissions associated with production of local products with local soil amendments (Sierra et al., 2020; Crow and Sierra, 2022). We will compute net warming and economic benefits to include ecosystem C sequestration, soil GHG flux, and emissions avoidance from waste-diversion, as well as avoided imports of food, fertilizer, and wood products.

3. Environmental and community co-benefits.

A motivating question for our team is: *how do we use multiple knowledge systems to make better land use and management decisions that support abundant, resilient landscapes functioning as diversified production systems at multiple scales?* Secondary to C and GHG, soil health will be monitored for every project at the sample sample unit as soil C and GHG flux. Healthy soils and healthy societies are intertwined, and our project will be guided by research, data synthesis, producer outreach, and a long tradition of indigenous Hawaiian knowledge and practice centered in the core concepts of *aloha ‘āina* (reverence for a living landscape) and *‘āina momona* (the intentional cultivation of abundance in ecological and agroecological systems). Centered on a shared Hawaiian and Western value of healthy soil and resilient, productive landscapes, our long-term goal is to create an inclusive data science system, that 1) captures landscape history and interrelation of landscapes in a new co-designed, bicentric ontology of the soil social-ecological system, and 2) decision support tools that highlight reciprocal human-soil relationships extending beyond anthropocentric ecosystem services. For this reason, we will assess soil health alongside the metrics of C and GHG flux to ensure a holistic “climate-ready” runway is laid in Hawai‘i.

3B. Approach to monitoring of practice implementation

Our Hawai'i PET and CSS Team will report place-based implementation and outcomes. We will use the Hawai'i-based Natural Resource Data Solution¹ platform to track producer engagement and implementation status in real time. This approach will provide means and methods to measure and track spatial and temporal adaptation of practices. The core team (UH Mānoa, OII, TKC, ORCD, HFUU, and HCC) will convene a co-governance team in collaboration with experts in forestry, agroforestry, pasture management and crop production. Together, we will prepare technical and theoretical training materials and coursework for the CSSs through the HARC Training School. We will revise these materials as needed to incorporate incoming knowledge from our team and producers and our verification and monitoring data. Producer engagement for CSP implementation is expected to occur during YR 1 for Phase 1 producers, and YR 2 and 3 for producers recruited during the Phase 2 equity process outlined above. Successful CSP implementation requirements will be informed by Hawai'i-specific agricultural expertise from our core team, CTAHR extension agents, and the NRCS PIA Field Office Technical Guide.

3C. Approach to reporting and tracking of GHG benefits

Our soil C, soil health, and GHG flux monitoring protocols will be implemented in the field by the CSSs and laboratory results recorded in a monitoring console within the Hawai'i Soil Health Webtool. Axios Software, LLC developed the Hawai'i Soil Health Webtool with flexibility to expand the user dashboard to include change monitoring over time, and this proposal will implement this console. To augment current user functionalities, we will develop an analytical interface via the NRDS platform to display soil health conditions. The objective of the analytical console is analogous to COMET-Planner (and will include embedded process-based model runs for forecasting expected benefits to compare the monitoring for verification), with additional information of soil health in Hawai'i. Information displayed in the analytical console will be aggregated and comply with relevant privacy protocols. We will aggregate data from Hawai'i Soil Health Webtool, other web based tools, and sensors using the secure NRDS platform to provide our producers and the implementation team with secure data at the producer level and aggregate anonymized data to measure outcomes.

We must note here that we require investment and are a C rich and high potential C sequestration environment. Because we do not currently have the capacity to accurately predict GHG benefits, and we plan an intentional, inclusive RFP process to ensure underserved and minority farmers are reached, it is impossible to anticipate GHG benefits per farm, per project, per commodity produced, per dollar expended, and the anticipated longevity of GHG benefits at this time. Nonetheless, many of our Woody Planting projects in phase one occur in extremely high C environments (high NPP, presence of Andisols - volcanic ash soils with very high C storage and stabilization potential). Mean NPP for our planned Woody Plantings is 15.8 Mg C ha⁻¹ yr⁻¹ and ranges from 10.5 to 19.8 Mg C ha⁻¹ yr⁻¹ in our (sub)tropical environments, with lower values in leeward (dry) versus windward (wet) areas. This translates to a total of 86,209 Mg C yr⁻¹ scaled to our projects' area. Additionally, Andisols are widely distributed in our Woody Plantings area - e.g., prescribed grazing will be implemented in 3,299 acres (1,335 ha) on Hawai'i Island, an area that contains 1,613,142 Mg C in 1 m of soil. Many other crop production projects are planned in

¹ <https://nrdsdata.com/>

previous plantation areas and are highly degraded systems where potential for sequestering C is very high. Our previous work in Hawai‘i has shown that the mean transit time of C in soils under energy cane cultivation is around 177 years (Crow et al., 2020), a value much larger than the mean transit time of C in tropical soils, which generally ranges between a few years to a few decades (Lu et al., 2018; Sierra et al. 2018). Potential reasons for this large transit time are factors related to soil mineralogy and the ratoon harvesting, zero tillage management system following 120 yr of intensive sugarcane cultivation. These conditions create very high potential for climate mitigation, particularly in combination with our portfolio’s ability to reduce reliance on imported fertilizers and food. Therefore, tropical soils appear to be very promising for maximizing C sequestration and its climate benefits (CBS), **yet are inadequately represented in current data models to be of use in the scale of decision-support currently needed.** This transformative project will allow our team to build this capacity across agricultural sectors (forestry, ranching, and cropland) and, therefore, natural and working lands to actively participate in decarbonization of Hawai‘i’s economy by 2045 as mandated.

3D. Approach to verification of GHG benefits

We will establish a technical team with domain expertise for monitoring/verification activities. In Years 1-2, a dedicated UH Mānoa “Interisland Field Technician” will liaise between the UH Mānoa-based technical team, HARC, and all neighbor island-based CSSs to train and assist them with GHG sampling site establishment, sampling area identification, and collection of soils and GHG flux samples on-site for all projects. During Year 3, we will establish additional local CSS capacity, with continued support from HARC researcher Dr. Johanie Rivera Zayas and UH Mānoa DS Postdoctoral Fellow and a Ph.D. student. The samples we collect in the field will be sent for GHG flux, soil C, and soil health analysis within Hawai‘i. For budgetary purposes, we estimate a minimum of two sampling areas required for GHG monitoring. Sampling sites will be chosen by farm acreage: five acres or less will have two samples, eight samples in sites with six to 20 acres, and 15 m x 15 m research sites to monitor on a yearly basis for higher acreage forests, agroforests and ranching sites. The data from the 15 m x 15 m sites will then be extrapolated to the rest of the site. For each practice implemented (which will be a polygon unit in the HSH webtool) the team will identify main landscape conditions, soil order, soil cover, slope, waterlogged conditions, or any dominant changes in the landscape that is relevant and representative of the site for GHG monitoring. During Year 1, the Climate Smart Training School in collaboration with Inter-island Field Technician will train the CSSs to prepare, install, and perform the GHG sampling using the static chamber method. Soil C at depths 0-15 cm and 15-30 cm will be taken during Years 1, 3 and 5 for Phase 1 producers, and Years 2 or 3 (based on when the implementation starts), and 5 for Phase 2 producers. Soil C at 1 m depth will be taken for archetypes sites during Years 1, 3 and 5. On a yearly basis, samples will be analyzed for the 11 Hawai‘i Soil Health parameters including: % Organic Carbon, 24 hour CO₂ burst, B-glucosidase, B-glucosaminidase, potentially mineralizable nitrogen, pH, dissolved organic carbon: dissolved organic nitrogen ratio, hot water extractable carbon, water holding capacity, water stable mega-aggregates, and bulk density.

3E. Agreement to participate in the Partnership Network

Our PI, Dr. Susan Crow, will serve as our project representative to the *USDA Partnerships for Climate-Smart Commodities Learning Network*. We recognize and affirm that she will participate in the required yearly virtual meetings and in-person meetings during the project



duration, subject to change. If appropriate, we will also designate several other project leaders to attend the yearly virtual meetings with Dr. Crow.

4 Plan to develop and expand markets for CSC generated by project activities

Dr. Albie Miles, UH Assistant Professor, [Sustainable Community Food Systems \(SCFS\) at UH West Oahu](#) and Director of [Transforming Hawaii's Food Systems Together](#) (THFST) Initiative will provide oversight of the **Markets & Policy Team**. Dr. Miles will work closely with Lynker, UH Mānoa, and Sam Aruch of Maui-based National Resource Data Solutions (NRDS), which has developed a secure agriculture and conservation focused multi-platform and location-based software that combines project management, GIS, data collection, reporting, and analysis (Table 4A-1).

Table 4A-1. Additional key people will contribute to the efforts described in the following sections

Name	Affiliation	Area of Expertise/Practice
Travel Industry Management (Jerry Agrusa)	UH Manoa, Schidler School of Business	Consumer market demand, willingness to pay, consumer branding preference research, travel industry willingness to participate in Institutional Purchasing (IP).
Hawaii Institutional Purchasing Hui	Hawaii Public Health Institute (HIPHI)	Travel industry and key Hawaii institutional purchasing, and procurement baseline assessment and initial goal setting.
Lindsay Tiwald	Lynker	Branding and marketing specialist
Jennifer Ballou	Lynker	Branding and marketing specialist
Victoria Remington	Lynker	Branding and marketing specialist
Makena Coffman	UH Manoa	Director, Institute for Sustainability and Resilience, economic and policy impact
Kirsten Oleson	UH Manoa	Professor, Ecological Economics, Natural Resources and Environmental Management Department, College of Tropical Agriculture and Human Resources, nature-based capital, climate assessment, valuation of ecosystem services

4A. Partnerships designed to assess demand and market the resulting CSC

Our team will seek feedback and guidance from a local council of groups already working in the food distribution and marketing sector, most of whom provided letters of support for the original proposal. These include (but are not limited to): Hawai'i Department of Agriculture (HDOA); Hawai'i Department of Business, Economic Development and Tourism; Chamber of Commerce of Hawai'i; Farm Link; UH Food Innovation Hubs (Maui College, Leeward Community College, and Kapiolani Community College); 'Ulu Co-op; North Shore (O'ahu) Community Vitality

Economic Partnership (NSEVP); The Hawai'i Food Bank. Below we describe three key steps that will help to determine the types and methods by which we intend to develop and deploy a CSC branding and labeling program.

1. Understanding Data Needs, Market Demand & Branding Preferences for Climate Smart Commodities (CSC) in Hawai'i

We will conduct comprehensive consumer and institutional buyer studies in Year 1 following the research methods developed by [Howard & Allen](#) (2006). Under the oversight of Dr. Miles and research conducted Jerry Agrusa, Professor, School of Travel Industry Management, Shidler College of Business, University of Hawai'i Mānoa, this baseline market study will build upon recent findings on US-based consumer willingness-to-pay for local foods in Hawai'i ([Andrade et al. 2021](#); [Linnes et al. 2022](#)). This research will have the following complementary components and activities:

a. Industry Focused Research:

- Part 1: Qualify the current data needs² of key tourism industry entities (hotels, restaurants, airlines, etc.) in Hawaii in order to support institutional decision-making re: scaled/institutional purchasing of Climate Smart Commodities (CSC), fair trade, certified organic and Indigenous Hawaiian cultural foods. (Agrusa)
- Part 2: Assess the willingness, readiness and key obstacles faced by key tourism and state institutions to participate in Institutional Purchasing (IP) of Climate Smart Commodities (CSC), fair trade, certified organic and Indigenous Hawaiian cultural foods. (Agrusa)

b. Consumer Focus Research:

- Part 1: Qualify and quantify both the Japanese international traveler³ and Hawai'i residents (i.e. local) market demand and willingness to pay price premiums for Climate Smart Commodities (CSC), fair trade, certified organic and Indigenous Hawaiian cultural foods. (Agrusa)
- Part 2: Assess the labeling and branding preferences⁴ for Climate Smart Commodities (CSC), fair trade, certified organic and Indigenous Hawaiian cultural foods. (Agrusa)

2. Baseline Assessments of Institutional Purchasing & Procurement

a. Baseline assessments of food procurement protocols of key Hawaii institutions:

Public and private food service institutions have significant market demands and can use that power to transform food systems in ways that foster a localized, resilient food economy supportive of fair labor and climate smart production practices. We will align our efforts with the existing [Transforming Hawai'i's Food System Together](#) (THFST)

² The industry data needs derived from initial focus group interviews with key tourism industry actors (Part 1) will be used to inform/construct the research design of the Consumer Focus surveys.

³ Japanese international visitors to Hawaii represent the largest number and highest daily expenditures of market segments.

⁴ Labeling and branding preference data will be used to develop a Hawaii-based and visitor industry-wide branding/advertising/promotional campaigns and procurement strategy in collaboration with key industries and firms in Hawaii. See ii. [Communications and Branding Strategy](#) below).

initiative that is engaged in facilitating scaled institutional purchasing (IP) by key travel industry firms and key state and private institutions (e.g., City/County government, Hawai‘i state agencies and public and private schools). Funds will be allocated to those Hawaii travel industry firms, state agencies, NGOs, schools and/or hospitals⁵ willing to conduct a baseline assessment of current food procurement strategies and norms following the protocols established by The [Center for Good Food Purchasing](#) (CFGFP). The IP baseline assessments will support the tracking of Climate Smart Commodities (CSC) and others through time (see below). (Hawaii Public Health Institute IP Hui)

b. Traceability:

To track and substantiate purchasing and goal setting, there must be a Climate Smart Commodities (CSC) baseline data set to compare future purchasing data to. Funds will be allocated to willing travel industry firms, hospitals and/or public or private schools to conduct a series of baseline assessments of food procurement protocols and priorities with the intention (goal) of each institution participating in The [Center for Good Food Purchasing](#) (CFGFP) program to support the purchasing and tracking of Climate Smart Commodities (CSC) through time. (NRDS, Hawaii Public Health Institute IP Hui)

3. Public Education, Communications & Branding Strategy

a. Food Systems Education:

Dr. Miles and the UHWO SCFS Program will support the awareness of the proposed branding and marketing effort for CSC through an ongoing public education speaker series on the “[Future of Food and Agriculture in Hawai‘i](#).” A plan and strategy will be developed to reach key audiences, including the broader public (e.g., policy and decision makers) and more technical audiences (e.g., climate change researchers and decarbonization planners). (Miles)

b. Branding:

Following from the consumer and branding research described above, Lynker’s CSC Marketing and Branding Team, Dr. Christopher Hawkins, Jennifer Ballou, Victoria Remington, Lindsay Tiwald, and Melanie Jordan, will spearhead developing a “Locally-grown & Climate Akamai!” communications and branding strategy in partnership with major institutional purchasers, the Hawai‘i tourism industry, various food and community resilience hubs, food retailers and distributors, and existing branding initiatives. This team brings together individuals with strengths in developing branding and marketing strategies, implementing effective pro-social communications, understanding and using social psychological constructs (e.g., attitudes, values, norms) in natural resource management policy-making, and creating impactful, targeted graphics products. This team, along with Dr. Miles, also brings expertise about the audience and the marketing channels. Hawaii is a hyperlocal community and outreach needs to be done thoughtfully, with more community-building and grassroots efforts than may be typical elsewhere, such as neighborhood targeting and school education programs. Similarly, digital marketing approaches may not need the full suite of efforts usually required in other

⁵ Derived from Industry Focused Research (See 1. a. Part 2 above).

locales.

In general, our first and most important steps will be to develop the brand; develop the marketing strategy; and define the audience. We will work backward to better formulate the strategy: determining how much this program will cost each consumer, what the goal is in terms of earnings to achieve, and determining how much time should be allocated to marketing to avoid monopolizing our time and resources available for the program in general. Again, marketing in Hawaii is very atypical and can be difficult at times, and we understand and will remain cognizant of that.

We will develop a branding strategy that utilizes elements of the five-step Community-based Social Marketing (CBSM) framework to help shape the marketplace for local, climate-smart agricultural commodities via various media channels. CBSM differs from traditional information-based campaigns, which rely on simply distributing print and electronic materials to increase knowledge, build support for a subject, with a resulting change in consumer or public behavior. Since studies repeatedly show that the provision of information by itself has little effect on resultant behavior, CBSM was founded in social-psychological concepts and tools that have been proven to foster sustainable behavior change in individuals and groups. Our strategy will include creating a unique certification brand, drawing upon recent scientific findings on eco-labelling of food (Howard & Allen 2010; Asioli et al. 2021; Potter et al. 2021). (Lynker) The Marketing and Branding Strategy for “Climate Akamai” will include visual identity as well as a marketing campaign. Following the development of a Campaign Calendar, wherein we define dates, milestones, deadlines, responsible personnel, and necessary resources, we will engage in the following process.

Step 1: Visual Identity and Brand Strategy

Phase 1: Research, Vision and Design Brief

1. **Determine the Basics for the Foundation of the Brand.** A brand creates an experience, and almost anything can be branded: a concept, an action, a product, a service or a company. Our first step in defining the Climate Akamai brand strategy is to achieve consensus on our brand type (i.e., an individual brand, a product or service brand, a company brand, a family brand or an idea brand). We will then align the brand with a high-level method in which our brand delivers value to the marketplace and identify the theme for the brand. We will do this by bringing key stakeholders together and conducting a brand workshop. We'll run through a series of questions and worksheets to help determine what kind of brand Climate Akamai will be. We will look at case studies of current brands in our market as well as others that apply to the concepts we want our brand to possess. We look at category trends, customer demographics, current brand strengths, competitors brand strengths, potential brand positionings, customer insights, needs and feedback
2. **Create Brand Architecture by Evaluating our Value.** Brands that tap into emotion are far more powerful than brands that don't. We will determine which benefits of our product or service that are most important to our market and which are emotional: functional vs. emotional. We will define Brand Positioning (how we'll differentiate our offering to win mindshare in the market and be known for a certain “something.”), Brand

Essence and Brand Equity. We will then determine the level of importance each feature and benefit has to our audience: Expected, Adds Value or Will Buy.

3. **Define the Personality of the Brand and the Brand Promise.** The brand experience is the essence of what we represent, it's the embodiment of our positioning and the experience we want to deliver at each interaction with the market. We will identify [Human Personality](#) (study by Jennifer L. Aaker of Stanford) traits to describe the way we want the market to view the brand. These traits make up the "brand personality" and will be consistent with the value proposition, the emotional benefits of the brand, and the three things the brand means (all are tightly aligned). We will need to define the *Climate Akamai Brand Promise*: our brand should stand for one thing in the customer's mind. Strong brands have captured that mindshare in the market. We will review case studies and examples to best determine what our brand promise is (i.e.: Overnight Delivery = FedEx, Safe Cars = Volvo, Low Fare Airline = Southwest, Internet Search = Google). The strongest brand promises convey value to the target market or buying personas. Our brand promise is our core selling idea – the shortest and simplest way to convey value to the market. It can take years to deliver brand promise to the market via marketing campaigns through different distribution channels to achieve a singular word mindshare of the market, but beginning the process of creating a brand with this concept defined will get you much closer to achieving that success. It also gives a benchmark for all decisions for the company to make against: Does this decision positively benefit the brand promise? We will also define: value proposition, brand theme, brand pillars, brand means, brand personality traits, and brand promise.
4. **Write a Brand Story and Positioning Statement.** We will write a 25-35 word statement that captures the essence of the brand - who we are, what we do, for whom, along with a key differentiator or the brand promise. We will also write a brand story which is a longer narrative that connects with our market - it introduces personality and conveys what we stand for and why we care. A good story can solidify positioning and support the brand experience.

Phase 2: Logo, Identity & Guidelines

5. **Develop Visual Brand Identity.** After the research and a design brief phases are complete, we will decide on the name, the logo and the identity system. The naming portion will involve brainstorming which will lead to a decision on a few options, and a market test. Once a name has been chosen, we can begin the logo design process. From the brief we will know if there is one logo needed or a family of logos and the logo design process will include the hierarchy of how these will live either apart or if they are meant to feel separate. The brand identity phase starts after the logo is complete; the purpose is to form a systematic visual language around the logo, one that complements the design thinking of the logo and offers a family of useful, flexible elements that will help to design marketing and business collateral needed (business cards, website, letterhead, annual reports, advertising, content marketing, collateral, signage, package design, etc). There will be a case study included of mockups or examples of how the logo will be used. Once approved, a style guideline will be created (PDF) which will outline the logo usage rules, typeface system, color palette, layout guidelines, brand tone and more. This will ensure that all touchpoints are brand cohesive.

Phase 3: Brand Management

6. **Develop Visual Brand Requirements.** Visual identity ties into human emotions, and it can also unify a brand, neutralize it, or damage it. Defining key elements in our visual branding - Relevance (do the visuals support the defined brand strategy and promise), Quality, and Consistency (all they are consistent at all market touchpoints), will ensure the visuals reinforce our positioning and brand experience. We will create a style guide, designate a person to be responsible for enforcing the styles, and define the support we can offer to ensure assets are used correctly and consistently.
7. **Evaluate How the Brand is Represented by People and Operations.** To deliver consistent brand experience, we need to ensure that every interaction with the market supports the brand strategy. This includes the visual imagery (logo, photos, colors, etc) as well as copy (tone of voice and messaging) and anywhere that could show up: emails, presentations, sell sheets, social media, digital and print ads, etc. The rest results from people's interactions with the market. By identifying every touchpoint our customers/consumers have with the brand and the people who represent the brand, we will have a solid understanding of how well our people are supporting our positioning, brand promise and brand experience. We will need to define touchpoints and how the visual and tone is used at each touchpoint (i.e., email - responsiveness, signatures, tone of voice or telephone - main answering system, responsiveness of each dept, on-hold messaging, employee voicemails, etc).
8. **Define Brand Management.** Brand Management develops the marketing plan and strategies to maximize brand awareness, engagement and sales, through meaningful messages that will reach consumers. A main responsibility of our function lies in determining opportunities and challenges for our brand, to plan and develop marketing efforts to increase the value, health and performance of the "Climate Smart" brand.

Step 2. Marketing Plan

Marketing plans can range from something as simple as a 1-page summary document to a 50+ page document covering multiple product lines and distribution channels. We will use the following basics steps/components to develop our plan.

1. **Plan Overview.** Determine the purpose of the marketing plan. Decide what type of plan we need to create: Quick Summary (addresses key points in each section) or Detailed (explores each section in great depth). Then we can define the plan timeline and target completion date, as well as the marketing plan scope.
2. **Determine Marketing Plan Objectives.** Brief description of the company, the markets we serve, the product/services we sell/offer, a high-level description of the content we plan to include in the marketing plan along with the strategic goals and high-level numeric goals.
 - a. Define strategic goals (i.e., Increase market share, Overtake competitor, Better represent value proposition, Build brand awareness, Add distribution channels, Improve selling process, Create strategic partnerships, Create an inbound lead generation system, Increase publicity, Enhance online selling ability, etc.).
 - b. Define a Numeric Goal - high-level quantitative goals (i.e., Gross (total) revenue, Revenue from new customers, Revenue from existing customers, Number of new

customers, Number of total customers, Goals by distribution channel, Goals by customer/client type, Goals by product/service line).

3. **Describe Positioning in the Marketplace.** Define Market profile (who are our customers, what industry, company sizes, stage, ownership structure, who makes buying decisions, who influences buying decisions. Define the market size: what is the total market opportunity. Will need access to market numerical data. In essence, we have two markets - B2B and B2C, so we will need separate positioning strategies.
4. **Outline Strategy.** We will define the entire brand experience that our market has with Climate Akamai, and show examples of the visual experience (logo, color palette, fonts, print and digital designs, marketing campaign creative, design and feel of any physical location where you interact with the market).
5. **Describe Product and Pricing.** We will define the products within Climate Akamai for B2B and B2C as well as pricing or requirements. We will use research data to inform what the market will truly likely pay, what others are charging, and whether it enables us to reach revenue, profit and market share goals.
6. **Outline Distribution, Sales and Retention Plan.** We will outline the distribution channels we'll use to access our market, along with any new channels we wish to pursue in the future. We will also outline the channel management plan, the direct sales plan and any new partnerships we wish to pursue. It will also include our plan for managing and retaining customers (i.e., producers and consumers), including the customer service strategy and plans for upselling and cross-selling customers.
7. **Define Detailed Goals of the Plan.** Define annual goals (ie: Product/service, Target Market, Brand awareness, customer engagement, new customer acquisition, total revenue, sales performance, campaign response rate, market share, unit sales, customer retention rates, account renewals, campaign ROI, etc).
8. **Outline Marketing Campaigns to Run.** Outline what kind of campaigns you want to run or the goal of a campaign. Create a general campaign calendar with any details of the concept, type, media/distribution, call to action, target audience, and timing.
9. **Create a Marketing Plan Budget.** Define budget allotted for marketing. Define goals and allot budget to each.
10. **Determine How Often to Update the Marketing Plan.** This document is a continuous project throughout the year, and will change over time as we begin to outline the company, define the brand, and establish offerings. We will have regularly scheduled meetings to update the marketing plan as the project progresses in its initial stages.

Step 3: Marketing Campaign

1. **Defining the Business goal of the Marketing Campaign.** Defining goals will enable us to define strategy. We will define the goals related to the Climate Akamai Campaign and outline what outcomes from a B2B and B2C point of view we desire the program to achieve. What we are calling B2B would be our producers, and B2C are the products the producers make, being sold in the market. Potential business goals could be for both channels, but not limited to: **Define what the reaction is that we want:** Most important is to define what Climate Akamai branding and campaign will generate. Is it primarily Educational, to generate sales for producers, etc. **Branding:** to increase awareness of the program, product, messaging to people in our market and to communicate the value and benefits we provide. **Generate new leads:** to consider all future producers, as well as

how we will approach them or how to lead them to us. **Qualify leads:** to think around how these leads will be vetted, approved, and supported. **Nurture existing leads:** to communicate with leads that are in the pipeline but are not ready to take the next step, thinking about how to communicate our value proposition and what can help move them to the next step. **Direct sales:** to close within a short time frame, or campaign to buy now. **Nurture existing customers:** to support our current clients. **Generate Referrals:** to encourage current producers or marketplace to provide referrals. **Training/Education:** to train customers, new customers, or even prospects to use the products being sold by producers. To train distributors, channel partners, or employees (defining is this a pamphlet, PDF, training course, website, etc).

2. **Understanding Market Demand.** We will conduct comprehensive consumer and institutional buyer studies in Year 1 following methods developed by [Howard & Allen \(2006\)](#). Led by UH West Oahu's Sustainable Community Food Systems (SCFS) program, this baseline market study will draw on recent data on visitor willingness-to-pay for food produced in Hawai'i ([Andrade et al. 2021](#)). We will coordinate with, and include University of Hawai'i travel industry scholars, and key visitor industry stakeholders in the proposed research. We will also liaise with the Hawai'i Department of Agriculture, as they are managing the Made in Hawai'i with Aloha branding program (MIHA), and promoting it jointly with the Hawai'i Department of Business, Economic Development and Tourism and the Chamber of Commerce of Hawai'i.
3. **Identify the Target Audience.** We will define the target audience for both a B2B and B2C perspective. We will want to focus on a specific audience as it's proven easier to deliver a message that resonates and gets them to take action.
4. **Defining the "Consumer Journey."** Taking a big picture look at all the touchpoints that someone might interact with this campaign, the messaging and the visuals (logos + assets), we will outline two consumer journeys, one from a B2B perspective and the other B2C. We will list touchpoints, actions, channels, motivations, pain points and ownership, using the target audience – we will collect information on our producers as well as our potential consumers, and the variables they're likely to experience during their journey with Climate Akamai.
5. **Identify Campaign Channels:** We will then define the channels for an integrated marketing campaign and decide what marketing channels will be most visible to key stakeholders in our demographic responsible for purchasing decisions. This may include but is not limited to: social media, website, PR, print (magazines or trade publications), email, e-newsletters, events (We will then define the channels for an integrated marketing campaign using a social media planning calendar platform. This will include deciding what marketing channels will be most visible to key stakeholders in our demographic responsible for purchasing decisions. This may include but is not limited to: social media, website, PR, print (magazines or trade publications), email, e-newsletters, events (trade shows, conferences or events where potential stakeholders and decision-makers from targeted business are in attendance), radio, OOH (out of home - e.g., ads on the EV chargers at Whole Foods).
6. **Outline the Main Selling Points.** Once we know the target audience and how best to reach them, we will identify what content is the most effective for them to hear/see. We will use sales numbers, case studies, infographics, etc to get as specific as possible – we

want to prove that businesses who participate in “Climate Smart” will increase their goals as well as better the planet.

7. **Determine the Marketing Campaign Concept for B2B and B2C.** Essentially we will engage in two campaigns, one that focuses on the producers (B2B) and the other that focuses on the end consumer buying the CSC. We will define what concept will be applied to both. We will utilize human behavioral science to decide which influence (reciprocity (social obligation), scarcity, authority, consistency, liking, consensus) path we want the messaging to take. We will also audit and review past marketing campaigns for similar projects.
8. **Determine the Offer and Desired Audience Action.** We will focus the campaign around a key message and call-to-action to a defined market, which will resonate and influence our audience.
9. **Determine Required Creative Assets.** We will list all creative assets needed (design files, video, etc) and the resource we plan on using. For example, graphic design concepts will be produced by Jen Ballou, Lindsey Tiwald, and Melanie Jordan.
10. **Estimate Campaign Metrics.** Our team will create detailed estimates of the campaign metrics that facilitate us thinking through the key drivers of the campaigns success, as well as helping better measure results and ROI. This will then help us determine conversion goals. We will list the key metrics, including customer conversions, total revenue, unit sales, etc.
11. **Create Marketing Campaign Budget and ROI Projection.** After defining the budget, we will have a projected ROI. If the number is negative, we will rethink some of the media, and we will determine less expensive, but effective, channels to push the campaign. Some data to collect to determine costs:
 - Average price per unit of products/services sales resulting from campaigns.
 - Average cost of goods per unit of products/services.
 - Per-unit overhead costs (optional – some companies just use a standard percentage to project overhead).
 - Per-unit incremental expenses (optional – same concept as above).
 - Estimate of unit sales per product (if you’re selling multiple products from a campaign).
12. **Outline Media Plan.** Getting into the details, we will break down costs per impression for each media outlet based on initial projections. We will also keep track of responses and conversation rates where applicable for different types of media, and calculate costs per impression, response rate and conversion rate based on media buy.
13. **Determine how to fulfill responses from Marketing Campaign.** We will create a plan for how to follow up with responses from our campaign. Some examples: Convert website visits, handle inbound calls, respond to emails, process applications, etc.

Our branding strategy will allow consumers to trust what they are purchasing meets a defined set of criteria. Our demand generation strategy will include educating target audiences about the link between climate change and CSCs, amplifying awareness of pain points, and increasing the number of customers willing to pay for climate smart products. Importantly, we will liaise with the Hawai‘i Department of Agriculture (HDOA), as they are managing the Made in Hawai‘i with Aloha branding program (MIHA), and promoting it jointly with the Hawai‘i Department of Business, Economic Development and Tourism and the Chamber of Commerce of Hawai‘i. We

will also collaborate and coordinate with other CSC efforts locally, such as the Hawai'i 'Ulu Cooperative (HUC), a farmer-owned co-op working to revitalize 'ulu (breadfruit) as a viable crop and dietary staple by empowering farmers as change-makers in Hawai'i's food system.

4B. A plan to track CSC through the supply chain

Commodities will be tracked through the supply chain via a multi-pronged approach directly involving farmers and the climate smart specialists (CSSs). Sam Aruch and NRDS will lead our efforts to track the farm-to-supply chain. NRDS' customizable dashboard, web, and mobile applications will enable direct field-to-supply chain tracking and reporting of value-added, working with institutional purchasing and food hub aggregators through source-to-market traceability protocols. NRDS will also liaise with NSEVP to understand how the app they use (HeavyConnect - a digital documentation solution for the food supply chain) may be of value to our work. Institutional purchasing record keeping and consumer sales through Farm Link Hawai'i, Hawai'i Foodservice Alliance and other food hubs will also be key components of our effort to track CSC through the supply chain to customers.

For participating institutional buyers in Hawai'i, baseline assessment, goal-setting, and annual monitoring of procurement of CSC and related criteria will be completed through the established protocols developed through the Center for Good Food Purchasing (CFGFP). In addition to NRDS' custom data aggregation, reporting, and dashboard work, we will also provide our de-identified data on the sale of CSC agri-food products to be published through the existing [Aloha+ Challenge Dashboard](#), established to track progress, provide accountability and ensure transparency regarding Hawai'i's sustainability goals. Project partners are also committed to supporting any Climate Smart Commodity producers to link up to the existing value-added and aggregation infrastructure in Hawai'i (e.g. FarmLink, UH Food and Innovation Centers on the islands of Mau'i and O'ahu, 'Ulu Co-op, NSEVP, and others).

4C. Estimated net economic benefits for participating producers including market returns

Our team will conduct a multi-part economic assessment during the period of performance to identify economic benefits, costs, and barriers for Hawaii's producers and practitioners. These activities will be supervised by Drs. Kirsten Oleson and Makena Coffman and work performed by a postdoctoral researcher and at least one graduate student at UH Manoa. Below we describe three key steps to develop the framework for environmental markets and policy that ensure sustained net economic benefits for producers with an emphasis on measuring meaningful climate benefits and gained resiliency in the natural and working landscapes of Hawai'i.

1. *Estimated economic benefits of the institutional purchasing goal setting (from section B.3.)*

What are the market and non-market economic costs and benefits generated by CSC, and specifically to large buyers including institutional purchasers?

- **Economic impact of increased purchasing of CSC over time.** If we manage to achieve or exceed the goals set by the institutional purchasing agreements from baseline assessment, what are the net economic impacts, including market and non-market values? In addition to WTP for CSC, market-values can include engagement with emerging carbon offset markets or other payment for ecosystem services as part of the capital stack to CSC practices.

2. Ecosystem services valuation and assessment

What is the non-market value derived from the adoption of CS practice that enhances soil quality and estimated cost of doing nothing?

- **Framework for the environmental market.** Use soil health index, GHG, C as proxies for a range of ecosystem services; generate economic return valuation; include cultural ecosystem services and potential engagement in carbon offset markets (compliance and voluntary) and other payment for ecosystem services.
- **Cost/risk assessment.** What is the cost of doing nothing, status quo (with societal costs of climate change) versus adoption of our practices. Using the valuation of ecosystem services framework, what are the economic impacts of doing nothing versus building more abundant and resilient systems?

3. Economic and policy impact

What do state (and national) interventions need to look like in order to support large scale incentive towards climate smart practices?

- **Policy to prompt private action.** If Hawai'i has a carbon market, either stand alone or in collaboration with the Western Climate Initiative, how could that affect the capital stack for climate smart practices (and with what policy design)? Is there a role for voluntary markets in lieu of more concrete policy-based approaches?.

Our Phase 1 economic assessment will focus on the costs associated with implementing CSC practices through the creation of alternative production functions, with an emphasis on estimating economies of scale to bring down the effective cost to implement CSC practices. We will identify critical infrastructure and equipment gaps and associated bottlenecks during production and distribution. We will then use this information to develop industry improvement strategies to increase margins by cutting production and distribution costs.

Our Phase 2 economic assessments will collaborate with our market analysis and branding efforts to determine the market and non-market economic benefits associated with the development of "Locally-grown and Climate Smart!" products. Our research will focus on price differentials associated with premium pricing for CSC labeled products, and ways to close the gap between costs, potential willingness to pay, and benefits.

4D. Post-project potential

Our team's strategic, scaled portfolio approach to Hawai'i climate-smart agriculture and forestry production is grounded in best practices and the pursuit of a sustainable vision for climate-smart commodities. Communications challenges with such initiatives are inevitable, and we have proactively mitigated for these through: 1) a collaboratively-developed shared governance process that communicates across teams, 2) integrating user friendly technology applications and toolsets across so teams can seamlessly collaborate and communicate with each other, 3) groundwork for continued CSC practice implementation beyond the life of the grant and the development of Pacific Island Area soil health technologies that address gaps in COMET planner, and 4) a well-developed marketing and branding campaign that builds certified and



environmental market recognition for CSCs within our residential, culinary/restaurant, and tourism communities.

By creating a new eco-labeling and marketing program "Locally-grown and Climate Smart!" for Hawai'i food and agricultural products will invigorate the agrifood industry in Hawai'i, create jobs, circulate dollars in the local economy and build food system resilience and equity. The increased product value and bottom-line financial benefits associated with marketing CSC products will lead to continued implementation. Lastly, we have developed a partnership with HDOA Agricultural Development Division to leverage their existing industry knowledge and for strategic CSC marketing development efforts and label management alongside their "Made in Hawai'i with Aloha" and "Hawai'i Seal of Quality" marketing efforts.

Target		Year 1				Year 2			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Quantitative Milestones	Units (cumulative unless otherwise indicated)								
Number of producers involved	#	0	0	0	56	59	59	62	62
Number of underserved producers involved	#	0	0	0	53	56	56	56	56
Number of acres involved	Acres	0	0	0	838	1445	2075	2674	3232
Number of head involved	#	0	0	0	241	445	639	936	1180
Farm visits by CSSs	#		0	30	64	96	162	228	294
Dollars provided to producers	\$	\$0	\$0	\$2,340,941	\$4,654,577	\$5,352,318	\$6,050,060	\$6,825,802	\$7,523,544
Dollars to producer organizations	\$	\$877,971	\$1,800,941	\$2,723,912	\$3,646,883	\$3,895,055	\$4,143,227	\$4,391,400	\$4,639,572
Dollars to administration, MMRV, marketing	\$	\$1,137,548	\$1,912,184	\$2,745,646	\$3,591,109	\$4,801,471	\$5,680,034	\$6,575,696	\$7,503,659
Total expenditures	quarterly \$ expended	\$2,015,519	\$3,713,125	\$7,810,499	\$11,892,568	\$14,048,845	\$15,873,321	\$17,792,898	\$19,666,774
GHG benefits	Mg C in CO2 equiv.	0	0	0	20,992	36,192	51,999	67,007	80,974
MMRV	# sites with baseline and monitoring	0	0	30	64	66	66	66	66
Number of new marketing channels established	#	0	0	0	1	1	1	1	2
Number of marketing channels expanded	#	0	0	0	0	0	0	6	7
Number of measurement tools utilized	#	0	0	0	1	1	1	2	2
Workforce development time	hours	0	12	80	88	96	116	212	228

Year 3				Year 4				Year 5			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
69	77	77	77	77	77	77	77	77	77	77	77
63	71	71	71	71	71	71	71	71	71	71	71
3821	4388	4770	5137	5541	5833	6015	6187	6391	6543	6543	6543
1423	1665	1859	2005	2201	2347	2493	2639	2835	2981	2981	2981
367	448	529	610	691	772	853	934	1015	1096	1177	1258
\$8,476,467	\$9,434,390	\$10,470,314	\$11,428,237	\$11,951,780	\$12,475,322	\$13,076,864	\$13,600,406	\$13,843,902	\$14,087,400	\$14,325,708	\$14,642,016
\$4,888,493	\$5,137,414	\$5,386,335	\$5,635,256	\$5,827,676	\$6,020,096	\$6,212,515	\$6,404,935	\$6,599,835	\$6,794,737	\$6,989,638	\$7,184,540
\$8,554,097	\$9,381,027	\$10,228,681	\$11,111,052	\$12,148,895	\$12,985,270	\$13,840,632	\$14,736,497	\$15,623,550	\$16,446,845	\$17,288,774	\$18,173,445
\$21,919,058	\$23,952,830	\$26,085,330	\$28,174,545	\$29,928,351	\$31,480,687	\$33,130,011	\$34,741,838	\$36,067,287	\$37,328,981	\$38,604,120	\$40,000,000
95,731	109,937	119,508	128,703	138,825	146,141	150,701	155,010	160,121	163,929	163,929	163,929
66	66	73	81	81	81	81	81	81	81	81	81
2	2	2	2	10	10	10	10	10	10	10	10
9	9	10	11	18	18	18	18	18	18	18	18
2	2	2	2	2	2	2	2	2	2	2	2
236	248	316	324	332	344	412	420	428	440	508	516

Target		Year 1				Year 2			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Qualitative Milestones	Measures of progress								
i. Kahua setting (Preparing the platform)									
i.1. Landscape analysis	Review of data/processes/tools;	x	x						
i.2. FfE	Equity and justice framework for engagement and project governance		x	x					
i.3. P&P Council	Recruitment effort and formation		x	x					
i.4. RFP for Phase 2	Development activities and advertisement					x			
i.5. Roadshows	Phase 2 outreach activities						x	x	x
i.6. RFP Closes	Phase 2 project selection								x
ii. 'Auamo creation (Implement/outreach underserved producer)	Phase 2 farm visits and implementation activities								
iii. New practice development	Status of indigenous, new practice standards							x	x

Year 3				Year 4				Year 5			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

Attachment – Climate-Smart Practices List and Limitations

Climate-Smart Practices and Limitations

Climate-Smart practices under this grant shall be limited to the following practices:

NRCS Practice Code	Practice Name
314	Brush Management
315	Herbaceous Weed Treatment
317	Composting Facility
327	Conservation Cover
328	Conservation Crop Rotation
329	Residue and Tillage Management, no till
336	Soil Carbon Amendment
340	Cover Crop
345	Residue and Tillage Management, reduced till
379	Forest Farming
380	Windbreak/Shelterbelt Establishment and Renovation
381	Silvopasture
382	Fence
384	Woody Residue Treatment
484	Mulching
490	Tree/Shrub Site Preparation
512	Pasture and Hay Planting
528	Prescribed Grazing
548	Grazing Land Mechanical Treatment
590	Nutrient Management
612	Tree/Shrub Establishment
660	Tree Shrub Pruning

All practices applied under this grant will follow NRCS practice standards unless noted below:

N/A



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients February 2023 Version 1.0



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Overview of Reporting Requirements

Grant recipients are required to submit reports to document their performance under the *Partnerships for Climate-Smart Commodity* funding opportunity. These submissions will be required to use the Microsoft Excel workbook templates provided by USDA. The workbooks contain a series of worksheets that collect data in a standardized format to ensure data quality and allow for aggregation and summary of this information. The entire workbook must be submitted quarterly, with updates to all applicable worksheets. This guide is divided into three sections. The *Overview of Reporting Requirements* section summarizes the layout of the reporting workbook and presents the data elements included in each worksheet. It also describes additional documents that must be submitted to supplement the performance reports. The *Data Definitions* section provides descriptions and allowable response options for each data element. The guide also indicates whether each data element is required, applicable at times, or optional; as well as how frequently each data element must be updated. Finally, the *Appendices* contain practice and commodity lists that will be used for these reports. Reporting is necessary for USDA oversight of this effort. The data elements required for inclusion in the quarterly performance reports allow USDA to conduct selected audits to review whether producers are receiving federal funds from multiple sources for the same purpose; to determine whether GHG benefits from implementation of climate-smart agriculture and forestry (CSAF) practices are being estimated accurately; and for other purposes deemed appropriate by USDA.

The reporting worksheets collect information at four levels: project, partner, producer, and field.

Descriptions of each level:

Project level: Information about activities and impacts at a whole project/aggregate level (i.e., reflecting all activities under the grant agreement). Some project-level reporting is further subdivided by commodity type or a combination of commodity and CSAF practice(s) (commodity x practice).

Partner level: Information about activities related to a single organization (recipient, subrecipient, contractor, or other partner) within a project.

Producer level: Information about individual producers who have one or more farms enrolled in a project.

Field level: Information about individual fields enrolled in a project.

Certain data elements are required to be reported for each producer and field enrolled in a project. In order to minimize the burden associated with data collection and to enable USDA to match data to existing records, these producer- and field-specific records must use the producer's established FSA Farm, Tract and Field IDs, and report the State and County associated with the Farm ID. Associated data entered in conjunction with these data elements, such as Producer Name, must match the data contained in the customer's Business Partner record, and the Farm Operating Plan in Business File for that Farm ID. Disclosure of this information is protected under Section 1619 of the Food, Conservation, and Energy Act of 2008 (PL 110- 246), 7 U.S.C. 8791. Additionally, Departmental Regulation 4370-001 provides USDA's policies for collecting demographic data, including race, ethnicity and gender. Providing demographic information is voluntary and at the discretion of the customer. Demographic information is used by USDA for statistical purposes only and will not be used to determine an applicant's eligibility for programs or services for which they apply.

Note: For purposes of this guide, "farm" refers to the operation from which climate-smart commodities are produced and may represent farms, ranches, forests or other operations. Similarly, "field" refers to the individual land units at which climate-smart practices are being implemented to produce climate-smart commodities and may represent lots, farmsteads or other units, depending on the type of operation and commodity. The use of "Farm", "Tract" and "Field" align with the FSA definitions; for example, "A field is a part of a farm that is separated from the balance of the farm by a permanent boundary, such as; fences, permanent waterways, woodlands, croplines in cases where farming practices make it probable that this cropline is not subject to change, and other similar features."



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The following tables list the data elements included in each reporting worksheet, along with a brief description of each item.

Project Summary

These data will be collected about each project. Cumulative results are reported each quarter. Report last quarter's entry if there has been no change in this quarter.

Table 1. Project Summary elements

Data element name	Description	Frequency
Commodity type	Type of commodity(ies) incentivized by the project	Quarterly
Commodity sales	Indicates sales of the commodity(ies) related to the project occurred this quarter	Quarterly
Farms enrolled	Indicates enrollment activities occurred this quarter	Quarterly
GHG calculation methods	Methods used to calculate greenhouse gas (GHG) benefits	Quarterly
GHG cumulative calculation	Method used to calculate cumulative GHG benefits	Quarterly
Cumulative GHG benefits	Whole project estimate of total GHG (CO ₂ e) emission reductions	Quarterly
Cumulative carbon stock	Whole project estimate of total carbon sequestration	Quarterly
Cumulative CO ₂ benefit	Whole project estimate of total CO ₂ emission reductions	Quarterly
Cumulative CH ₄ benefit	Whole project estimate of total CH ₄ emission reductions	Quarterly
Cumulative N ₂ O benefit	Whole project estimate of total N ₂ O emission reductions	Quarterly
Offsets produced	Amount of carbon offsets produced by project	Quarterly
Offsets sale	Name of marketplace where carbon offsets were sold	Quarterly
Offsets price	Price of carbon in offset sales	Quarterly
Insets produced	Amount of carbon insets produced by project	Quarterly
Cost of on-farm TA	Cost of on-farm technical assistance (TA) provided to producers	Quarterly
MMRV cost	Cost of measurement, monitoring, reporting, and verification (MMRV) activities	Quarterly
GHG monitoring method	Methods used by project to monitor GHG benefits (up to 5)	Quarterly
GHG reporting method	Methods used by project to report on GHG benefits (up to 5)	Quarterly
GHG verification method	Methods used to verify GHG benefits (up to 5)	Quarterly



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Partner Activities

These data will be collected at the project level. Each row in this worksheet will represent one organization involved in the project, including the recipient and all contributing partners. A partner is any organization that is receiving project funds or providing matching contributions (funds or in-kind contributions) to the project. While the recipient must complete one row for their own organization, not all data elements apply to the recipient. These exceptions are noted in the detailed descriptions of the specific elements in the *Data Definitions* section of this guide. Data are reported cumulatively each quarter. Report last quarter's entry if there has been no change in this quarter.

Table 2. Partner Activities elements

Data element name	Description	Frequency
Partner ID	Unique ID for each partner	One-time
Partner name	Name of partner organization	One-time
Partner type	Type of organization	One-time
Partner POC	Partner point of contact name	As applicable
Partner POC email	Partner point of contact email	As applicable
Partnership start date	Start of partnership on project	One-time
Partnership end date	End of partnership on project	As applicable
New partnership	Indicator for partner organizations that have no prior work with the recipient	As applicable
Partner total requested	Total amount requested to date by partner from recipient	Quarterly
Total match contribution	Total amount of match contribution by partner to date	Quarterly
Total match incentives	Total amount of match contribution by partner for incentives	Quarterly
Match type	Top 3 types of match contribution by partner, other than incentives	Quarterly
Match amount	Value of match contributions by type	Quarterly
Training provided	Top 3 types of training provided to the partner through project	Quarterly
Activity by partner	Top 3 types of activities provided by this partner to producers or other partners	Quarterly
Activity cost	Approximate cost per activity type provided by partner to producers or other partners	Quarterly
Products supplied	Names of products supplied to producers as part of project activities or incentives	Quarterly
Product source	Supplier or source of products supplied to producers as part of project activities or incentives	Quarterly



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Marketing Activities

These data will be collected at the project level. Each row in this worksheet will correspond to one commodity for which the project enrolls fields and one marketing channel used to sell that commodity by the project or producers enrolled in the project. Data are reported for the current quarter and are not cumulative. If no sales of the commodity were reported during a quarter, do not complete this worksheet for that quarter.

Table 3. Marketing Activities elements

Data element name	Description	Frequency
Commodity type	Type of commodity incentivized by the project	Quarterly
Marketing channel type	Type of marketing channels used	Quarterly
Number of buyers	Number of buyers per marketing channel	Quarterly
Names of buyers	Names of buyers in the marketing channel	Quarterly
Marketing channel geography	Geography of marketing channel	Quarterly
Value sold	Value of commodity sold by marketing channel	Quarterly
Volume sold	Volume of commodity sold by marketing channel	Quarterly
Price premium	Price premium of commodity by marketing channel	Quarterly
Price premium to producer	Percent of price premium that goes to the producer	Quarterly
Product differentiation method	Top 3 types of product differentiation methods used	Quarterly
Marketing method	Top 3 types of marketing methods used	Quarterly
Marketing channel identification method	Top 3 ways marketing channel was identified	Quarterly
Traceability method	Top 3 types of supply chain traceability methods used	Quarterly



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Producer Enrollment

These data will be collected at the producer level about each farm enrolled in the project. In this worksheet, each row will correspond to one farm that has at least one field enrolled in the project. Data are reported when a producer first enrolls one or more fields in the project. If a producer is enrolled in the project for multiple years, review the farm characteristics each time a new contract is signed and provide any necessary updates. The quarterly submission should contain information about each farm initially enrolled in the project during that quarter and for updates to farms that have re-enrolled during that quarter, as applicable. If no farms are enrolled during that quarter, do not complete this worksheet for that quarter.

Table 4. Producer Enrollment elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
State or territory	State name (must match FSA farm enrollment data)	
County of residence	County name (must match FSA farm enrollment data)	
Producer data change	Indicator that producer data was updated at re-enrollment	As applicable
Producer start date	Contract start date	Enrollment
Producer name	Name of primary operator	Enrollment
Underserved status	Indicator the primary operator is considered underserved and/or a small producer	Enrollment
Total area	Total area of enrolled operation	Annual
Total crop area	Total crop area in enrolled operation enrolled	Annual
Total livestock area	Total livestock confinement, pasture and rangeland in enrolled operation	Annual
Total forest area	Total forest area in enrolled operation	Annual
Livestock type	Top 3 types of livestock on enrolled operation	Annual
Livestock head	Total livestock currently managed (by type)	Annual
Organic farm	Indicator that part of the farm is certified or transitioning organic	Annual
Organic fields	Indicator that any of the enrolled fields are certified or transitioning organic	Annual
Producer motivation	Motivation for participation	Annual
Producer outreach	Top 3 types of outreach provided to producer	Annual
CSAF experience	Indicator of prior implementation of CSAF practices at this farm	Annual
CSAF federal funds	Indicator of prior receipt of federal funds for CSAF practices	Annual
CSAF state or local funds	Indicator of prior receipt of state funds for CSAF practices	Annual
CSAF nonprofit funds	Indicator of prior receipt of nonprofit funds for CSAF practices	Annual
CSAF market incentives	Indicator of prior receipt of market incentives for CSAF practices	Annual



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Field Enrollment

These data will be collected about each field enrolled in the project. In this worksheet, each row corresponds to one field x commodity combination enrolled in the project. Generally, data are reported once for each field, at its initial enrollment. The quarterly submission should contain information about each field initially enrolled in the project during that quarter. If no fields are enrolled during that quarter, do not complete this worksheet for that quarter. If a field is enrolled for multiple years, any relevant changes, such as a new ID number or changes to the commodity or practice combinations should be entered in this worksheet during the quarter it is re-enrolled, or as applicable.

Table 5. Field Enrollment elements

Data element name	Description
Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name
Physical County of field	Physical county name must match FSA farm records
Prior Field ID	Previous Field ID when reconstitution of farm results in new Field IDs
Field data change	Indicator that field data has changed from initial enrollment
Contract start date	Start date of contract
Total field area	Size of enrolled field
Commodity category	Category of commodity(ies) produced
Commodity type	Type of commodity(ies) produced
Baseline yield	Average yield of commodity in 3 years prior to enrollment
Baseline yield location	Location for which baseline yield is provided
Field land use	Most common land use in field in past 3 years
Field irrigated	Most common irrigation type in field in past 3 years
Field tillage	Most common tillage in field in past 3 years
Practice past extent - farm	Extent of operation that implemented this practice prior to project enrollment
Field any CSAF practice	Indicator for prior CSAF practices in this field in past 3 years
Practice past use - this field	Indicator of prior use of this practice in this field in the past 3 years
Practice type	CSAF practice(s) that will be implemented in enrolled field (up to 7)
Practice standard	Organization that developed CSAF practice standard implemented in field
Planned practice implementation year	Year that practice is planned to be implemented
Practice extent	Area or number of animals for which practice is implemented
Follow-on questions	Follow-on questions by practice type (see Table 11)



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Farm Summary

These data will be collected about each farm enrolled in the project. In this worksheet, each row will correspond to one farm that has at least one field enrolled in the project. The quarterly submission should contain updates to any data elements that have changed for each farm enrolled in the project during that quarter. If there are no changes from the previous quarter, do not complete this worksheet for that quarter. Data are not cumulative.

Table 6. Farm Summary elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
State or territory	State name	
County of residence	County name	
Producer TA received	Type of technical assistance provided to producer	Quarterly
Producer incentive amount	Total financial incentive provided to the producer	Quarterly
Incentive reason	Top 4 reason(s) for financial incentives provided to producer	Quarterly
Incentive structure	Top 4 units on which financial incentives are structured	Quarterly
Incentive type	Top 4 type(s) of financial incentives provided to producer	Quarterly
Payment on enrollment	Extent of payment provided to producer upon enrollment	Quarterly
Payment on implementation	Extent of payment provided to producer upon implementation of CSAF practices	Quarterly
Payment on harvest	Extent of payment provided to producer upon harvest or slaughter	Quarterly
Payment on MMRV	Extent of payment provided to producer upon reporting or verification	Quarterly
Payment on sale	Extent of payment provided to producer upon sale of commodity	Quarterly



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Field Summary

These data will be collected about each field enrolled in the project for a commodity x practice(s) combination. In this worksheet, each row will correspond to one field x commodity x practice(s) combination enrolled in the project. Data for each field will be reported quarterly and are not cumulative. Report data for any elements that have an update in that quarter. Greenhouse gas benefit estimates must be entered upon practice completion or annually, as appropriate. If there are no changes from the previous quarter, do not complete this worksheet for that quarter. This worksheet includes a section to report the “official” estimate of GHG benefits – amounts of greenhouse gas emissions reduced and carbon sequestered – for the field. These quantities refer to the estimates that are used to calculate the project’s aggregate impact (reported in Table 1). Tables 8 and 9 are used to report alternate estimates of the field-level GHG benefits when additional methods are used to model (Table 8) or measure (Table 9) these impacts. Any field that can use COMET-Planner must submit those results, either as the official or alternate model.

Table 7. Field Summary elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State or territory of field	State name	
County of field	County name	
Commodity type	Type of commodity produced from field	Quarterly
Practice type	Type of practice(s) incentivized in field (up to seven)	Quarterly
Date practice complete	Date that practice implementation is certified complete	Quarterly
Contract end date	End date of contract	Quarterly
MMRV assistance provided	Indicator that MMRV assistance is provided to field	Quarterly
Marketing assistance provided	Indicator that marketing assistance provided for commodity from field	Quarterly
Incentive per acre or head	Indicator that a per acre/head incentives is provided for the CSAF practice(s) on this field	Quarterly
Field commodity value	Value of commodity produced from field	Quarterly
Field commodity volume	Volume of commodity produced from field	Quarterly
Cost of implementation	Total cost of practice implementation in field	Quarterly
Cost coverage	Percent of total cost of implementation of practice covered by project incentives	Quarterly
Field GHG monitoring	Methods used to monitor GHG benefits in field (up to 3)	Quarterly
Field GHG reporting	Methods used to report on GHG benefits for field (up to 3)	Quarterly
Field GHG verification	Methods used to verify GHG benefits for field (up to 3)	Quarterly
Field GHG calculations	Methods used to calculate GHG benefits for field	Quarterly
Field official GHG calculation	Method used to calculate official GHG benefits for field	Quarterly
Field official GHG ER	Official estimate of total GHG emission reductions for field	Quarterly
Field official carbon stock	Official estimate of total carbon sequestration for field	Quarterly
Field official CO ₂ ER	Official estimate of total CO ₂ emission reductions for field	Quarterly
Field official CH ₄ ER	Official estimate of total CH ₄ emission reductions for field	Quarterly
Field official N ₂ O ER	Official estimate of total N ₂ O emission reductions for field	Quarterly
Field offsets produced	Amount of carbon offsets produced in field	Quarterly
Field insets produced	Amount of carbon insets produced in field	Quarterly
Other field measurements	Indicator that field data was collected for reasons other than GHG benefit estimation	Quarterly



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GHG Benefits - Alternate Modeled

If greenhouse gas benefits are modeled for the same field using multiple methods, the results for the alternate models are reported in this worksheet. The “alternate” models refer to those model results that were not used in the calculation of the project’s aggregate impact (as reported in Table 1). Any field that can use COMET-Planner must submit those results, either as the official or alternate model. These data will be collected about the modeled GHG benefits for each field x commodity x practice(s) combination. In this worksheet, each row will correspond to one field enrolled in the project. Data are not cumulative. Each quarterly submission should include information for all fields that have new modeled data. Greenhouse gas benefit estimates must be entered upon practice completion or annually, as appropriate.

Table 8. GHG Benefits – Alternate Modeled elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State or territory of field	State name	
County of field	County name	
Commodity type	Type of commodity(ies) produced from the field (up to 6)	Annual
Practice type	Type of practice(s) incentivized in field (up to 7)	Annual
GHG model	Model used to calculate GHG benefits	Annual
Model start date	Start date of model run	Annual
Model end date	End date of model run	Annual
Total GHG benefits estimated	Estimate of total GHG benefits for field	Annual
Total carbon stock estimated	Estimate of total change in carbon stock for field	Annual
Total CO2 estimated	Estimate of total CO2 emission reductions for field	Annual
Total CH4 estimated	Estimate of total CH4 emission reductions for field	Annual
Total N2O estimated	Estimate of total N2O emission reductions for field	Annual



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GHG Benefits - Measured

Projects must report the results of any carbon stock or greenhouse gas emission measurements in this worksheet. These data will be collected at the field level. Each row will represent a separate measurement method used to calculate GHG benefits for a given field. Data are reported once per year of measurement and are not cumulative. Each quarterly submission should include information for any field for which there are new soil samples or new calculations of annual GHG benefits based on actual measurements.

Table 9. GHG Benefits - Measured data elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State	State name	
County	County name	
GHG measurement method	Method of measurement	Annual
Lab name	Entity that conducted analysis	Annual
Measurement start date	Start date of measurements	Annual
Measurement end date	End date of measurements	Annual
Total CO2 reduction calculated	Calculation of total CO2 reduction	Annual
Total carbon stock change calculated	Calculation of change in carbon stock	Annual
Total CH4 reduction calculated	Calculation of total CH4 reduction	Annual
Total N2O reduction calculated	Calculation of total N2O reduction	Annual
Soil sample result	Numeric result from soil sample	Annual
Measurement type	Type of analysis conducted	Annual



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Additional Environmental Benefits

Projects that track additional environmental benefits (e.g., water quality improvements) from enrolled fields report results in this worksheet. These data will be collected about each field. Each row in this worksheet will correspond to an enrolled field. Data are not cumulative. Estimates of environmental benefits must be entered upon practice completion or annually, as appropriate.

Table 10. Additional Environmental Benefits elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State	State name	
County	County name	
Environmental benefits	Indicator that project tracks other environmental benefits	Annual
Reduction in nitrogen loss	Indicator that project tracks reductions in nitrogen loss	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Reduction in phosphorus loss	Indicator that project tracks reductions in phosphorus loss	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Other water quality	Indicator that project tracks other water quality improvements	Annual
Type	Type of water quality metric being tracked	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Water quantity	Indicator that project tracks reduced water use	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Reduced erosion	Indicator that project tracks reductions in soil erosion	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Reduced energy use	Indicator that project tracks reductions in energy use	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Avoided land conversion	Indicator that project tracks reductions in land conversion	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual
Improved wildlife habitat	Indicator that project tracks improvements in wildlife habitat	Annual
Amount	Amount	Annual
Purpose	Purpose of tracking those co-benefits	Annual



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Supplemental Data Submission

Project MMRV Plan

Definition of MMRV elements:

Measurement: Quantification of the greenhouse gas benefits (reduction or capture) using mathematical models and/or direct physical measurements in the field

Monitoring: Ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time

Reporting: Documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization

Verification: Independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable.

Projects must submit an MMRV plan that includes details about how each of the following are addressed:

- Quantification approach, including:
 - GHG models used
 - GHG measurement plan (if applicable)
 - Approach to quantifying additional environmental benefits, if applicable (e.g., water quality, habitat)
- Verification approach:
 - Compliance criteria
 - Verification plan/methodology
- Approach to ensuring:
 - Additionality
 - Permanence
 - Leakage
 - Impacts of weather
- Plan for non-compliance

If the project is using a specific MMRV methodology or approach developed by the recipient, a project partner, or an outside organization, the project can submit documentation associated with the methodology as long as the documentation addresses each of the above categories.

If the project is tracking other environmental benefits (as reported in the *Additional Environmental Benefits* worksheet), include a description of the methodology and tools used to track and report on these benefits.

Field modeled GHG benefit reports

Results from any models besides COMET-Planner used to estimate GHG benefits must also be submitted as a separate report. This includes projects running COMET-Farm. The full results of any model can be submitted in the native/standard format generated by the modeling tool and must include the following Unique IDs in the report or in the file name: State, County, Farm ID, Tract ID, Field ID.

Field direct measurement results

For any direct physical measurements in the field, measurement results must be submitted as a separate report and must include the following Unique IDs in the report or in the file name: State, County, Farm ID, Tract ID, Field ID. Measurement results reports must include the name of the equipment used for sampling or data collection, the name of the lab that analyzed the data, and the analytical method used.

Sample report types include soil analysis reports, summarized results of portable emissions analyzers or flux towers, water quality analyses, and plant species counts. These could be collected for the purposes of determining GHG emission reductions or carbon sequestration amounts, for calibration of tools or models, for tracking other environmental benefits, or for other reasons.



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Data Descriptions

This section provides descriptions and allowable response options for each data element. The guide also indicates whether each data element is required, applicable at times, or optional; as well as how frequently each data element must be updated.

Unique IDs

Project ID: Unique ID at the project level – “Award Identifying Number” shown on award documentation

Partner ID: Unique ID at the partner level – use EIN; if no EIN, a unique ID will be assigned for use in these reports

State or territory of operation: State or territory name

County of operation: Physical county name

Farm ID: Unique ID at the operation level assigned by Farm Service Agency (FSA)

Tract ID: Unique ID at the tract level assigned by FSA

Field ID: Unique ID at the field level assigned by FSA



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Project Summary**Commodity type****Data element name:** Commodity type**Reporting question:** What climate-smart commodity types are produced by this project?**Description:** Type of commodity incentivized by the project. These commodities include those for whom farmers are directly receiving incentives or other types of marketing support. See full list of commodity options in Appendix B. List one commodity per row.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Commodity sales****Data element name:** Commodity sales**Reporting question:** Did project activities result in sales this quarter of the commodity(ies) produced by this project?**Description:** Indicator of sales of commodity(ies) related to project activities. If sales are reported, complete the *Marketing Activities* worksheet (Table 3) as part of the quarterly performance report.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Farms enrolled****Data element name:** Farms enrolled**Reporting question:** Did the project enroll any producers or fields this quarter?**Description:** Indicator that the project enrolled producers or fields. If enrollment activities occurred this quarter, complete the *Producer Enrollment* and *Field Enrollment* worksheets (Tables 4 and 5) as part of the quarterly performance report.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**GHG calculation methods****Data element name:** GHG calculation methods**Reporting question:** What methods is the project using to calculate GHG benefits?**Description:** List the way(s) that GHG benefits are being measured and calculated by the project this quarter.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Models
- Direct field measurements
- Both

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



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GHG cumulative calculation**Data element name:** GHG cumulative calculation**Description:** List the method(s) that was used to calculate the total cumulative GHG benefits reported by the project this quarter.**Data type:** List**Measurement unit:** Category**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What method(s) was used to calculate the total cumulative GHG benefits reported here?**Select multiple values:** No**Allowed values:**

- Models
- Direct field measurements
- Both

Required: Yes**Data collection frequency:** Quarterly**Cumulative GHG benefits****Data element name:** Cumulative GHG benefits**Description:** Total cumulative estimated greenhouse gas emission reductions from practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.**Data type:** Decimal**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What are the project's estimated total GHG emission reductions (CO₂eq) to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Cumulative carbon stock****Data element name:** Cumulative carbon stock**Description:** Estimated total cumulative change in carbon stock based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Project**Reporting question:** How much carbon has the project sequestered to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Cumulative CO₂ benefit****Data element name:** Cumulative CO₂ benefit**Description:** Estimated total cumulative carbon dioxide emission reductions based on practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.**Data type:** Decimal**Measurement unit:** Metric tons CO₂**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What are the project's estimated total cumulative CO₂ emission reductions to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Cumulative CH₄ benefit****Data element name:** Cumulative CH₄ benefit**Description:** Estimated total cumulative methane reduction based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Measurement unit:** Metric tons CH₄ reduced in CO₂eq**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What are the project's estimated total CH₄ emission reductions to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly



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Cumulative N2O benefit

Data element name: Cumulative N2O benefit **Reporting question:** What are the project's estimated total N2O emission reductions to date?

Description: Estimated total cumulative nitrous oxide reduction based on practice implementation. This is updated quarterly. If there are no updated numbers enter the same number as the previous quarter. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets produced

Data element name: Offsets produced **Reporting question:** How many carbon offsets have been produced in the project?

Description: Total carbon offsets produced by enrolled project fields during the quarter. Offsets are defined as having been verified and certified using an accepted standard and sold into the carbon marketplace.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets sale

Data element name: Offsets sale **Reporting question:** To what marketplace(s) were carbon offsets sold?

Description: Marketplaces to which carbon offsets produced by enrolled project fields were sold. Offsets are defined as having been verified and certified using an accepted standard and sold into the carbon marketplace. List each marketplace name. Separate names with commas.

Data type: Text

Select multiple values: NA

Measurement unit: Name

Allowed values: Text

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets price

Data element name: Offsets price **Reporting question:** What was the average price of carbon received for offsets?

Description: Average price per metric ton paid for carbon offsets produced by enrolled project fields. Offsets are defined as having been verified and certified using an accepted standard and sold into the carbon marketplace.

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars per metric ton

Allowed values: 0-500

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Insets produced

Data element name: Insets produced **Reporting question:** How many carbon insets have been produced in the project?

Description: Total carbon insets produced by enrolled fields during the quarter. Insets are defined as having been verified and certified using an accepted standard and accounted for within Scope 3 emissions for a firm.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly



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Cost of on-farm TA**Data element name:** Cost of on-farm TA**Reporting question:** What is the total amount that has been spent to provide on-farm TA?**Description:** Total cost of any field- or practice-specific technical assistance provided by the project (by recipient or partners) to any producers. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Dollars**Allowed values:** \$0-\$50,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**MMRV cost****Data element name:** MMRV cost**Reporting question:** What is the total amount that has been spent on MMRV activities?**Description:** Total cost of all MMRV activities paid for by the project (recipient or partners). MMRV components are defined as measurement (calculations or estimations of GHG emissions), monitoring (ongoing review and confirmation that the climate-smart practices have been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time), reporting (documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization), and verification (independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable). This is updated quarterly. If there are no changes, enter the same number as the previous quarter.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Dollars**Allowed values:** \$0-\$50,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**GHG monitoring method****Data element name:** GHG monitoring 1-5**Reporting question:** How did the project monitor GHG benefits?**Description:** Up to the five most common forms of monitoring GHG benefits used this quarter as part of MMRV requirements. Monitoring is defined as ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time. Include up to 5 methods, based on which methods are most commonly used for this project. The worksheet provides five columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 5 GHG monitoring methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG monitoring methods as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Drones
- Ground-level photos and videos
- On-farm visit
- Plot-based sampling
- Producer records or attestation
- Satellite monitoring or remote sensing
- Soil metagenomics
- Soil sensors
- Water sensors
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



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GHG reporting method**Data element name:** GHG reporting 1-5**Reporting question:** How did the project track and report implementation of practices to reduce GHG emissions?

Description: Up to the five most common forms of tracking and reporting on practice implementation used this year as part of MMRV requirements. Reporting is defined as documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization. Include up to 5 methods, based on which methods are most commonly used for this project. The worksheet provides five columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 5 GHG reporting methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG reporting methods as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Automated devices
- Email
- Mobile app
- Paper
- Third-party actors
- Website
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**GHG verification method****Data element name:** GHG verification method 1-5**Reporting question:** How did the project verify implementation of practices to reduce GHG emissions?

Description: Up to the five most common forms of verifying practice implementation used this year as part of MMRV requirements. Verification is defined as independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable. Include up to 5 methods, based on which methods are most commonly used for this project. The worksheet provides five columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 5 GHG verification methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG verification methods as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Artificial intelligence
- Audit by recipient
- Computer modeling
- Photos
- Record audit
- Satellite imagery
- Site or field visit
- Third-party audit
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Partner Activities**Unique IDs**

Partner ID	Unique Project ID for each partner
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Partner name

Data element name: Name of partner organization	Reporting question: What is the official name of the recipient or partner organization?
Description: Legal name of recipient or partner organization	
Data type: Text	Select multiple values: NA
Measurement unit: NA	Allowed values: Text
Logic: None – all respond	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership initiation

Partner type

Data element name: Type of partner organization	Reporting question: What type of organization is this?
Description: Legal/financial structure of recipient or partner organization	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: • Commodity groups (501c5) • For-profit • Individual • Nonprofit • State or local agency • Tribal agency • University
Logic: None – all respond	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership initiation

Partner POC

Data element name: Partner POC	Reporting question: Who is the point of contact for this project at the recipient or partner organization?
Description: Name of a point of contact for the recipient or partner organization	
Data type: Text	Select multiple values: NA
Measurement unit: NA	Allowed values: Text
Logic: None – all respond	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership initiation; update as necessary

Partner POC email

Data element name: Partner POC email	Reporting question: What is the point of contact's email address?
Description: Email of the point of contact for the recipient or partner organization	
Data type: Text	Select multiple values: NA
Measurement unit: NA	Allowed values: Text
Logic: None – all respond	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership initiation; update as necessary



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Partnership start date

Data element name: Partnership start date	Reporting question: When did the partnership start?
Description: Date that the partner organization and the recipient began formally partnering on the project	
Data type: Date	Select multiple values: NA
Measurement unit: MM/DD/YYYY	Allowed values: 01/01/2023 – 12/31/2030
Logic: No response for recipient	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership initiation

Partnership end date

Data element name: Partnership end date	Reporting question: When did the partnership end?
Description: Date that the partner organization and the recipient stopped formally partnering on the project	
Data type: Date	Select multiple values: NA
Measurement unit: MM/DD/YYYY	Allowed values: 01/01/2023 – 12/31/2030
Logic: No response for recipient	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership end quarter

New partnership

Data element name: New partnership	Reporting question: Is this a new partnership?
Description: A new partnership means that the recipient and the partner organization have not had a formal working relationship (under contract or on a grant) prior to the start of the project.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: • Yes • No • I don't know
Logic: No response for recipient	Required: Yes
Data collection level: Partner	Data collection frequency: Partnership initiation

Partner total requested

Data element name: Partner total requested	Reporting question: What is the total amount of funding the partner has requested to date from this project?
Description: Cumulative (total) amount of funds that the partner has requested reimbursement for from the recipient from the start of the partnership to the end of the reporting quarter. For each quarter's data entry, the value must be the sum of all previous entries plus the amount of funds requested in the reporting quarter. If there are no changes, report the value from the previous quarter.	
Data type: Decimal	Select multiple values: NA
Measurement unit: Dollars	Allowed values: \$0-\$100,000,000
Logic: No response for recipient	Required: Yes
Data collection level: Partner	Data collection frequency: Quarterly



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Total match contribution**Data element name:** Total match contribution**Reporting question:** What is the total match value the organization has contributed to the project to date?

Description: Cumulative (total) value of funds and in-kind contributions (e.g., staff time, inputs, equipment rental, marketing support) that the partner has provided as a project match contribution from the start of the partnership to the end of the reporting quarter. For each quarter's data entry, the value must be the sum of all previous entries plus match contributions in the reporting quarter. If there are no changes, report the value from the previous quarter.

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly**Total match incentives****Data element name:** Total match incentives**Reporting question:** What is the total value of match provided by this organization for producer incentives?

Description: Cumulative (total) value of funds for incentive payments directly to producers that the partner has provided as a project match contribution from the start of the partnership to the end of the reporting quarter. For each quarter's data entry, the value must be the sum of all previous entries plus match incentives in the reporting quarter. If there are no changes, report the value from the previous quarter.

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly**Match type****Data element name:** Match type 1-3**Reporting question:** What types of match contributions has the organization provided to the project?

Description: Types of match contributions *other than incentives* provided directly to producers by the organization from the start of the partnership to the end of the reporting quarter. Enter up to the top three (in dollar value) types of match contributions provided. In-kind staff time could be used for technical assistance, marketing assistance, or other support to producers. Production inputs include seed, fertilizer, pesticides, equipment and other inputs for use in the field. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 match types are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other match types as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Equipment rental or use
- In-kind staff time
- Production inputs (reduced cost or free)
- Program income
- Software
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Match amount**Data element name:** Match amount 1-3**Reporting question:** What is the value of the match contributions the organization provided to the project?

Description: Cumulative (total) value of funds for each match type that the organization has provided as a project match contribution from the start of the partnership to the end of the reporting quarter. Enter amounts for up to the top three (in dollar value) match types. The worksheet provides three columns for this data element. Enter one value for each column. If fewer than 3 match types are used, leave unnecessary columns blank.

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly**Training type provided****Data element name:** Training type 1-3 provided**Reporting question:** What types of training has the organization provided to project partners?

Description: Types of training provided to the project partner as a result of participating in the project during the past quarter. Training can come from the recipient, a project partner organization (including other divisions of their own organization, or an outside organization). Enter up to the top three (in dollar value) types of partner training provided. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 training types are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other training types as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Data collection
- Grant reporting
- Marketing opportunities
- Providing financial assistance
- Providing technical assistance
- Writing producer contracts
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly**Activity by partner****Data element name:** Activity 1-3 by partner**Reporting question:** What types of activities has the organization provided to the project?

Description: Types of activities that the recipient or partner organization has provided during the reporting quarter. Enter up to the top three (in dollar value) types of activities undertaken. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 activity types are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other activity types as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Marketing support
- MMRV support
- Producer outreach for enrollment
- Technical assistance to producers
- Training to other partner organizations
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Activity cost**Data element name:** Activity cost 1-3**Reporting question:** What is the value of the activities this organization has provided to the project?

Description: Cumulative (total) cost of each activity type that the organization has undertaken or offered from the start of the partnership to the end of the reporting quarter. Enter amounts for up to the top three (in dollar value) activity types. The worksheet provides three columns for this data element. Enter one value for each column. If fewer than 3 activity types are provided, leave unnecessary columns blank.

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly**Products supplied****Data element name:** Products supplied**Reporting question:** What products or supplies were provided to enrolled fields?

Description: Name(s) of products supplied to enrolled producers as incentives or matching contributions. Enter the name of each product, including its brand. Separate each product name with a comma. If no products or supplies were provided by the organization, leave the column blank.

Data type: Text**Select multiple values:** NA**Measurement unit:** Name**Allowed values:** Text**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly**Product source****Data element name:** Product source**Reporting question:** Which companies provided the supplies?

Description: Name of firm or company from which supplies were obtained.

Data type: Text**Select multiple values:** NA**Measurement unit:** Name**Allowed values:** Text**Logic:** Respond if text entered for 'Products supplied'**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly



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Marketing Activities**Commodity type**

Data element name: Commodity type	Reporting question: What type of commodity is produced by the farmers enrolled in this project?
Description: List a single commodity produced or marketed through incentives from this project. If multiple commodities are produced by the project, use additional rows of the worksheet to report each commodity. Use the FSA commodity list in Appendix B and choose the commodity from the list.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: FSA commodity list
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Marketing channel type

Data element name: Marketing channel type	Reporting question: What type of marketing channel is used to sell this commodity?
Description: List a single type of marketing channel used to sell the commodity produced by farmers enrolled in the project. If a single commodity is marketed through multiple channels, use additional rows of the worksheet to report each combination of commodity and marketing channel. If “other” is chosen, use the additional column to enter the other marketing channel type(s) as free text.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: • Agricultural marketing board • Biorefinery • Commodity broker • Direct to consumer • Direct to institution • Direct to restaurant • Distributor (including grain elevators) • Food hub or cooperative • Food processor • Non-food byproducts processor • Retailer • USDA • Other (specify)
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Number of buyers

Data element name: Number of buyers	Reporting question: How many buyers are there in this marketing channel?
Description: List the number of individual firms or buyers in this marketing channel.	
Data type: Integer	Select multiple values: No
Measurement unit: Count	Allowed values: 1-500
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly



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Names of buyers

Data element name: Names of buyers	Reporting question: What are the names of all of the buyers in this marketing channel?
Description: Provide the names of all buyers in this marketing channel. Separate each name with a comma.	
Data type: Text	Select multiple values: NA
Measurement unit: Name	Allowed values: Text
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Marketing channel geography

Data element name: Marketing channel geography	Reporting question: What is the primary geography of the marketing channel?
Description: The primary geography of the type of marketing channel. Primary geography means the scale at which most of the activity of buying and selling happens. Local means within a single state or directly neighboring states. Regional means within a five-to-ten state area. National means across the United States. International means specific locations outside of the United States. Global means across the world or not to a specific international location.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: • Local • Regional • National • Global
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Value sold

Data element name: Value sold	Reporting question: What is the value of the commodity sold in this marketing channel?
Description: The dollar value of the commodity sold in this marketing channel this quarter (non-cumulative).	
Data type: Decimal	Select multiple values: No
Measurement unit: Dollars	Allowed values: \$1-\$100,000,000
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Volume sold

Data element name: Volume sold	Reporting question: What is the volume of the commodity sold in this marketing channel?
Description: The volume of the commodity sold in this marketing channel this quarter (non-cumulative).	
Data type: Decimal	Select multiple values: No
Measurement unit: Number	Allowed values: 1-100,000,000
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly



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Volume sold unit**Data element name:** Volume sold unit**Reporting question:** What is the unit of volume?**Description:** The unit associated with the volume of the commodity sold in the marketing channel. If "other" is chosen, use the additional column to enter the appropriate unit as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Bales (500 pounds)
- Bushels
- Carcass pounds
- Gallons
- Kilograms
- Linear board feet
- Liveweight pounds
- Metric tons
- Pounds
- Short tons
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Price premium****Data element name:** Price premium**Reporting question:** What price premium is received for the commodity sold in this marketing channel?**Description:** The price premium received for the commodity sold in this marketing channel this quarter. Price premium is the amount received above a 'business as usual' price.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Dollars**Allowed values:** \$0.01-\$10,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Price premium unit****Data element name:** Price premium unit**Reporting question:** What is the unit for the price premium?**Description:** The unit associated with the price premium for the commodity sold in the marketing channel. If "other" is chosen, use the additional column to enter the appropriate unit as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Per bale (500 pounds)
- Per bushel
- Per carcass pound
- Per gallon
- Per kilogram
- Per linear board foot
- Per live pound
- Per metric ton
- Per ounce
- Per short ton
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



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Price premium to producer**Data element name:** Price premium to producer**Reporting question:** What percent of the price premium is provided to the producer for the commodity sold in this marketing channel?**Description:** The percent of the price premium provided to the producer for the commodity sold in this marketing channel this quarter. Price premium is the amount received above a 'business as usual' price.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Percent**Allowed values:** 0-100**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Product differentiation method****Data element name:** Product differentiation method 1-3**Reporting question:** What methods are used to differentiate climate-smart commodities in this marketing channel?**Description:** Provide the methods used to differentiate the climate-smart commodity in this market channel. Product differentiation methods are ways to distinguish or differentiate the climate-smart commodity in the marketplace. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 product differentiation methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other product differentiation methods as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Certification/verification for internal insetting
- Farm certification
- Label or badge used on packaging or marketing
- Third party certification/verification
- Trademark
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Marketing method****Data element name:** Marketing method 1-3**Reporting question:** What methods are used to market climate-smart commodities in this marketing channel?**Description:** Provide the method(s) used to market this commodity in this market channel. Marketing method is the way that potential buyers of the climate-smart commodity are engaged by the project partners as the sellers or facilitators of sale. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 marketing methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other marketing methods as free text**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Label or badge used on packaging or marketing materials
- Marketing partnership (e.g., promotion by buyer)
- Print marketing campaign
- Social media and digital marketing campaign
- Verbal marketing campaign (e.g., radio, word of mouth)
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Marketing channel identification method**Data element name:** Marketing channel identification method 1-3**Reporting question:** What methods are used to generate interest in climate-smart commodities in this marketing channel?

Description: Provide the marketing channel identification method(s) used for this commodity in this market channel. Market channel identification methods are the ways that producers and project partners generate interest in purchasing the climate-smart commodity. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 marketing channel identification methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other marketing channel identification methods as free text

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Educational tours for buyers
- In-person lead generation
- Negotiated contracts with buyers
- Partnership network or project partner
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Traceability method****Data element name:** Traceability method 1-3**Reporting question:** What traceability methods are used for climate-smart commodities in this channel?

Description: Provide the traceability method(s) used for the climate-smart commodity in this market channel. Traceability methods are ways to trace the climate-smart commodity or the climate-smart claims through the supply chain. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 traceability methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other traceability methods as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Barcode or unique ID
- Blockchain
- Book and claim
- Chain of custody
- Mass balance
- Recordkeeping
- Registry with certification
- Segregation
- Supply shed
- Volume proxy
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Producer Enrollment**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
State or territory	State name (must match FSA farm enrollment data)
County of residence	County name (must match FSA farm enrollment data)

Producer data change**Data element name:** Producer data change**Reporting question:** Is there new/updated information for a producer who is re-enrolling in the project?**Description:** Indicates that there is new or updated information for a producer who had previously enrolled in the project and is re-enrolling.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Re-enrollment**Producer start date****Data element name:** Producer start date**Reporting question:** When did the producer enroll in the project?**Description:** Date that the producer enrolled in the project by signing their first contract.**Data type:** Date**Select multiple values:** NA**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment**Producer name****Data element name:** Producer name**Reporting question:** What is the name of producer enrolled in the project?**Description:** Name of the producer enrolled in the project; the name must match the name contained in the customer's Business Partner record and the Farm Operating Plan in FSA Business File for that Farm ID.**Data type:** Text**Select multiple values:** NA**Measurement unit:** NA**Allowed values:** Text**Logic:** None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment



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Underserved status**Data element name:** Underserved status**Reporting question:** Is this producer considered an underserved and/or a small producer?

Description: Underserved status of the primary operator of the enrolled operation. Underserved producers generally include beginning farmers, socially disadvantaged farmers, veteran farmers, and limited resource farmers; women farmers and producers growing specialty crops are generally also included in these categories. Small farms are generally those with less than \$350,000 in annual gross cash farm income. Indicate whether this producer is considered underserved, a small producer, or both underserved and a small producer. Use "I don't know" if the producer declines to answer. Departmental Regulation 4370-001 provides USDA's policies for collecting demographic data, including race, ethnicity and gender. Providing demographic information is voluntary and at the discretion of the customer. Demographic information is used by USDA for statistical purposes only and will not be used to determine an applicant's eligibility for programs or services for which they apply.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes, underserved
- Yes, small producer
- Yes, underserved and small producer
- No
- I don't know

Logic: None – all respond**Required:** No**Data collection level:** Producer**Data collection frequency:** Initial enrollment**Total area****Data element name:** Total area**Reporting question:** What is the total area of the farm?

Description: Total area of the farm associated with the Farm ID. Report total area of the farm, even if only a portion of the farm is enrolled in the project. If a producer is enrolled in the project for multiple years, review the total area each time a new contract is signed and provide any necessary updates.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Less than 1 acre
- 1 to 9 acres
- 10 to 49 acres
- 50 to 69 acres
- 70 to 99 acres
- 100 to 139 acres
- 140 to 179 acres
- 180 to 219 acres
- 220 to 259 acres
- 260 to 499 acres
- 500 to 999 acres
- 1,000 to 1,999 acres
- 2,000 to 4,999 acres
- 5,000 or more acres

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable



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Total crop area

Data element name: Total crop area **Reporting question:** What percent of the current operation is cropland?

Description: Area of the total farm that is currently used as cropland. If a producer is enrolled in the project for multiple years, review the total crop area each time a new contract is signed and provide any necessary updates.

Data type: Integer

Select multiple values: No

Measurement unit: Acres

Allowed values: 0-100,000

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment and subsequent enrollment(s), if applicable

Total livestock area

Data element name: Total livestock area **Reporting question:** What amount of the current operation is used for livestock (by area)?

Description: Area of the total farm that is currently used for pasture, grazing, rangeland; or animal housing, feeding or milking. If a producer is enrolled in the project for multiple years, review the total livestock area each time a new contract is signed and provide any necessary updates.

Data type: Integer

Select multiple values: No

Measurement unit: Acres

Allowed values: 0-100,000

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment and subsequent enrollment(s), if applicable

Total forest area

Data element name: Total forest area **Reporting question:** What amount of the current operation is forested (by area)?

Description: Area of the total farm that is currently considered forest land use. Forest land use means that at least 10% of the land area is covered in trees that will be at least 13 feet tall when mature. If a producer is enrolled in the project for multiple years, review the total forest area each time a new contract is signed and provide any necessary updates.

Data type: Integer

Select multiple values: No

Measurement unit: Acres

Allowed values: 0-100,000

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment and subsequent enrollment(s), if applicable



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Livestock type**Data element name:** Livestock type 1-3**Reporting question:** What types of livestock are raised on the farm?

Description: Up to top three types of livestock (by head count) on the farm. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If there are fewer than 3 livestock types, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other livestock types as free text. If a producer is enrolled in the project for multiple years, review the livestock type each time a new contract is signed and provide any necessary updates.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Alpacas
- Beef cows
- Beefalo
- Buffalo or bison
- Chickens (broilers)
- Chickens (layers)
- Dairy cows
- Deer
- Ducks
- Elk
- Emus
- Equine
- Geese
- Goats
- Honeybees
- Llamas
- Reindeer
- Sheep
- Swine
- Turkeys
- Other (specify)

Logic: Respond if 'Total livestock area' >0**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable**Livestock head****Data element name:** Livestock head 1-3**Reporting question:** How many livestock (by type) are on this operation?

Description: Average annual head count for each type of livestock. Enter amounts for up to the top three livestock types by number. The worksheet provides three columns for this data element. Enter one value for each column. If there are fewer than 3 livestock types, leave unnecessary columns blank. If a producer is enrolled in the project for multiple years, review the average annual head count each time a new contract is signed and provide any necessary updates.

Data type: Integer**Select multiple values:** NA**Measurement unit:** Head count**Allowed values:** 1-10,000,000**Logic:** Respond if 'Total livestock area' >0**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable



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Organic farm**Data element name:** Organic farm**Reporting question:** Is any part of the farm currently USDA-certified organic or transitioning to USDA-certified organic?

Description: USDA-certified organic means that the farm has been certified by an accredited organic certifying agent or is transitioning to USDA-certified organic by not using any of the prohibited substances. Yes means that some or all of the farm is certified organic or transitioning to certified organic. No means that no part of the farm is certified organic or transitioning to certified organic. If a producer is enrolled in the project for multiple years, review the organic certification status of the farm each time a new contract is signed and provide any necessary updates.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** No**Data collection level:** Producer**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable**Organic fields****Data element name:** Organic fields**Reporting question:** Are any of the fields enrolled in the project currently USDA-certified organic or transitioning to USDA-certified organic?

Description: USDA-certified organic means that the operation has been certified by an accredited organic certifying agent or is transitioning to USDA-certified organic by not using any of the prohibited substances. Yes means that some or all of the fields enrolled in the project are certified organic or transitioning to certified organic. No means that no part of the fields enrolled in the project are certified organic or transitioning to certified organic. If a producer is enrolled in the project for multiple years, review the organic certification status of the enrolled fields each time a new contract is signed and provide any necessary updates.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'Organic operation'**Required:** No**Data collection level:** Producer**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable**Producer motivation****Data element name:** Producer motivation**Reporting question:** Which of the following was the primary reason the producer enrolled in this project?**Description:** Primary operator's motivation for enrolling in the project.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Financial benefit
- Environmental benefit
- New market opportunity
- Partnerships or networks
- Other

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment



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Producer outreach**Data element name:** Producer outreach 1-3**Reporting question:** What types of outreach were provided to producers?

Description: Up to three most common types of outreach provided to producer prior to enrollment. Outreach activities are those focused on identifying and enrolling producers in the project. Outreach can come from the recipient or project partners. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If there are fewer than 3 outreach types, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other outreach types as free text.

Data type: List**Select multiple values:** Yes**Measurement unit:** Category**Allowed values:**

- Commodity organizations
- Conferences
- Cooperative extension
- Digital communications and resources
- Education workshops, field days, and town halls
- Existing partner networks
- Farm visits and one-on-one meetings
- General advertising
- Peer referrals and producer groups
- Phone calls
- Print communications and resources
- Retailers
- State agencies
- Targeted messaging using proprietary data
- Technical service providers
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment**CSAF experience****Data element name:** CSAF experience**Reporting question:** Has the primary operator implemented CSAF practices in the last ten years anywhere on the farm?

Description: Has this farm implemented climate-smart agriculture or forestry (CSAF) practices anywhere on the farm in the past 10 years or since the current primary operator took control (whichever time period is shorter)? CSAF practices are included in a list in Appendix A.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment



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CSAF federal funds**Data element name:** CSAF federal funds**Reporting question:** Were prior CSAF practices supported by federal funds?

Description: If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by federal funds? Federal funds are defined as being from programs including, but not limited to, those from the Natural Resources Conservation Service (NRCS), including through Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Regional Conservation Partnership Program (RCPP), or related programs), the Farm Service Agency Conservation Reserve Program (CRP), as well as funds from other USDA programs or other federal agencies.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment**CSAF state or local funds****Data element name:** CSAF state or local funds**Reporting question:** Were prior CSAF practices supported by state or local funds?

Description: If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by state funds? State or local funds are those from state departments of agriculture or other state agencies, local water quality districts and other local agencies.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment**CSAF nonprofit funds****Data element name:** CSAF nonprofit funds**Reporting question:** Were CSAF practices supported by nonprofit funds?

Description: If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by nonprofit funds? Nonprofit funds are those offered directly from a nonprofit organization to a producer.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment



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CSAF market incentives

Data element name: CSAF market incentives **Reporting question:** Were CSAF practices supported by market incentives?

Description: If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by market incentives? Market incentives include premiums paid by a commodity buyer or by a consumer based on branding or labeling as a climate-smart commodity.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment



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Field Enrollment**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name (must match FSA farm enrollment data)
County of field	County name (must match FSA farm enrollment data)
Prior Field ID, if applicable	Prior Field ID assigned by FSA if there has been reconstitution of the farm resulting in a new Field ID during the field's enrollment in the project

Field data change**Data element name:** Field data change**Reporting question:** Has the information previously reported for this field changed?**Description:** Indicator that this entry is being used to report any relevant changes, such as a new Field ID number or changes to the commodity or practice combinations, for a field that has previously been enrolled in the project.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Re-enrollment**Contract start date****Data element name:** Contract start date**Reporting question:** What is the start date of the contract with the producer that includes this field?**Description:** Start date listed on the contract that enrolls the field in the project.**Data type:** Date**Select multiple values:** NA**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Total field area****Data element name:** Total field area**Reporting question:** What is the total size of the enrolled field?**Description:** Total size of the field enrolled with the project.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Acres**Allowed values:** .01-500**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment



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Commodity category**Data element name:** Commodity category**Reporting question:** What category of commodity(ies) is (are) produced from this field?**Description:** Category of commodity(ies) produced in field enrolled in the project**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Crops
- Livestock
- Trees
- Crops and livestock
- Crops and trees
- Livestock and trees
- Crops, livestock and trees

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Commodity type****Data element name:** Commodity type**Reporting question:** What type of commodity is produced from this field?**Description:** Type of commodity produced in field enrolled in the project. See full list in Appendix B. The worksheet provides a drop-down list of the allowed values. Choose the appropriate value. Enter additional commodities in subsequent rows.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Baseline yield****Data element name:** Baseline yield**Reporting question:** What is the baseline yield of this field?**Description:** Average annual yield of commodity in 3 years prior to enrollment. Provide yield for the enrolled field if possible. If not at field level, provide average annual yield for the specific commodity for the operation.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Production per acre or animal**Allowed values:** .01-100,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Baseline yield unit**Data element name:** Baseline yield unit**Reporting question:** Baseline yield unit

Description: Unit of average annual yield of commodity in enrolled field in 3 years prior to enrollment. The worksheet provides a drop-down list of choices for this data element. If "other" is chosen, use the additional column to enter the appropriate yield unit as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Animal units per acre
- Bushels per acre
- Carcass pounds per animal
- Head per acre
- Hundred-weights (or pounds) per head
- Linear feet per acre
- Liveweight pounds per animal
- Pounds per acre
- Tons per acre
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Baseline yield location****Data element name:** Baseline yield location**Reporting question:** For what portion of the operation is the baseline yield being reported?

Description: Location of the reported average annual yield of commodity in 3 years prior to enrollment. If "other" is chosen, use the additional column to enter the appropriate location as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Enrolled field
- Whole operation
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Field land use****Data element name:** Field land use**Reporting question:** What is this field's land use history?

Description: Prior to enrollment, what was the most common land use for this field in the past 3 years?

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Crop land
- Forest land
- Non-agriculture
- Other agricultural land
- Pasture
- Range

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment



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Field irrigated**Data element name:** Field irrigated**Reporting question:** What is this field's irrigation history?**Description:** Prior to enrollment, what was the most common irrigation practice on this field the past 3 years?**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- No irrigation
- Center pivot
- Drip-subsurface
- Drip-surface
- Flood/border
- Furrow/ditch
- Lateral/linear sprinklers
- Micro-sprinklers
- Seepage
- Side roll
- Solid set sprinklers
- Supplemental
- Surface
- Traveling gun/towline
- Wheel Line
- Other

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Field tillage****Data element name:** Field tillage**Reporting question:** What is this field's tillage history?**Description:** Prior to enrollment, what was the most common tillage approach during the past 3 years?**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- None
- Conventional, inversion
- Conventional, vertical
- No-till, direct seed
- Reduced till, inversion
- Reduced till, vertical
- Strip till
- Other

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment



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Practice past extent - farm**Data element name:** Practice past extent - farm**Description:** Prior to enrollment, on what portion of the whole farm had this (these) CSAF practice(s) ever been used by the primary operator? If multiple practices are planned to be implemented in this field, enter the value that best corresponds to the farm's prior experience with the planned set of practices.**Data type:** List**Measurement unit:** Category**Reporting question:** What percent of the farm has implemented this CSAF practice (combination) previously?**Select multiple values:** No**Allowed values:**

- Never used
- Used on less than 25% of operation
- Used on 25-50% of operation
- Used on 51-75% of operation
- Used on more than 75% of operation

Required: Yes**Logic:** None – all respond**Data collection level:** Field**Data collection frequency:** Initial enrollment**Field any CSAF practice****Data element name:** Field any CSAF practice**Description:** Prior to enrollment, have any CSAF practice or practices been used in this field in the past 3 years? CSAF practices are included in a list in Appendix A.**Data type:** List**Measurement unit:** Category**Reporting question:** What is this field's prior experience with CSAF practices?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Logic:** None – all respond**Data collection level:** Field**Data collection frequency:** Initial enrollment**Practice past use - this field****Data element name:** Practice past use - this field**Description:** Prior to enrollment, had this (these) CSAF practice(s) been used in this field in the in the past 3 years? Enter yes if all of the practices had been used previously in this field; enter some if multiple practices are being implemented and one or more, but not all of the practices had been used previously in this field; and enter no if none of the practices had been used previously in this field.**Data type:** List**Measurement unit:** Category**Reporting question:** Have this CSAF practice (combination) been implemented previously in this field?**Select multiple values:** No**Allowed values:**

- Yes
- Some
- No
- I don't know

Required: Yes**Logic:** None – all respond**Data collection level:** Field**Data collection frequency:** Initial enrollment



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Practice type**Data element name:** Practice type 1-7**Reporting question:** What CSAF practice is being implemented in this field through the project?

Description: Which CSAF practice or practices will be implemented on this field as part of enrollment in the project? CSAF practices are included in a list in Appendix A. The worksheet provides seven columns for this data element. Enter one value for each column. If there are fewer than 7 practices being implemented on this field through enrollment in the project, leave unnecessary columns blank.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** See list in Appendix A**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Practice standard****Data element name:** Practice standard 1-7**Reporting question:** What standard does the CSAF practice follow?

Description: Is the CSAF practice being implemented on the field as part of enrollment in the project following a defined practice standard? The worksheet provides seven columns for this data element. Enter one value for each column, corresponding to the practice types entered in the previous columns. If there are fewer than 7 practices being implemented on this field through enrollment in the project, leave unnecessary columns blank.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- NRCS
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Planned practice implementation year****Data element name:** Practice 1-7 implementation year**Reporting question:** What year is the CSAF practice planned to be implemented?

Description: Year that the CSAF practice is planned to be implemented on the field. Use 2022 for early adopters, defined as fields that have the practice actively implemented in 2022 (prior to contract being signed for this project). The worksheet provides seven columns for this data element. Enter one value for each column, corresponding to the practice types entered in the previous columns. If there are fewer than 7 practices being implemented on this field through enrollment in the project, leave unnecessary columns blank.

Data type: Integer**Select multiple values:** No**Measurement unit:** Year**Allowed values:** 2022-2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment**Practice extent****Data element name:** Practice 1-7 extent**Reporting question:** To what extent is the practice implemented?

Description: Total area, length, or head where the practice is being implemented in the field specified by the contract.

Data type: Decimal**Select multiple values:** No**Measurement unit:** Extent**Allowed values:** .01-100,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment



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Practice extent unit**Data element name:** Practice 1-7
extent unit**Reporting question:** Unit for extent of practice implementation**Description:** Unit for extent of practice implementation on the field specified by the contract. If "other" is chosen, use the additional column to enter the appropriate unit.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Acres
- Head of livestock
- Linear feet
- Square feet
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollmentCSAF Practice Sub-questions

For certain practices, additional questions are asked that provide information necessary to estimate greenhouse gas benefits from implementation of the practice. See Table 11 in the *CSAF Practice Sub-questions* section for descriptions of individual questions to be answered depending on the CSAF practices selected.



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Farm Summary**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
State or territory	State name (must match FSA farm enrollment data)
County of residence	County name (must match FSA farm enrollment data)

Producer TA received

Data element name: Producer TA received
1-3

Reporting question: What types of technical assistance were provided to this producer?

Description: Did the recipient or any partner provide technical assistance (TA) to the producer this year? Technical assistance is any training, education, capacity building or other support provided by any project partner(s) directly to producers enrolled in the project. List up to the top three most common types of TA provided to this producer. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If there are fewer than 3 TA types, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other TA types as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Demonstration plots
- Equipment demonstrations
- Group field days or in-person field workshops
- Hotline
- One-on-one enrollment assistance
- One-on-one field visits
- One-on-one producer mentorship
- Producer networks and peer-to-peer groups
- Retailer consultation
- Social media/digital tools
- Train-the-trainer opportunities
- Virtual meetings or field days
- Webinars and videos
- Written materials
- None
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Producer incentive amount

Data element name: Producer incentive amount

Reporting question: What is the total value of financial incentives provided to this producer?

Description: Total incentive payment received by the producer from USDA project funds for the year (non-cumulative). Do not include incentive payments made with partner match funds.

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

Allowed values: \$0-\$5,000,000

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly



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Incentive reason

Data element name: Incentive reason 1-4 **Reporting question:** Why were incentives provided to this producer?

Description: List up to four reasons for producer incentive payments. List the top 4 based on total value of the incentive for each reason. The worksheet provides four columns with a drop-down list of the allowed values. Choose one value for each column. If there are fewer than 4 reasons, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other reasons as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Avoided conversion
- Conference or training attendance
- Demographics/equity payment
- Enrollment
- Foregone revenue
- Historic data collection
- Identity preservation (supply chain tracing)
- Implementation of practices
- MMRV (e.g., data collection, reporting)
- Passing audit
- Price premium on output
- Yield change
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Incentive structure

Data element name: Incentive structure 1-4 **Reporting question:** What are the units for the financial incentives provided to this producer?

Description: List the structures (units) corresponding to the top 4 (by dollar value) incentive payments to producers. Production unit is weight or volume (bushel, kilogram, ton). The worksheet provides four columns with a drop-down list of the allowed values. Choose one value for each column. If there are fewer than 4 structure types, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other structure types as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Flat rate
- Per animal head
- Per area
- Per length
- Per production unit
- Per ton GHG
- Per tree
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly



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Incentive type**Data element name:** Incentive type 1-4**Reporting question:** What type of incentives were provided to each producer?

Description: List the top 4 types of incentive payments to producers (based on dollar value). The worksheet provides four columns with a drop-down list of the allowed values. Choose one value for each column. If there are fewer than 4 incentive types, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other incentive types as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Cash payment
- Equipment loan
- Guaranteed commodity premium payment
- Inputs and supplies
- Land rental
- Loan
- Paid labor
- Post-harvest transportation
- Tuition or fees for training
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Quarterly**Payment on enrollment****Data element name:** Payment on enrollment**Reporting question:** What portion of the financial incentive is provided to the producer upon enrollment in the project?

Description: Any incentive payment provided to the producer upon enrollment/signing a contract, and not related to any implementation, MMRV or sales activities. Full payment means the full incentive amount for any contract held by the producer is paid upon enrollment. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon enrollment. No payment means that none of the full incentive amount for any contract held by the producer is paid upon enrollment.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Quarterly**Payment on implementation****Data element name:** Payment on implementation**Reporting question:** What portion of the financial incentive is provided to the producer upon implementation of the practices?

Description: Any incentive payment provided to the producer upon implementing the practices included in the contract. Full payment means the full incentive amount for any contract held by the producer is paid upon implementation. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon implementation. No payment means that none of the full incentive amount for any contract held by the producer is paid upon implementation.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Quarterly



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Payment on harvest**Data element name:** Payment on harvest**Reporting question:** What portion of the financial incentive is provided to the producer upon harvest of the commodity?

Description: Any incentive payment provided to the producer upon harvesting or slaughtering the commodity included in the contract. Full payment means the full incentive amount for any contract held by the producer is paid upon harvest. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon harvest. No payment means that none of the full incentive amount for any contract held by the producer is paid upon harvest.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Quarterly**Payment on MMRV****Data element name:** Payment on MMRV**Reporting question:** What portion of the financial incentive is provided to the producer upon completing MMRV requirements?

Description: Any incentive payment provided to the producer upon completing the annual MMRV requirements included in the contract. Full payment means the full incentive amount for any contract held by the producer is paid upon MMRV being complete. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon MMRV being complete. No payment means that none of the full incentive amount for any contract held by the producer is paid upon MMRV being complete.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Quarterly**Payment on sale****Data element name:** Payment on sale**Reporting question:** What portion of the financial incentive is provided to producer upon sale of the commodity?

Description: Any incentive payment provided to the producer upon sale of the commodity included in the contract. Full payment means the full incentive amount for any contract held by the producer is paid upon sale. Partial payment means that only part of the full incentive amount for any contract held by the producer is paid upon sale. No payment means that none of the full incentive amount for any contract held by the producer is paid upon sale.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Quarterly



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Field Summary**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name (must match FSA farm enrollment data)
County of field	County name (must match FSA farm enrollment data)

Commodity type**Data element name:** Commodity type**Reporting question:** What type of commodity is produced from this field?

Description: Type of commodity produced in field enrolled in the project. See full list in Appendix B. The worksheet provides multiple columns with a drop-down list of the allowed values. Choose one value for each column. Leave unnecessary columns blank.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Practice type****Data element name:** Field practice type 1-7**Reporting question:** What CSAF practice is being implemented in this field through the project?

Description: Which climate-smart agriculture or forestry (CSAF) practice or practices are being implemented in this project? CSAF practices are included in a list in Appendix A. The worksheet provides seven columns for this data element. Enter one value for each column. If there are fewer than 7 practices being implemented on this field through enrollment in the project, leave unnecessary columns blank.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** See list in Appendix A**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Date practice complete****Data element name:** Date practice complete**Reporting question:** When did the project certify CSAF practice implementation as complete?

Description: Date that the project certifies that implementation of the CSAF practice is complete on the field. Use January of the year prior to contract year for early adopters, defined as fields that have the practice actively implemented in the year prior to a contract associated with this project is signed). The worksheet provides seven columns for this data element. Enter one value for each column, corresponding to the practice types entered in the previous columns. If there are fewer than 7 practices being implemented on this field through enrollment in the project, leave unnecessary columns blank.

Data type: Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



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Contract end date**Data element name:** Contract end date**Reporting question:** Contract end date**Description:** End date listed on the contract that enrolls the field in the project. If contract end date changes, submit updated end date during the next quarter's reporting.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**MMRV assistance provided****Data element name:** MMRV assistance provided**Reporting question:** Was MMRV assistance provided?**Description:** Was any MMRV assistance provided to the primary operator for this field? MMRV assistance includes in-field support for the use of technologies, consultation on data collection and input, and other support related to MMRV. MMRV is defined a measurement (calculations or estimations of GHG emissions), monitoring (ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time), reporting (documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization), and verification (independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable).**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Marketing assistance provided****Data element name:** Marketing assistance provided**Reporting question:** Was marketing assistance provided?**Description:** Was any marketing assistance provided to the primary operator for the commodity(ies) produced from this field? Marketing assistance includes guaranteeing the sale of the commodity(ies), providing a platform for the sale of the commodity(ies), providing a label, branding, or other support related to marketing.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Incentive per acre or head****Data element name:** Incentive per acre or head**Reporting question:** Is this field receiving a per-acre or per-head incentive?**Description:** Is this field receiving an incentive payment to implement a specific CSAF practice or set of practices on a per-acre or per-head (livestock) basis?**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



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Field commodity value

Data element name: Field commodity value	Reporting question: What is the value of the commodity produced on the enrolled field?
Description: The dollar value of the commodity produced on the enrolled field.	
Data type: Decimal	Select multiple values: No
Measurement unit: Dollars	Allowed values: \$1-\$10,000,000
Logic: None – all respond	Required: Yes
Data collection level: Field	Data collection frequency: Quarterly

Field commodity volume

Data element name: Field commodity volume	Reporting question: What is the volume of commodity produced on the enrolled field?
Description: The volume of the commodity produced on the enrolled field	
Data type: Decimal	Select multiple values: No
Measurement unit: Number	Allowed values: 1-10,000,000
Logic: None – all respond	Required: Yes
Data collection level: Field	Data collection frequency: Quarterly

Field commodity volume unit

Data element name: Field commodity volume unit	Reporting question: What is the unit of volume?
Description: The unit associated with the volume of the commodity produced on the enrolled field. If “other” is chosen, enter the appropriate value in the additional column.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: • Bushels • Carcass weight pounds • Gallons • Head • Linear feet • Liveweight pounds • Pounds • Tons • Other (specify)
Logic: None – all respond	Required: Yes
Data collection level: Field	Data collection frequency: Quarterly

Cost of implementation

Data element name: Cost of implementation	Reporting question: What is the cost of practice implementation in the field?
Description: Total annual estimated cost per unit of implementing the practice(s) in the enrolled field.	
Data type: Decimal	Select multiple values: No
Measurement unit: Dollars	Allowed values: \$1-\$10,000,000
Logic: None – all respond	Required: Yes
Data collection level: Field	Data collection frequency: Quarterly



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Cost unit**Data element name:** Cost unit**Reporting question:** What is the unit for cost?**Description:** The unit associated with the cost of implementing CSAF practices in the field. If "other" is chosen, enter the appropriate value in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Per acre
- Per bushel
- Per head
- Per linear foot
- Per pound
- Per ton
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Cost coverage****Data element name:** Cost coverage**Reporting question:** What percent of the practice cost is covered by the incentive?**Description:** Estimated proportion of total annual cost of implementing the practice(s) that is covered by project incentives.**Data type:** Integer**Select multiple values:** No**Measurement unit:** Percent**Allowed values:** 0-100**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field GHG monitoring****Data element name:** Field GHG monitoring 1-3**Reporting question:** How were GHG impacts monitored in this field?

Description: Up to the top three forms of monitoring GHG benefits as part of MMRV requirements. Monitoring is defined as ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time. Include up to 3 methods, based on which methods are most commonly used for this field. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 GHG monitoring methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG monitoring methods as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Drones
- Ground-level photos and videos
- On-farm inspection
- Plot-based sampling (e.g., soil, water)
- Producer records or attestation
- Satellite monitoring or remote sensing
- Soil metagenomics
- Soil sensors
- Water sensors
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



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Field GHG reporting**Data element name:** Field GHG reporting 1-3**Reporting question:** How were GHG benefits reported for this field?

Description: Up to the top three forms of reporting on GHG benefits as part of MMRV requirements. Reporting is defined as documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization. Include up to 3 methods, based on which methods are most commonly used for this field. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 GHG reporting methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG reporting methods as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Automated devices
- Email
- Mobile app
- Paper
- Third-party actors
- Website
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field GHG verification****Data element name:** Field GHG verification 1-3**Reporting question:** How was implementation of practices to reduce GHG emissions verified for this field?

Description: Up to the top three of verification of GHG benefits as part of MMRV requirements. Verification is defined as independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable. Include up to 3 methods, based on which methods are most commonly used for this field. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 GHG verification methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG verification methods as free text.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Artificial intelligence
- Computer modeling
- Recipient audit
- Photos
- Record audit
- Satellite imagery
- Site or field visit
- Third-party audit
- Other (specify)

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



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Field GHG calculations**Data element name:** Field GHG calculations**Description:** List the method(s) used to calculate GHG benefits in this field. If yes to direct physical measurements, submit result reports (see *Supplemental Data Submission – Field direct GHG measurement results*).**Data type:** List**Measurement unit:** Category**Logic:** None – all respond**Data collection level:** Field**Reporting question:** What methods are used to calculate GHG benefits in this field?**Select multiple values:** No**Allowed values:**

- Models
- Direct field measurements
- Both

Required: Yes**Data collection frequency:** Quarterly**Field official GHG calculation****Data element name:** Field official GHG calculation**Description:** List the method used to calculate the official GHG benefits in this field that are reported as part of the project's aggregate impact.**Data type:** List**Measurement unit:** Category**Logic:** None – all respond**Data collection level:** Field**Reporting question:** What method was used to calculate the official GHG benefits in this field?**Select multiple values:** No**Allowed values:**

- Models
- Direct field measurements

Required: Yes**Data collection frequency:** Quarterly**Field official GHG ER****Data element name:** Field official GHG emission reductions**Description:** Estimated greenhouse gas emission reductions from practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.**Data type:** Decimal**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Field**Reporting question:** What are the estimated total GHG emission reductions (CO₂eq) in this field?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Field official carbon stock****Data element name:** Field official carbon stock**Description:** Estimated total change in carbon stock based on practice implementation in this field. This data element can be reported in any quarter and is cumulative for the year. Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Field**Reporting question:** How much carbon has been sequestered in this field?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly



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Field official CO2 ER**Data element name:** Field official CO2 emission reductions**Reporting question:** What are the estimated total CO2 emission reductions in this field?**Description:** Estimated total carbon dioxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field official CH4 ER****Data element name:** Field official CH4 emission reductions**Reporting question:** What are the estimated total CH4 emission reductions in this field?**Description:** Estimated total methane emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field official N2O ER****Data element name:** Field official N2O emission reductions**Reporting question:** What are the estimated total N2O emission reductions in this field?**Description:** Estimated total nitrous oxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field offsets produced****Data element name:** Field offsets produced**Reporting question:** How many carbon offsets have been produced in this field?**Description:** Total carbon offsets produced in the field during the quarter (not cumulative). Offsets are defined as having been verified and certified using an accepted standard and sold into the carbon marketplace.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



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Field insets produced

Data element name: Field insets produced **Reporting question:** How many carbon insets have been produced in this field?

Description: Total carbon insets produced in the field during the quarter (not cumulative). Insets are defined as having been verified and certified using an accepted standard and accounted for within Scope 3 emissions for a firm.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Other field measurement

Data element name: Other field measurement **Reporting question:** Were data collected from the field for reasons other than GHG benefit estimation?

Description: Direct physical measurements or data collection taken in the field for any reason other than GHG benefits estimation. These reasons could include calibration of GHG estimation tools or models, tracking other environmental benefits (see Field environmental benefits report), and other reasons. If yes, submit corresponding reports (see *Supplemental data submission - Field direct measurement results*).

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly



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GHG Benefits - Alternate Modeled**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name (must match FSA farm enrollment data)
County of field	County name (must match FSA farm enrollment data)

Commodity type**Data element name:** Commodity type 1-6**Reporting question:** What type of commodity(ies) is produced from this field?

Description: Type of commodity(ies) produced in field enrolled in the project. See full list of commodity options in Appendix B. The worksheet provides multiple columns with drop-down lists of the allowed values. Choose one value for each column. Leave unnecessary columns blank

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Practice type****Data element name:** Practice type 1-7**Reporting question:** What CSAF practice is being implemented by this project?

Description: Which CSAF practice or practices are being implemented in this project? CSAF practices are included in a list in Appendix A. The worksheet provides seven columns for this data element. Enter one value for each column. If there are fewer than 7 practices being implemented by the project, leave unnecessary columns blank.

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** See list in Appendix A**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual



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GHG model**Data element name:** GHG model **Reporting question:** What model was used for alternate calculation of GHG benefits?**Description:** Select the model used for the alternate calculation of the field's GHG benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- ACC Calculator
- Agriculture, Forestry and Other Land Use (AFOLU) Carbon Calculator
- AIRES
- APEX
- Bowen Ratio Energy Balance
- Carat-Calculator
- CARPE
- CDFA web-based calculator
- COMET-Farm
- COMET-Planner
- CoolFarm
- Cover Crop Explore
- CropTrak
- CultivateAI's FMIS
- DayCent-CR
- DNDC
- DSSAT
- Earth Optics
- EcoPractices
- EPIC
- Extrapolation based on literature
- FieldPrint
- Granular
- GREET
- gTIR
- IFSM
- IPCC default emissions factors & models
- itree
- Nitrogen Balance
- Nutrient Tracking Tool (NTT)
- RCD Project Tracker
- Revised Universal Soil Loss equation 2 (RUSLE2)
- RuFaS
- SAFE-Link
- SALUS (CIBO)
- SNAPGRAZE
- SquareRoots
- SWAT-C
- SYMFONI
- Truterra Sustainability Tool
- Verra
- WEPP
- YardStick
- Other (specify)

Logic: None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual



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Model start date**Data element name:** Model start date**Reporting question:** For what time period are the GHG benefits modeled (model start date)?**Description:** Date that the model parameters begin.**Data type:** Date**Select multiple values:** NA**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/1950 – 12/31/2030**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Model end date****Data element name:** Model end date**Reporting question:** For what time period are the GHG benefits modeled (model end date)?**Description:** Date that the model parameters end.**Data type:** Date**Select multiple values:** NA**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023– 12/31/2030**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total GHG benefits estimated****Data element name:** Total GHG benefits estimated**Reporting question:** What is the alternate estimate of the field's total GHG emission reductions?**Description:** Total greenhouse gas emission reductions from practice implementation in the field estimated using an alternate model.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total carbon stock estimated****Data element name:** Total carbon stock estimated**Reporting question:** What is the alternate estimate of how much carbon has the field has sequestered?**Description:** Total change in carbon stock based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total CO₂ estimated****Data element name:** Total CO₂ estimated**Reporting question:** What is the alternate estimate of the field's total CO₂ emission reductions?**Description:** Total carbon dioxide emission reductions based on practice implementation in the field estimated using an alternate model.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual



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Total CH4 estimated**Data element name:** Total CH4 estimated**Reporting question:** What is the alternate estimate of the field's total CH4 emission reductions?**Description:** Total methane emission reductions based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total field N2O estimated****Data element name:** Total N2O estimated**Reporting question:** What is the alternate estimate of the field's total N2O emission reductions?**Description:** Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual



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GHG Benefits - Measured**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name (must match FSA farm enrollment data)
County of field	County name (must match FSA farm enrollment data)

GHG measurement method**Data element name:** GHG measurement method**Reporting question:** What measurement method is used to calculate GHG benefits?**Description:** Field-based measurement method used to calculate GHG benefits. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Select multiple values:** No**Allowed values:**

- Emissions measurement unit
- Flux towers
- Litterbags
- Plant measurements
- Portable emissions analyzers
- Soil flux chambers
- Soil samples
- Soil sensors
- Vehicle-mounted sensors
- Other (specify)

Required: If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Logic:** None – all respond**Data collection level:** Field**Data collection frequency:** Annual**Lab name****Data element name:** Lab name**Reporting question:** What is the name of the lab that processed the measurement samples?**Description:** Name of entity that received data and conducted analysis of samples.**Data type:** Text**Select multiple values:** No**Measurement unit:** NA**Allowed values:** Free text**Logic:** None – all respond**Required:** If applicable**Data collection level:** Field**Data collection frequency:** Annual



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Measurement start date**Data element name:** Measurement start date**Reporting question:** On what date did the measurement start?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements first began.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Measurement end date****Data element name:** Measurement end date**Reporting question:** On what date did the measurement end?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements were completed.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023– 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Total CO2 reduction calculated****Data element name:** Total CO2 reduction calculated**Reporting question:** What are the total measured CO2 emission reductions?**Description:** Total annual CO2 emission reductions based on practice implementation in the field calculated from in-field measurements.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Total field carbon stock measured****Data element name:** Total field carbon stock measured**Reporting question:** What is the total amount of carbon sequestered based on repeat measurements in this field?**Description:** Change in carbon stock based on practice implementation in the field calculated from repeat soil sampling in this field. (Results for initial field soil samples should be reported in the 'Soil sample result' and 'Measurement type' columns.) Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock measurements in this field**Data collection level:** Field**Data collection frequency:** Annual



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Total CH4 reduction calculated**Data element name:** Total CH4 reduction calculated**Reporting question:** What are the total measured CH4 emission reductions?**Description:** Total annual methane emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Total N2O reduction calculated****Data element name:** Total N2O reduction calculated**Reporting question:** What are the total measured N2O emission reductions?**Description:** Total annual nitrous oxide emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Soil sample result****Data element name:** Soil sample result**Reporting question:** What is the numeric result from this soil sample?**Description:** Results of measurement(s) taken to determine the carbon stock of a soil (the tons of carbon found in a specified volume of soil).**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Amount**Allowed values:** .00001-100,000**Logic:** None – all respond**Required:** If a project conducts soil samples in this field**Data collection level:** Field**Data collection frequency:** Annual



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Soil sample result unit**Data element name:** Soil sample result unit **Reporting question:** What is unit for the soil sample result?**Description:** Unit for the corresponding soil sample result. The worksheet provides a drop-down list of choices for this data element. If "other" is chosen, use the additional column to enter the appropriate yield unit as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Percent
- Ppm
- Grams
- Grams per cubic centimeter
- Other (specify)

Logic: None – all respond**Required:** If a project conducts soil samples in this field**Data collection level:** Field**Data collection frequency:** Annual**Measurement type****Data element name:** Measurement type**Reporting question:** What type of analysis was conducted for this soil sample?**Description:** Type of soil analysis conducted. The worksheet provides a drop-down list of choices for this data element. If "other" is chosen, use the additional column to enter the appropriate yield unit as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Organic matter
- Total organic carbon
- Bulk density
- Other (specify)

Logic: None – all respond**Required:** If a project conducts soil samples in this field**Data collection level:** Field**Data collection frequency:** Annual



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Additional Environmental Benefits**Unique IDs**

Farm ID	Unique Farm ID assigned by FSA
Tract ID	Unique Tract ID assigned by FSA
Field ID	Unique Field ID assigned by FSA
State or territory of field	State name (must match FSA farm enrollment data)
County of field	County name (must match FSA farm enrollment data)

Environmental benefits

Data element name: Environmental benefits

Reporting question: Are environmental benefits other than GHGs being tracked in the field?

Description: Tracking of environmental benefits other than greenhouse gas emission reductions and carbon sequestration in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss

Data element name: Reduction in nitrogen loss

Reporting question: Are reductions in nitrogen losses being tracked in the field?

Description: Tracking reductions in nitrogen losses in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss amount

Data element

name: Reduction in nitrogen loss amount

Reporting question: How much reduction in nitrogen losses have been measured in the field?

Description: Total amount of reduction in nitrogen losses that is measured and reported in the enrolled field.

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to 'Reduction in nitrogen loss'

Required: Yes

Data collection level: Field

Data collection frequency: Annual



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Reduction in nitrogen loss amount unit**Data element name:** Reduction in nitrogen loss amount unit**Description:** Unit for the total amount of reduction in nitrogen losses that is measured and reported in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Reduction in nitrogen loss'**Data collection level:** Field**Reporting question:** What is the unit for how much reduction in nitrogen losses have been measured in the field?**Select multiple values:** No**Allowed values:**

- Kilograms
- Metric tons
- Pounds
- Other (specify)

Required: Yes**Data collection frequency:** Annual**Reduction in nitrogen loss purpose****Data element name:** Reduction in nitrogen loss purpose**Description:** Purpose of tracking reduction in nitrogen losses in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Reduction in nitrogen loss'**Data collection level:** Project**Reporting question:** What is the purpose of tracking reduction in nitrogen losses?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Required: Yes**Data collection frequency:** Annual**Reduction in phosphorus loss****Data element name:** Reduction in phosphorus loss**Description:** Tracking of reductions in phosphorus losses in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Environmental benefits'**Data collection level:** Field**Reporting question:** Are reductions in phosphorus losses being tracked in the field?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Data collection frequency:** Annual**Reduction in phosphorus loss amount****Data element name:** Reduction in phosphorus loss amount**Description:** Total amount of reduction in phosphorus losses that is measured in the field.**Data type:** Decimal**Measurement unit:** Amount**Logic:** Respond if yes to 'Reduction in phosphorus loss'**Data collection level:** Field**Reporting question:** How much reduction in phosphorus losses have been measured in the field?**Select multiple values:** No**Allowed values:** 0-1,000,000**Required:** Yes**Data collection frequency:** Annual



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Reduction in phosphorus loss amount unit**Data element name:** Reduction in phosphorus loss amount unit**Description:** Unit for the total amount of reduction in phosphorus losses that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the unit for the reduction in phosphorus losses measured in the field?**Select multiple values:** No**Allowed values:**

- Kilograms
- Metric tons
- Pounds
- Other (specify)

Required: Yes**Logic:** Respond if yes to 'Reduction in phosphorus loss'**Data collection level:** Field**Data collection frequency:** Annual**Reduction in phosphorus loss purpose****Data element name:** Reduction in phosphorus loss purpose**Description:** Purpose of tracking reduction in phosphorus losses in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the purpose of tracking reductions in phosphorus losses?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Required: Yes**Logic:** Respond if yes to 'Reduction in phosphorus loss'**Data collection level:** Field**Data collection frequency:** Annual**Other water quality****Data element name:** Other water quality**Reporting question:** Are other water quality metrics being tracked in the field?**Description:** Project tracking of other water quality metrics in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Measurement unit:** Category**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Logic:** Respond if yes to 'Environmental benefits'**Data collection level:** Field**Data collection frequency:** Annual



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Other water quality type**Data element name:** Other water quality type**Description:** Type of other water quality metric (besides nitrogen loss and phosphorus loss reductions) that is measured in the field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Other water quality'**Data collection level:** Field**Reporting question:** What type of other water quality metric have been measured in the field?**Select multiple values:** No**Allowed values:**

- Sediment load reduction
- Temperature
- Other (specify)

Required: Yes**Data collection frequency:** Annual**Other water quality amount****Data element name:** Other water quality amount**Description:** Total amount of reduction in other water quality metrics that is measured in the enrolled field.**Data type:** Decimal**Measurement unit:** Amount**Logic:** Respond if yes to 'Other water quality'**Data collection level:** Field**Reporting question:** How much reduction in other water quality metrics have been measured in the field?**Select multiple values:** No**Allowed values:** 0-1,000,000**Required:** Yes**Data collection frequency:** Annual**Other water quality amount unit****Data element name:** Other water quality amount unit**Description:** Unit for the total amount of reduction in other water quality metrics that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Other water quality'**Data collection level:** Field**Reporting question:** What is the unit for the reduction in other water quality metrics measured in the field?**Select multiple values:** No**Allowed values:**

- Degrees F
- Kilograms
- Kilograms per liter
- Metric tons
- Pounds
- Other (specify)

Required: Yes**Data collection frequency:** Annual



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Other water quality purpose**Data element name:** Other water quality purpose**Description:** Purpose of tracking other water quality benefits in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Other water quality'**Data collection level:** Field**Reporting question:** What is the purpose of tracking other water quality benefits?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Required: Yes**Data collection frequency:** Annual**Water quantity****Data element name:** Water quantity**Reporting question:** Is water conservation being tracked in the field?**Description:** Tracking of water conservation or reduction in use in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Environmental benefits'**Data collection level:** Field**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Data collection frequency:** Annual**Water quantity amount****Data element name:** Water quantity amount**Reporting question:** How much water conservation has been measured in the field?**Description:** Total amount of water conservation or reduction that is measured in the field.**Data type:** Decimal**Measurement unit:** Amount**Logic:** Respond if yes to 'Water quantity'**Data collection level:** Field**Select multiple values:** No**Allowed values:** 0-1,000,000**Required:** Yes**Data collection frequency:** Annual**Water quantity amount unit****Data element name:** Water quantity amount unit**Reporting question:** What is the unit for the amount of water conservation measured in the field?**Description:** Unit for the total amount of water conservation or reduced use that is measured and reported in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Water quantity'**Data collection level:** Field**Select multiple values:** No**Allowed values:**

- Acre-feet
- Cubic feet
- Other (specify)

Required: Yes**Data collection frequency:** Annual



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Water quantity purpose**Data element name:** Water quantity purpose**Description:** Purpose of tracking water conservation or reductions in water use in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the purpose of tracking water conservation?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Logic: Respond if yes to 'Water quantity'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduced erosion****Data element name:** Reduced erosion**Reporting question:** Is reduced soil erosion being tracked in the field?**Description:** Tracking of reduced soil erosion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduced erosion amount****Data element name:** Reduced erosion amount**Reporting question:** How much erosion reduction has been measured in the field?**Description:** Total amount of erosion reduction that is measured in the enrolled field.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Amount**Allowed values:** 0-1,000,000**Logic:** Respond if yes to 'Reduced erosion'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduced erosion amount unit****Data element name:** Reduced erosion unit**Reporting question:** What is the unit for the amount of erosion reduction measured?**Description:** Unit for the total amount of erosion reduction from enrolled fields that is measured and reported by the project. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Tons
- Other (specify)

Logic: Respond if yes to 'Reduced erosion'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual



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Reduced erosion purpose**Data element name:** Reduced erosion purpose**Description:** Purpose of tracking reduced erosion the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the purpose of tracking reduced erosion in the field?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Logic: Respond if yes to 'Reduced erosion'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduced energy use****Data element name:** Reduced energy use**Reporting question:** Is reduced energy use being tracked in the field?**Description:** Tracking of reduced energy use in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduced energy use amount****Data element name:** Reduced energy use amount**Reporting question:** How much energy use reduction has been measured in the field?**Description:** Total amount of energy use reduction that is measured in the enrolled field.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Amount**Allowed values:** 0-1,000,000**Logic:** Respond if yes to 'Reduced energy use'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduced energy use amount unit****Data element name:** Reduced energy use unit**Reporting question:** What is the unit for the energy use reduction measured in the field?**Description:** Unit for the total amount of energy use reduction that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Kilowatt hours
- Other (specify)

Logic: Respond if yes to 'Reduced energy use'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual



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Reduced energy use purpose**Data element name:** Reduced energy use purpose**Description:** Purpose of tracking reduced energy use in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Reduced energy use'**Data collection level:** Field**Reporting question:** What is the purpose of tracking reduced energy use in the field?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Required: Yes**Data collection frequency:** Annual**Avoided land conversion****Data element name:** Avoided land conversion**Description:** Tracking of avoided land conversion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits. Land conservation means land use changing from agricultural uses to non-agricultural uses.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Environmental benefits'**Data collection level:** Field**Reporting question:** Is avoided land conversion being tracked in the field?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Data collection frequency:** Annual**Avoided land conversion amount****Data element name:** Avoided land conversion amount**Description:** Total amount of avoided land conversion that is measured in the enrolled field.**Data type:** Decimal**Measurement unit:** Amount**Logic:** Respond if yes to 'Avoided land conversion'**Data collection level:** Field**Reporting question:** How much avoided land conversion has been measured in the field?**Select multiple values:** No**Allowed values:** 0-1,000,000**Required:** Yes**Data collection frequency:** Annual**Avoided land conversion amount unit****Data element name:** Avoided land conversion unit**Description:** Unit for the total amount of avoided land conversion that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Avoided land conversion'**Data collection level:** Field**Reporting question:** What is the unit for the amount of avoided land conversion measured in the field?**Select multiple values:** No**Allowed values:**

- Acres
- Other (specify)

Required: Yes**Data collection frequency:** Annual



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Avoided land conversion purpose**Data element name:** Avoided land conversion purpose**Description:** Purpose of tracking avoided land conversion in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the purpose of tracking avoided land conversion in the field?**Select multiple values:** No**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Required: Yes**Logic:** Respond if yes to 'Avoided land conversion'**Data collection level:** Field**Data collection frequency:** Annual**Improved wildlife habitat****Data element name:** Improved wildlife habitat**Description:** Tracking of improvements to wildlife in and around the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Measurement unit:** Category**Reporting question:** Are improvements to wildlife habitat being tracked in the field?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Logic:** Respond if yes to 'Environmental benefits'**Data collection level:** Field**Data collection frequency:** Annual**Improved wildlife habitat amount****Data element name:** Improved wildlife habitat amount**Description:** Total amount of improved wildlife habitat that is measured in and around the enrolled fields.**Data type:** Decimal**Measurement unit:** Amount**Reporting question:** How much improved wildlife habitat has been measured in the field?**Select multiple values:** No**Allowed values:** 0-1,000,000**Logic:** Respond if yes to 'Improved wildlife habitat'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Improved wildlife habitat amount unit****Data element name:** Improved wildlife habitat unit**Description:** Unit for the total amount of improved wildlife habitat that is measured in and around enrolled fields. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the unit for the amount of improved wildlife habitat measured in the field?**Select multiple values:** No**Allowed values:**

- Acres
- Linear feet
- Other (specify)

Required: Yes**Logic:** Respond if yes to 'Improved wildlife habitat'**Data collection level:** Field**Data collection frequency:** Annual



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Improved wildlife habitat purpose

Data element name: Improved wildlife habitat purpose**Reporting question:** What is the purpose of tracking improved wildlife habitat in the field?**Description:** Purpose of tracking improved wildlife habitat in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

Logic: Respond if yes to 'Improved wildlife habitat'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual



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CSAF Practice Sub-questions

For some CSAF practices, there is an additional set of questions that are unique to each practice. Responses to these questions are needed to verify estimated GHG benefits of these practices. If a field is implementing a CSAF practice with an NRCS CPS code in Table 11, answer the follow-up questions listed next to the relevant practice name in the table. Use the *Supplemental Reporting Workbook – CSAF Practice Sub-questions* to report the required information.

Table 11. Follow-on questions for select CSAF practices

Practice name and code	Follow-up question	Options (select one)
Alley Cropping (CPS 311)	Species category (select most common/extensive type if using more than one)	Coniferous trees Deciduous trees Shrubs
	Species density (number of trees planted per acre)	1-10,000
Anaerobic Digester (CPS 366)	Waste storage system prior to installing anaerobic digester	Aerobic lagoon Anaerobic digester (complex mix) with energy generation Anaerobic digester (plug flow) with energy generation Anaerobic lagoon Composting Covered lagoon (no energy generation or flaring) Covered lagoon with energy generation Covered lagoon with flaring Daily spread Deep bedding pack Deep pit Dry lot Dry stacking/solid storage Pasture/range/paddock Poultry with bedding Poultry without bedding (e.g., high rise) Slurry tank/basin
		Covered lagoon with energy generation Covered lagoon with flaring Covered lagoon (no energy generation or flaring) Complex mix with energy generation Plug flow with energy generation Other (specify)
		Food waste Straw or bedding Wastewater Other (specify)



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Combustion System Improvement (CPS 372)	Fuel type before installation	Coal Diesel Electricity Gasoline Kerosene Liquified petroleum gas (LPG) Natural gas Propane Wood Other (specify)
	Fuel amount before installation	0-1,000,000
	Fuel amount unit before installation	Cubic feet (natural gas) Gallons (diesel, gasoline, propane, LPG, kerosene) Kilowatt-hours (electricity) Pounds (wood, coal) Other (specify)
	Fuel type after installation	Coal Diesel Electricity Gasoline Kerosene Liquified petroleum gas (LPG) Natural gas Propane Wood Other (specify)
	Fuel amount after installation	0-1,000,000
	Fuel amount unit after installation	Cubic feet (natural gas) Gallons (diesel, gasoline, propane, LPG, kerosene) Kilowatt-hours (electricity) Pounds (wood, coal) Other (specify)
Conservation Cover (CPS 327)	Species category (select most common/extensive type if using more than one)	Brassicas Grasses Legumes Non-legume broadleaves Shrubs



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Conservation Crop Rotation (CPS 328)	Conservation crop type	Brassica Broadleaf Cool season Grass Legume Warm season
	Change implemented	Added perennial crop Reduced fallow period Both
	Conservation crop rotation tillage type	Conventional (plow, chisel, disk) No-till, direct seed Reduced till Strip till None Other (specify)
	Total conservation crop rotation length in days	1-120
	Strip width (feet)	1-100
Contour Buffer Strips (CPS 332)	Species category	Grasses Forbs Mix
	Species category (select most common/extensive type if using more than one)	Brassicas Forbs Grasses Legume Non-legume broadleaves
Cover Crop (CPS 340)	Cover crop planned management	Grazing Haying Termination
	Cover crop termination method	Burning Herbicide application Incorporation Mowing Rolling/crimping Winter kill/frost
	Species category (select most common/extensive type if using more than one)	Grass Grass legume/forb mix Herbaceous woody mix Perennial or reseeded Shrubs Trees
Critical Area Planting (CPS 342)	Crude protein (percent)	0-100
	Fat (percent)	0-100
	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs
Feed Management (CPS 592)	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs



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	Strip width (feet)	20-1,000
Filter Strip (CPS 393)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs
Forest Farming (CPS 379)	Land use in previous year	Forest Multi-story cropping Pasture/grazing land Row crops Other agroforestry
Forest Stand Improvement (CPS 666)	Purpose for implementation	Maintain or improve forest carbon stocks Maintain or improve forest health and productivity Maintain or improve forest structure and composition Maintain or improve wildlife, fish, and pollinator habitat Manage natural precipitation more efficiently Reduce forest pest pressure Reduce forest wildfire hazard
Grassed Waterway (CPS 412)	Species category (select most common/extensive type if using more than one)	Flowering Plants Forbs Grasses
Hedgerow Planting (CPS 422)	Species category (select most common/extensive type if using more than one)	Grasses Shrubs Trees
	Species density (number of trees planted per acre)	1-10,000
Herbaceous Wind Barriers (CPS 603)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs
	Barrier width (feet)	1-1,000
	Number of rows	1-100
Mulching (CPS 484)	Mulch type	Gravel Natural Synthetic Wood
	Mulch cover (percent of field)	0-100



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Nutrient management (CPS 590)	Nutrient type with CPS 590	Biosolids Commercial fertilizers Compost EEf (nitrification inhibitor) EEf (slow or controlled release) EEf (urease inhibitor) Green manure Liquid animal manure Organic by-products Organic residues or materials Solid/semi-solid animal manure Wastewater
	Nutrient application method with CPS 590	Banded Broadcast Injection Irrigation Surface application Surface application with tillage Variable rate
	Nutrient application method in the previous year	Banded Broadcast Injection Irrigation Surface application Surface application with tillage Variable rate
	Nutrient application timing with CPS 590	Single pre-planting Single post-planting Split pre- and post-planting Split post-planting
	Nutrient application timing in the previous year	Single pre-planting Single post-planting Split pre- and post-planting Split post-planting
	Nutrient application rate with CPS 590	0-20,000
	Nutrient application rate unit with CPS 590	Gallons per acre Pounds per acre
Pasture and Hay Planting (CPS 512)	Nutrient application rate change	Decrease compared to previous year Increase compared to previous year No change
	Species category (select most common/extensive type if using more than one)	Cool-season broadleaf Cool-season grass Warm-season broadleaf Warm-season grass
	Termination process	Grazing Haying (i.e., cutting and baling) Other (specify)
Prescribed Grazing (CPS 528)	Grazing type	Cell grazing Deferred rotational Management intensive Rest-rotation



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Range Planting (CPS 550)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Legumes Shrubs Trees
Residue and Tillage Management – No-till (CPS 329)	Surface disturbance	None Seed row only
Residue and Tillage Management – Reduced Till (CPS 345)	Surface disturbance	None Seed row/ridge tillage for planting Shallow across most of the soil surface Vertical/mulch
Riparian Forest Buffer (CPS 391)	Species category (select most common/extensive type if using more than one)	Coniferous trees Deciduous trees Shrubs
	Species density (number of trees planted per acre)	1-10,000
Riparian Herbaceous Cover (CPS 390)	Species category (select most common/extensive type if using more than one)	Ferns Forbs Grasses Legumes Rushes Sedges
Roofs and Covers (CPS 367)	Roof/cover type	Concrete Flexible geomembrane Metal Timber Other (specify)
Silvopasture (CPS 381)	Species category (select most common/extensive type if using more than one)	Coniferous trees Deciduous trees Forage Shrubs
	Species density (number of trees planted per acre)	1-10,000
Stripcropping (CPS 585)	Strip width (feet)	1-1,000
	Crop category (select most common/extensive type if using more than one)	Erosion resistant crops Fallow Sediment trapping crops
	Number of strips	2-100
Tree/Shrub Establishment (CPS 612)	Species category (select most common/extensive type if using more than one)	Coniferous trees Deciduous trees Shrubs
	Species density (number of trees planted per acre)	1-10,000
Vegetative Barrier (CPS 601)	Species category (select most common/extensive type if using more than one)	Grasses Grass forb mix Grass legume mix
	Barrier width (feet)	3-1,000



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Waste Separation Facility (CPS 632)	Separation type	Chemical (e.g., salts, polymers) Mechanical (e.g., screens, presses) Settling basin
	Most common use of solids	Bedding Field applied Other (specify)
Waste Storage Facility (CPS 313)	Waste storage system prior to installing your waste storage facility	Aerobic lagoon Anaerobic digester (complex mix) with energy generation Anaerobic digester (plug flow) with energy generation Anaerobic lagoon Composting Covered lagoon (no energy generation or flaring) Covered lagoon with energy generation Covered lagoon with flaring Daily spread Deep bedding pack Deep pit Dry lot Dry stacking/solid storage Pasture/range/paddock Poultry with bedding Poultry without bedding (e.g., high rise) Slurry tank/basin
Waste Treatment (CPS 629)	Treatment type	Biological Chemical Mechanical
Waste Treatment Lagoon (CPS 359)	Waste storage system prior to installing waste treatment lagoon	Aerobic lagoon Anaerobic digester (complex mix) with energy generation Anaerobic digester (plug flow) with energy generation Anaerobic lagoon Composting Covered lagoon (no energy generation or flaring) Covered lagoon with energy generation Covered lagoon with flaring Daily spread Deep bedding pack Deep pit Dry lot Dry stacking/solid storage Pasture/Range/Paddock Poultry with bedding Poultry without bedding (e.g., high rise) Slurry tank/basin
	Is there a lagoon cover/crust?	Yes No
	Is there lagoon aeration?	Yes No



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Windbreak/Shelterbelt Establishment and Renovation (CPS 380)	Species category (select most common/extensive type if using more than one)	Coniferous trees Deciduous trees Shrubs
	Species density (number of trees planted per acre)	1-10,000



Appendix A: Climate-smart Agriculture and Forestry Practices

All NRCS Practice Standards (not limited to climate-smart practices)

309, Agrichemical Handling Facility	390, Riparian Herbaceous Cover
311, Alley Cropping	391, Riparian Forest Buffer
313, Waste Storage Facility	393, Filter Strip
314, Brush Management	394, Firebreak
315, Herbaceous Weed Treatment	395, Stream Habitat Improvement and Management
316, Animal Mortality Facility	396, Aquatic Organism Passage
317, Composting Facility	397, Aquaculture Pond
318, Short Term Storage of Animal Waste and By-Products	398, Fish Raceway or Tank
319, On-Farm Secondary Containment Facility	399, Fishpond Management
320, Irrigation Canal or Lateral	400, Bivalve Aquaculture Gear and Biofouling Control
324, Deep Tillage	402, Dam
325, High Tunnel System	410, Grade Stabilization Structure
326, Clearing and Snagging	412, Grassed Waterway
327, Conservation Cover	420, Wildlife Habitat Planting
328, Conservation Crop Rotation	422, Hedgerow Planting
329, Residue and Tillage Management, No Till	423, Hillside Ditch
330, Contour Farming	428, Irrigation Ditch Lining
331, Contour Orchard and Other Perennial Crops	428A, Irrigation Water Conveyance, Ditch and Canal Lining, Plain Concrete
332, Contour Buffer Strips	428B, Irrigation Water Conveyance, Ditch and Canal Lining, Flexible Membrane
333, Amending Soil Properties with Gypsum Products	428C, Irrigation Water Conveyance, Ditch and Canal Lining, Galvanized Steel
334, Controlled Traffic Farming	430, Irrigation Pipeline
336, Soil Carbon Amendment	432, Dry Hydrant
338, Prescribed Burning	436, Irrigation Reservoir
340, Cover Crop	441, Irrigation System, Microirrigation
342, Critical Area Planting	442, Sprinkler System
345, Residue and Tillage Management, Reduced Till	443, Irrigation System, Surface and Subsurface
348, Dam, Diversion	447, Irrigation and Drainage Tailwater Recovery
350, Sediment Basin	449, Irrigation Water Management
351, Well Decommissioning	450, Anionic Polyacrylamide (PAM) Application
353, Monitoring Well	453, Land Reclamation, Landslide Treatment
355, Groundwater Testing	455, Land Reclamation, Toxic Discharge Control
356, Dike and Levee	457, Mine Shaft and Adit Closing
359, Waste Treatment Lagoon	460, Land Clearing
360, Waste Facility Closure	462, Precision Land Forming and Smoothing
362, Diversion	464, Irrigation Land Leveling
366, Anaerobic Digester	466, Land Smoothing
367, Roofs and Covers	468, Lined Waterway or Outlet
368, Emergency Animal Mortality Management	472, Access Control
371, Air Filtration and Scrubbing	484, Mulching
372, Combustion System Improvement	490, Tree/Shrub Site Preparation
373, Dust Control on Unpaved Roads and Surfaces	500, Obstruction Removal
374, Energy Efficient Agricultural Operation	511, Forage Harvest Management
375, Dust Management for Pen Surfaces	512, Pasture and Hay Planting
376, Field Operations Emissions Reduction	516, Livestock Pipeline
378, Pond	520, Pond Sealing or Lining, Compacted Soil Treatment
379, Forest Farming	521, Pond Sealing or Lining, Geomembrane or Geosynthetic Clay Liner
380, Windbreak/Shelterbelt Establishment and Renovation	521A, Pond Sealing or Lining, Flexible Membrane
381, Silvopasture	521B, Pond Sealing or Lining, Soil Dispersant
382, Fence	521C, Pond Sealing or Lining, Bentonite Sealant
383, Fuel Break	
384, Woody Residue Treatment	
386, Field Border	
388, Irrigation Field Ditch	



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521D, Pond Sealing or Lining, Compacted Clay Treatment	632, Waste Separation Facility
522, Pond Sealing or Lining - Concrete	633, Waste Recycling
527, Sinkhole Treatment	634, Waste Transfer
528, Prescribed Grazing	635, Vegetated Treatment Area
533, Pumping Plant	636, Water Harvesting Catchment
543, Land Reclamation, Abandoned Mined Land	638, Water and Sediment Control Basin
544, Land Reclamation, Currently Mined Land	640, Waterspreading
548, Grazing Land Mechanical Treatment	642, Water Well
550, Range Planting	643, Restoration of Rare or Declining Natural Communities
554, Drainage Water Management	644, Wetland Wildlife Habitat Management
555, Rock Wall Terrace	645, Upland Wildlife Habitat Management
557, Row Arrangement	646, Shallow Water Development and Management
558, Roof Runoff Structure	647, Early Successional Habitat Development-Mgt
560, Access Road	649, Structures for Wildlife
561, Heavy Use Area Protection	650, Windbreak/Shelterbelt Renovation
562, Recreation Area Improvement	654, Road/Trail/Landing Closure and Treatment
566, Recreation Land Improvement and Protection	655, Forest Trails and Landings
570, Stormwater Runoff Control	656, Constructed Wetland
572, Spoil Disposal	657, Wetland Restoration
574, Spring Development	658, Wetland Creation
575, Trails and Walkways	659, Wetland Enhancement
576, Livestock Shelter Structure	660, Tree-Shrub Pruning
578, Stream Crossing	666, Forest Stand Improvement
580, Streambank and Shoreline Protection	670, Energy Efficient Lighting System
582, Open Channel	672, Energy Efficient Building Envelope
584, Channel Bed Stabilization	736, Crop By-Product Transfer, interim
585, Stripcropping	724, Water Treatment Facility, interim
587, Structure for Water Control	735, Waste Gasification Facility, interim
588, Crosswind Ridges	737, Reduced Water and Energy Coffee Conveyance System, interim
589, Cross Wind Trap Strips	740, Pond Sealing and Lining, Soil Cement, interim
590, Nutrient Management	751, Individual Terrace, interim
591, Amendments for Treatment of Agricultural Waste	753, Infiltration Ditch, interim
592, Feed Management	755, Well Plugging, interim
595, Pest Management Conservation System	770, Livestock Confinement Facility, interim
600, Terrace	775, Drainage Ditch Covering, interim
601, Vegetative Barrier	782, Phosphorus Removal System, interim
602, Equitable Relief	800, Controlling Existing Flowing Wells, interim
603, Herbaceous Wind Barriers	803, Water Well Disinfection, interim
604, Saturated Buffer	805, Amending Soil Properties with Lime, interim
605, Denitrifying Bioreactor	808, Soil Carbon Amendment, interim
606, Subsurface Drain	809, Conservation Harvest Management, interim
607, Surface Drain, Field Ditch	810, Annual Forages for Grazing Systems, interim
608, Surface Drain, Main or Lateral	812, Raised Beds, interim
609, Surface Roughening	815, Groundwater Recharge Basin or Trench, interim
610, Salinity and Sodic Soil Management	817, On-Farm Recharge, interim
612, Tree/Shrub Establishment	818, Water Conservation System, interim
614, Watering Facility	821, Low Tunnel Systems, interim
620, Underground Outlet	823, Organic Management, interim
629, Waste Treatment	
630, Vertical Drain	



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Other CSAF Practices

Traditional or cultural practices

Microbial products

Solar power generation

Grain bin construction

Pre-season drainage



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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Appendix B: Commodity List

CROPS

ALFALFA
ALMONDS
AMARANTH GRAIN
APPLES
APRICOTS
ARONIA (CHOKEBERRY)
ARTICHOKES
ASPARAGUS
ATEMOYA
AVOCADOS
BAMBOO SHOOTS
BANANAS
BARLEY
BEANS
BEETS
BIRDSFOOT/TREFOIL
BLUEBERRIES
BREADFRUIT
BROCCOFLOWER
BROCCOLI
BROCCOLINI
BRUSSEL SPROUTS
BUCKWHEAT
CABBAGE
CACAO
CACTUS
CAIMITO
CALABAZA MELON
CALALOO
CAMELINA
CANARY MELON
CANARY SEED
CANEERRIES
CANISTEL
CANOLA
CANTALOUPE
CARAMBOLA (STAR FRUIT)
CARROTS
CASHEW
CASSAVA
CAULIFLOWER
CELERIAC
CELERY
CHERIMOYA
CHERRIES
CHESTNUTS
CHICORY/RADICCHIO
CHINESE BITTER MELON
CHRISTMAS TREES
CHUFAS

CINNAMON
CLOVER
COCONUTS
COFFEE
CORN
COTTON ELS
COTTON UPLAND
CRANBERRIES
CRENSHAW MELON
CRUSTACEAN
CUCUMBERS
CURRANTS
DASHEEN
DATES
DURIAN
EGGPLANT
EINKORN
ELDERBERRIES
EMMER
FIGS
FINFISH
FLAX
FLOWERS
FORAGE SOYBEAN/SORGHUM
GAILON
GARLIC
GENIP
GINGER
GINSENG
GOOSEBERRIES
GOURDS
GRAPEFRUIT
GRAPES
GRASS
GREENS
GROUND CHERRY
GUAMABANA/SOURSOP
GUAR
GUAVA
GUAVABERRY
GUAYULE
HAZEL NUTS
HEMP
HERBS
HESPERALOE
HONEY
HONEYBERRIES
HONEYDEW
HOPS
HORSERADISH
HUCKLEBERRIES

HYBRID POPLAR TREES
IDLE
INDIGO
ISRAEL MELONS
JACK FRUIT
JERUSALEM ARTICHOKES
JICAMA
JOJOBA
JUJUBE
JUNEERRIES
KENAF
KHORASAN
KIWIBERRY
KIWIFRUIT
KOCHIA (PROSTRATA)
KOHLRABI
KOREAN GOLDEN MELON
KUMQUATS
LAMBS EAR
LEEKs
LEMONS
LENTILS
LESPEDEZA
LETTUCE
LIMES
LONGAN
LOQUATS
LYCHEE
MANGOS
MANGOSTEEN
MAPLE SAP
MAYHAW BERRIES
MEADOWFOAM
MILKWEED
MILLET
MIXED FORAGE
MOHAIR
MOLLUSK
MORINGA
MULBERRIES
MUSHROOMS
MUSTARD
NECTARINES
NIGER SEED
NONI
OATS
OKRA
OLIVES
ONIONS
ORANGES
PAPAYA



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PARSNIP	STRAWBERRIES	
PASSION FRUITS	SUGAR BEETS	
PAWPAW	SUGARCANE	<u>LIVESTOCK</u>
PEACHES	SUNFLOWERS	ALPACAS
PEANUTS	SUNN HEMP	BEEF COWS
PEARS	TANGELOS	BEEFALO
PEAS	TANGERINES	BUFFALO OR BISON
PECANS	TANGORS	CHICKENS (BROILERS)
PENNYCRESS	TANGOS	CHICKENS (LAYERS)
PEPPERS	TANNIER	DAIRY COWS
PERENNIAL PEANUTS	TARO	DEER
PERIQUE TOBACCO	TEA	DUCKS
PERSIMMONS	TEFF	ELK
PINE NUTS	TI	EMUS
PINEAPPLE	TOBACCO CIGAR WRAPPER	EQUINE
PISTACHIOS	TOBACCO BURLEY	GEESE
PITAYA/Dragonfruit	TOBACCO BURLEY 31V	GOATS
PLANTAIN	TOBACCO CIGAR BINDER	HONEYBEES
PLUMCOTS	TOBACCO CIGAR FILLER	LLAMAS
PLUMS	TOBACCO CIGAR FILLER BINDER	REINDEER
POMEGRANATES	TOBACCO DARK AIR CURED	SHEEP
POTATOES	TOBACCO FIRE CURED	SWINE
POTATOES SWEET	TOBACCO FLUE CURED	TURKEYS
PRUNES	TOBACCO MARYLAND	
PSYLLIUM	TOBACCO VIRGINIA FIRE CURED	
PUMMELO	TOMATILLOS	
PUMPKINS	TOMATOES	
QUINCES	TREES TIMBER	
QUINOA	TRITICALE	
RADISHES	TRUFFLES	
RAISINS	TURNIPS	
RAMBUTAN	VETCH	
RAPESEED	WALNUTS	
RHUBARB	WAMPEE	
RICE	WASABI	
RICE SWEET	WATERMELON	
RICE WILD	WAX JAMBOO FRUIT	
RUTABAGA	WHEAT	
RYE	WILLOW SHRUB	
SAFFLOWER	WINTER MELON	
SAPODILLA	WOLFBERRY/GOJI	
SAPOTE	YAM	
SCALLIONS		
SESAME		
SHALLOTS		
SORGHUM		
SORGHUM DUAL PURPOSE		
SORGHUM FORAGE		
SOYBEANS		
SPELT		
SQUASH		
STAR GOOSEBERRY		

Partnerships for Climate-Smart Commodities

Additional Specific Terms and Conditions

February 2023

I. Overarching Statement

The following award terms and conditions are applicable to Partnerships for Climate-Smart Commodities agreements and are in addition to the USDA FPAC General Terms and Conditions. The award recipient must abide by all terms of this grant including, but not limited to, the General Terms and Conditions, the terms in the Funding Opportunity and associated Frequently Asked Questions, and this addendum. The recipient must also deliver on the planned objectives in the project narrative and budget narrative associated with this grant.

II. Eligibility and Highly Erodible Lands and Wetlands Compliance

In order to be eligible for an incentive payment as a part of the Partnerships for Climate-Smart Commodities, a producer must:

- Establish Farm Records with the Farm Service Agency (FSA) (have farm, tract, and field numbers in place);
- Complete an AD-2047 (Customer Data Worksheet to facilitate the collection of customer data for Business Partner Record);
- Certify highly erodible land conservation (HEL) and wetland conservation (WC) compliance via Form AD-1026, Highly Erodible Land Conservation (HELC) and Wetland Conservation (WC) Certification; and
- Certify that they are not a foreign person or entity.

Farm, tract, and field numbers are required for the producer, and ultimately the Partnerships for Climate-Smart Commodities recipient, to report climate-smart practice implementation to USDA, as well as to certify and maintain HELC/WC compliance. This will require that some producers who do not already have these numbers, like perennial crop growers or feedlots, establish these records with USDA's FSA. Farm, tract, field numbers, producer name, and Core Customer I.D. (CCID) will be provided by the recipient to the National Program Officer as a part of routine grant reporting. Recipients must ensure that producers receiving financial assistance or incentives through this project use the same name as is included in the relevant FSA Business File for that Farm ID in any contracts or similar documentation kept by the recipient.

Producers are not bound by the payment limitations and the adjusted gross income (AGI) limitations that are in place for other USDA programs.

In order to demonstrate HELC/WC compliance for Partnerships for Climate-Smart Commodities incentive payments, producers will need to request a copy of their subsidiary print from their

USDA FSA field office. The Subsidiary Print includes print year specific eligibility related information about a selected producer. The producer will then provide this documentation to the Partnerships for Climate-Smart Commodities recipients as proof of compliance. A current year subsidiary print will be required for each crop year that the producer receives a payment, and HELC/WC eligibility information is provided under the AD-1026 and Conservation Compliance sections of subsidiary (determined by year, which can change at any time during the year or in a subsequent year). As is the case already, field offices will not be expected to provide documentation to anyone besides the producer themselves (and must always comply with Section 1619 limitations if they ever do provide documentation to third parties). Producers must have control of the land for the term of their beneficiary contract.

Recipients are responsible for determining producer eligibility within the funding opportunity requirements. Recipients must inform producers of eligibility requirements and direct them to local USDA offices for requested information as necessary, including but not limited to, farm and tract establishment and Highly Erodible Land and Wetland Compliance determinations. Privacy of producers is a priority throughout this process, and recipients are responsible for maintaining producer privacy in the process.

At minimum, the recipient will collect and review subsidiary reports from participating producers. They will ensure that the producer is listed as “compliant” in all sections of the conservation compliance portion of subsidiary and “certified” for AD-1026 before an incentive payment is made. If payments to a producer span more than one Federal fiscal year, the recipient will review an updated subsidiary print each fiscal year to ensure that the status is still compliant.

III. Other Environmental and Cultural Resources Reviews

A Finding of No Significant Impact (FONSI) was signed by USDA NRCS on August 26, 2022. A copy of the Programmatic Environmental Assessment for Partnerships for Climate-Smart Commodities is available at www.usda.gov/climate-smart-commodities. USDA may determine that additional environmental and cultural resources review is needed for any particular action under Partnerships for Climate-Smart Commodities. The recipient must not execute any beneficiary contracts under this grant agreement prior to receipt of a letter from USDA that specifically details:

- 1) further procedures deemed appropriate by the Agency to ensure a completed National Environmental Policy Act (NEPA) review and all appropriate consultation requirements are met, and
- 2) additional instructions for any unanticipated discoveries or conditions.

A resolution of support is required for projects on Tribal lands from the governing body of the Tribe with jurisdiction over that land, if the applicant is not the Tribe nor an entity owned or

operated by that Tribe. USDA may approve alternative documentation for resolutions when USDA deems necessary and legally sufficient.

IV. Producer Benefits

USDA encourages the recipient to disclose to participating producers the manner and amount for which any market premiums derived from the development of the relevant climate-smart commodity will be shared between participating parties, including producers. USDA will be monitoring producer benefits, in particular those to small and underserved producers, throughout the grant period. Recipients agree that their project(s) will implement a plan for engaging small and underserved producers as laid out in this agreement.

V. Producer Data Protection and Disclosure

Recipients must ensure each producer has convenient access to any data collected from that producer or the producer's land and any associated modeling as part of the project. The recipient must provide each producer applying for benefits under this grant a description in writing of how their information, including but not limited to data about their farm and commodities, will be utilized, protected and shared as applicable.

VI. Other Data and Reporting Requirements

In addition to the reporting information provided in the statement of work and General Terms and Conditions, USDA will provide a template for the Detailed Progress Report, also known as the Partnerships for Climate-Smart Commodities (PCSC) Project Reporting Workbook. Within 30 calendar days of execution of this grant, a copy of this workbook will be posted at www.usda.gov/climate-smart-commodities or an alternative location provided to the recipient by the National Program Officer. USDA may provide updates to the PCSC Project Reporting Workbook or submission methods to streamline the data collection process and/or reduce the burden on the recipient throughout the grant period. Generally, these updates will be provided at least 3 months in advance of any required changes. The recipient must not transfer any data to foreign governments or foreign entities without prior approval from USDA.

USDA will provide a Technical Contact for this grant. The Technical Contact will have the responsibility of technical oversight for USDA for the project. The recipient is responsible for providing the technical assistance required to successfully implement and complete the project. The recipient must comply with any requests for information from the Technical Contact. The Technical Contact for this award is the National Program Officer assigned to this grant.

Prior to execution of this grant, the recipient must provide a shapefile depicting the project boundary for enrollment under this grant. Producer enrollment may not occur outside this boundary without modification of this grant.

Within 30 calendar days of execution of this grant, the recipient must provide to the National Program Officer a website address where enrollment information will be posted for producers for the project associated with this grant. Recipients will be responsible for the following reports:

- Submit quarterly performance reports that include a written progress report, as well as additional reporting on specific data elements contained in the most up-to-date version of the Partnerships for Climate-Smart Commodities Project Reporting Workbook. Additional information about each reported element is described in the Data Dictionary.
- Submit supplemental reports required to validate greenhouse gas (GHG) benefit data, including: (1) an initial project MMRV plan, (2) field-modeled GHG benefit reports, and (3) field-direct GHG measurement results, as applicable. Additional information about these reports is included in the Data Dictionary.
- Submit copies of project outputs and deliverables (e.g., fact sheets, reports) as attachments in ezFedGrants along with quarterly performance reports.
- Report the version of COMET-Planner used to estimate GHG benefits of the project within each quarterly performance report. As COMET-Planner is updated, recipients must adopt the latest version of the tool as directed by USDA for use in performance reports.

Recipients must designate an individual as a member of the USDA Partnerships for Climate-Smart Commodities Learning Network (Partnerships Network); this representative should be identified in the Project Narrative for this grant. Each project includes a plan for up to two Partnerships Network virtual meetings and two in-person meetings a year during the project duration. Dates and other details on events will be posted at www.usda.gov/climate-smart-commodities or an alternative location provided to the recipient by the National Program Officer.

The Partnerships Network will be co-chaired by representative from the USDA Office of the Chief Economist and the Farm Production and Conservation Mission Area. The Partnerships Network will inform synthesis reports to be assembled by USDA on a range of topics related to the implementation of Partnerships for Climate-Smart Commodities projects, including:

- Lessons-learned as projects are implemented;
- Options for providing technical assistance;
- Procedures for measurement/quantification, monitoring, reporting, and verifying GHG benefits;
- Options for tracing climate-smart commodities through the supply chain;
- Mechanisms for reducing costs of implementation;
- A forum for discussion and learning regarding approaches to climate-smart agriculture and forestry implementation (including but not limited to deployment and

measurement/quantification, monitoring, reporting, tracking, and verification of associated greenhouse gas benefits and marketing of climate-smart commodities).

- Synthesis of outcomes; and
- Opportunities for USDA and others to inform future approaches to generating new and expanded markets for climate-smart commodities.

The Partnerships Network topics to be discussed will cover at minimum the areas described in previous FAQs and will evolve with USDA's ongoing project data analysis efforts and with input from the project recipients on the kinds of sessions that will be most helpful to them in building the diverse climate-smart markets associated with their projects. Participation may include at least one interview a year and include questions related to the following areas:

- Technical assistance approaches, methods, and successes and/or challenges
- Producer outreach approaches, methods, and successes and/or challenges
- Monitoring, measurement, reporting, and verification (MMRV) approaches, methods, and successes and/or challenges
- Marketing approaches, methods, and successes and/or challenges
- Partnership approaches, methods, and successes and/or challenges
- Data collection and storage approaches, methods, and successes and/or challenges
- Supply chain approaches, methods and successes and/or challenges, including approaches to traceability
- Supply chain benefits and demand for climate-smart commodities
- Perspectives on program design, climate-smart commodity definitions, and future approaches or opportunities
- Project successes and stories

USDA may also request producer exit reports at a later date. Additional marketing and branding-related requirements may be provided by USDA, including signage related to Partnerships for Climate-Smart Commodities.

VII. Competition and Anti-Competitive Practices

In connection with this grant, recipients may not prohibit or otherwise limit a producer from changing the provider of other services or materials not included as part of this grant. Recipients may not condition, limit, steer, or discriminate in their provision or sale of non-project business functions or products to producers based on their participation or non-participation in or use of any services provided as part of this grant. Additionally, funds in this agreement shall not be used for purposes or activities related to mergers or acquisitions.

VIII. Suspension and Disbarment

The provisions governing Suspension and Disbarment in subsection 1.a.8 shall also apply to fraud, embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or violations of the Federal civil antitrust or unfair trade practice laws.

IX. Special provisions for awards to for-profit entities as recipients

This section contains provisions that apply to awards to for-profit entities. These provisions are in addition to other applicable provisions of these terms and conditions, or they make exceptions from other provisions of the terms and conditions for awards to for-profit entities. For-profit entities that receive awards have two options regarding audits:

- 1) A financial related audit of a particular award in accordance with Generally Accepted Government Auditing Standards issued by the Comptroller General of the United States, in those cases where the for-profit entity receives awards under only one USDA program; or, if awards are received under multiple USDA programs, a financial related audit of all awards in accordance with Generally Accepted Government Auditing Standards issued by the Comptroller General of the United States; or
- 2) An audit that meets the requirements contained in 2 CFR 200 subpart F.

For-profit entities that receive annual awards totaling less than the audit requirement threshold in 2 CFR 200 subpart F are exempt from USDA audit requirements for that year, but records must be available for review by appropriate officials of Federal agencies or the Government Accountability Office.

X. Non-Disparagement

Recipients may not engage in any advertising deemed by USDA as disparaging to another agricultural commodity or competing product, or in violation of the prohibition against false and misleading advertising. Disparagement is defined as anything that depicts other commodities in a negative or unpleasant light via overt or subjective video, photography, or statements. Comparative advertising is allowable, provided the presentation of facts is truthful, objective, not misleading, and supported by a reasonable basis.