U.S. Department of Agriculture
Natural Resources Conservation Service

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number	2. Amendment Number	3. Award /Project Period	4. Type of award instrument:
NR233A750004G011		Date of Final Signature -04/30/2028	Grant Agreement

5. Agency (Name and Address)	6. Recipient Organization (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	MERIDIAN INSTITUTE, THE PO BOX 1829 DILLON CO 80435 UEI Number / DUNS Number: GCDUJ7YHDK58 / 018902408 EIN:

7. NRCS Program Contact	8. NRCS Administrative Contact	9. Recipient Program Contact	10. Recipient Administrative Contact
Name: TANYA CULBERT	Name: MICHELE DEVANEY	Name: Jackie Manguso	Name: Sonali Lamba
(b)(6)			

11. CFDA	12. Authority	13. Type of Action	14. Program Director
10.937	15 USC 714 et seq	New Agreement	Name: Sonali Lamba (b)(6)

15. Project Title/ Description: Expands climate-smart fruit,vegetable,livestock,row crop,specialty crop markets in CA,IA,IN,MI,MN,MO,NE,NC,ND,NY,OK,OR,SD,WI,WA-supports farmer climate-smart practice implementation and monitoring.

16. Entity Type: M = Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)

17. Select Funding Type

Select funding type:	☒ Federal	☒ Non-Federal
Original funds total	19,999,904.000	$4,545,702.00
Additional funds total	$0.00	$0.00
Grand total	19,999,904.000	$4,545,702.00

18. Approved Budget

Personnel	$207,070.00	Fringe Benefits	$102,914.00
Travel	$195,280.00	Equipment	$0.00
Supplies	$58,865.00	Contractual	$2,670,698.00
Construction	$0.00	Other	16,765,077.000
Total Direct Cost	19,971,868.000	Total Indirect Cost	$28,036.00
		Total Non-Federal Funds	$4,545,702.00
		Total Federal Funds Awarded	19,999,904.000
		Total Approved Budget	24,545,606.000

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: 2023.04.04 10:20:51 -05'00'	Date
Name and Title of Authorized Recipient Representative JACKIE MANGUSO CHIEF FINANCIAL OFFICER	Signature Jackie Manguso Digitally signed by Jackie Manguso Date: 2023.03.30 10:26:47 -06'00'	Date

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, audiotape, 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 The Meridian Institute (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 $ 24,545,606

TOTAL FEDERAL FUNDS $19,999,904
PERSONNEL $188,342
FRINGE BENEFITS $93,606
TRAVEL $195,280
EQUIPMENT $0
SUPPLIES $58,865
CONTRACTUAL $2,670,698
CONSTRUCTION $0
OTHER $16,765,077 (includes $6,175,887 PRODUCER INCENTIVES)
TOTAL DIRECT COSTS $19,971,868
INDIRECT COSTS $28,036

TOTAL NON-FEDERAL FUNDS $4,545,702
PERSONNEL $188,342
FRINGE BENEFITS $93,606
TRAVEL $7,500
EQUIPMENT $0
SUPPLIES $24,000
CONTRACTUAL $294,500
CONSTRUCTION $0
OTHER $3,937,754 ($0 PRODUCER INCENTIVES)
TOTAL DIRECT COSTS $4,545,702
INDIRECT COSTS $0

Recipient has elected to use the de minimis indirect cost rate and apply 9.94% to personnel and fringe benefits only.

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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The Meridian Institute (a prime awardee), as fiscal sponsor for
Project Lead, The Soil Inventory Project (TSIP)
USDA Partnerships for Climate-Smart Commodities

Partnership to Define Climate-Smart Commodities Impact and Unlock Consumer Demand (TSIP Partnership for Impact and Demand/ The TSIP Partnership)
Project Partner

The Soil Inventory Project (TSIP)
Jackson Family Wines, Members of the International Wineries for Climate Action (Cakebread Cellars, A to Z Wineworks, Medlock Ames, Ridge Vineyards, Hunt Country Vineyards, Silver Oak & Twomey Cellars, Spottswoode Estate and Vineyard & Winery, Crimson Wine Group)
The Glynwood Center for Regional Food and Farming
Nature For Justice
Bayer Crop Sciences, LLC
Deelo Consulting Services, LLC

Underserved/minority focused project partners

The Glynwood Center for Regional Food and Farming
Nature For Justice

Program Director
Sonali Lamba
Executive Director, TSIP
sonali@tsip.org
(407) 314-1027

Signatory Official
Jackie Manguso
Chief Financial Officer, Meridian Institute
jmanguso@merid.org
(970) 29603053

I. EXECUTIVE SUMMARY OF PILOT PROJECT

This project will work with 472 producers to implement CSAF on approximately 120,000 acres across the US, sequestering an estimated 308,659 MT CO^2e. It quantifies specific CSAF impacts to unlock consumer demand and catalyze market mechanisms to scale CSAF beyond the project term.

A. Compelling need for the project

Demonstrating Climate-Smart Farming (CSAF) impact will catalyze Climate-Smart Commodity (CSC) market development. Scaling CSAF requires CSC demand to drive it (Scherer and Verburg, 2017). CSAF and CSCs will, combined, expand climate resilience, shore up food security, and sequester and store greenhouse gas (GHG).

Demonstrating value and impact is a key barrier to agricultural innovation adoption (Long et al., 2016). In order to transition management to build CSC supply, commodity producers need farm-level data to evaluate the cost, benefit, and return-on-investment (ROI). Consumers need value propositions communicated clearly (Reinstaller, 2008; Long et al., 2016). Farm-accurate, locally-specific, and scalable impact data strengthens climate-smart brand claims, drives consumer confidence, and creates demand to fuel commodity growth (Li et al., 2022; Kivetz et al., 2006; Heath and Starr, 2022). The Soil Inventory Project (TSIP) proposes **The Partnership**

to Define Climate-Smart Commodities Impact and Unlock Consumer Demand (TSIP Partnership for Impact and Demand) to implement CSAF practices across more than 120,000 acres of US agricultural land, measure their impact, and produce GHG and farm resilience impact quantifications that acquire CSC consumers and producers and increase purchases.

The TSIP Partnership for Impact and Demand is a collaboration between leaders in CSAF implementation, experts field operations and biogeochemical modeling, varied and collaborative farm networks, and a farm sustainability technical assistance provider. This project will:

1. Implement climate-smart farming practices in New York, North Carolina, California, Oregon and Washington. We anticipate reaching 352 producers. Project partners are leaders in CSAF practice adoption, a critical resource to scaling agricultural innovation and creating new markets (Rogers, 1962; Berger et al., 2001). The Glynwood Center for Regional Food and Farming will reach small- mid-scale diversified farms in New York's Hudson Valley. Nature for Justice will reach Black-owned row crop and diversified farms in northern North Carolina. Jackson Family Wines and the International Wineries for Climate Action (IWCA) will reach vineyards in California, Oregon, and Washington.

2. Measure management practice impacts via a low-cost and distributed MMRV system developed by The Soil Inventory Project (TSIP). TSIP streamlines field data collection and combines sample results with modeling to make impact quantifications accurate and locally specific but also scalable. TSIP produces analytical outputs for this partnership at varying scales. TSIP will publish CSAF impact by region and predict impact of larger-scale CSAF adoption. Field data will be made public with permission from producers. Each participating producer will collect soil samples at both project start and project completion, allowing for TSIP to detect change in % total carbon and carbon stocks as a product of climate-smart farming practice adoption. Additionally, Bayer Crop Sciences will reach 100 growers within its network, across 100,00 acres in the Midwest US, all who are transitioning to climate-smart farming practices. These growers will participate in the TSIP Partnership by using the TSIP soil sampling system to measure practice impacts and share their data.

3. Expand CSC markets with CSAF impact quantifications. Applying TSIP MMRV results, Deelo Consulting Services LLC (DCS) will produce climate-smart marketing materials that demonstrate climate impact of commodities. They will make these available for farmers to use. Quantifications will catalyze direct-to-consumer sales, wholesale markets, and brand claims. Specific impact quantification will increase confidence in climate-smart farming outcomes for producers and consumers and decrease investment risk. It will increase consumer acquisition and accelerate purchasing, critically unlocking demand for CSCs.

Geographic foci, colored by project partner and weighted by land area. Red: JFW and ICWA. Blue: US row crop growers from Bayer Crop Sciences. Green: Nature For Justice. Yellow: Glynwood.

B. Approach to minimize transaction costs associated with project activities

The Partnership will minimize transaction costs and create economies of scale in four ways.

1. Leverage existing regional networks to identify and organize individual landowners. Farmer networks have established trust with producers. This project will work through these existing relationships to identify and support producers according to their needs while minimizing transaction costs. Partnering with networks connects assistance to farmers who are already interested in CSAF implementation, streamlining practice implementation (Lengnick, 2019).

2. Apply TSIP's low-cost MMRV to reduce soil inventory costs. Producer-led, distributed measurement can eliminate over 60% of labor, transport, and planning costs of traditional field sampling, without compromising accuracy.[1] TSIP is building in-depth training and support materials that will equip growers with the knowledge they need to sample effectively and while providing third parties the confidence they seek the data is collected accurately. Connecting this distributed field work to streamlined, centralized laboratory analysis makes the process cost-efficient, scalable, and reliable. In addition to saving time and money, TSIP's distributed inventory system applies a single approach to sampling design across a wide geography, reducing transaction costs in comparing field results from different protocols.

3. Pay producers to sample to reduce inventory transaction costs. Paying producers for their time reduces the transaction costs of planning and producer time in field work. Additionally, paying producers signals respect to the opportunity cost of their time, as they participate in key research that will support soil sampling nationwide in the future.

4. Apply TSIP's streamlined and flexible approach to analysis removing the transaction cost of custom, manual reporting. TSIP designs technology and data management using a lean and iterative approach. This reduces transaction costs while creating data and analysis products that respond to user needs and feedback. Other agricultural networks and organizations can plug into TSIP's platform for practice measurement and marketing.

[1] Limited data is in part due to high sampling costs coupled with substantial spatial variability (Smith et al., 2020).

C. Approach to reduce producer barriers to implementing CSAF practices for the purpose of marketing climate-smart commodities

Costs of and barriers to agricultural innovation include implementation cost, information and planning costs, personal adjustment costs, and risk (Berger, 2001). Five key supports reduce barriers to implementing CSAF practices for the purpose of marketing CSCs.

1. Financial assistance to implement CSAF practices.
2. Technical assistance to plan for CSAF implementation. This project will build a national CSAF technical assistance strategy and work with trusted, knowledgeable service providers at and/or peer experts on the ground to connect with farmers. The process will be iterative and improve over the course of the project and provide a framework for national adoption.
3. Organization via trusted regional partners builds local capacity for knowledge and structural support for sustained CSAF practices, fostering community knowledge-sharing to make implementation easier. This reduces information cost, personal adjustment costs, and risk.
4. Data to measure and benchmark impact will provide producers with corresponding confidence to invest in and maintain CSAF practices beyond the term of the partnership. This reduces risk.
5. Market-ready metrics will help promote sales and CSC compliance with large supply-chain partners. Metrics will include data around resilience benefits—a key metric to justify transition costs on the supply side. The TSIP Partnership for Impact and Demand will also provide carbon benefit quantification—a familiar metric that builds confidence and purchase intent on the demand side. This reduces risk.

D. Geographic Focus

The TSIP Partnership for Impact and Demand will work with producers in New York, North Carolina, California, Oregon, Washington and Midwestern states including but not limited to North Dakota, South Dakota, Wisconsin, Indiana, Michigan, Minnesota, Iowa, Missouri, Nebraska, and Oklahoma. This comprises an inclusive and ambitious national approach.

E. Project management capacity of partners, including a description of existing relationship with and/or prior experience working with producers or land owners, promoting climate-smart activities and marketing climate smart commodities.

The Meridian Institute - Meridian Institute is a 501(c)(3) nonprofit organization and consultancy that supports companies addressing agriculture and food systems, climate change, and healthcare and provides fiscal sponsorship for emerging nonprofits with mission alignment to its own. Meridian serves as the fiscal sponsor for the project lead The Soil Inventory Project (TSIP). In its role, as contractually agreed, Meridian provides financial auditing, bookkeeping, contract formation, reporting requirements, and general fiduciary services and support. Meridian has extensive experience managing complex grant finance and provides TSIP with the key program infrastructure it needs to successfully execute this project. Meridian is considered a prime awardee.

The Soil Inventory Project – TSIP is the project lead, under the direction of its Executive Director, Sonali Lamba, a full-time contractor of TSIP via Meridian's fiscal sponsorship. A collaboration between experts in biogeophysics and soil inventory, TSIP is a non-stock,

non-profit corporation developing and hosting a national-scale soil carbon inventory and leads project MMRV. TSIP has surveyed 50,000 acres to date with a pipeline of 100,000+ acres from new partnerships and growers eager to sample their own lands for carbon information and contribute data to TSIP's registry and data product development. TSIP serves as the project lead, under the direction of Sonali Lamba, TSIP's Executive Director. For the last two years, Miss Lamba has overseen development and management of TSIP's growth strategy, technology infrastructure and launch and partnerships, while providing leadership coordination among TSIP's various co-founders and partners. She is also an Adjunct Lecturer in the Department of Entrepreneurship and Innovation at Northwestern University's Kellogg School of Management. TSIP was co-founded by Dr. Kris Covey and Dr. Bruno Basso. Details about their experience and roles in this project are listed below.

Skidmore College - Dr. Kris Covey, is an Assistant Professor of Environmental Studies and Sciences at Skidmore College where he runs Covey Lab. As TSIP's co-founder and President, he developed the field sampling tools and protocols for distributed, producer-led and lab analysis-driven large-scale soil inventory. Dr. Covey holds expertise in quantifying the flux of greenhouse gases from terrestrial ecosystems. Previously at Yale University, Dr. Covey co-founded Quick Carbon, a rapid soil carbon assessment approach. In his role with The Partnership for Impact at Demand, Dr. Covey will be coordinating field sampling kit distribution and analysis across the project.

Michigan State University - Dr. Bruno Basso, is the Michigan State University Foundation Profession in the Department of Earth and Environmental Sciences, where he runs Basso Lab. Dr. Basso is a co-founder and Chief Science Officer for TSIP and leads all modeling efforts. Dr. Basso is an international leader in agricultural modeling for yield prediction and identification of climate solutions. Dr. Basso was most recently awarded the distinction of Fellow of the American Academy for the Advancement of Science (AAAS) for his contributions to the field of agronomy with particular reference to quantitative modeling and the application of precision technologies. In his role with The Partnership for Impact and Demand, Dr. Basso will advance understanding of the relationship between measured soil carbon and management practices, applying a process-based modeling approach in connection with remote sensing data and artificial intelligence/machine learning (AI/ML) analytics. This approach allows us to account for interactions between soil, climate, genetics and management practices across the US cropping systems. This allows The TSIP Partnership to achieve its ultimate analysis goal is to identify practices that show enhanced resilience to climate variability and change to achieve stable productivity and climate benefits while maintaining farm profitability.

The Glynwood Center for Regional Food and Farming – Glynwood promotes regional food and farming through four core strategies that emphasize stakeholder collaboration all along the supply chain, building these programs over two decades. Glynwood's staff work directly with local farm and food businesses to offer apprenticeships on Glynwood's farm and on farms throughout the Hudson Valley; facilitate the Collaborative Regional Alliance for Farmer Training (CRAFT), a model of farmer-led on-farm training; support the professional development of diverse technical assistance providers; and promote regional farmland access via Farmland for a New Generation New York in partnership with American Farmland Trust. Their Hudson Valley Hundred initiative is preparing 100 management-ready farmers by 2025, prioritizing individuals

that have been historically marginalized, to run viable farm businesses. Glynwood's Director of Agriculture, Laura Lengnick, is a nationally-recognized, award-winning soil scientist with more than a decade of leadership experience in climate risk management in U.S. agriculture. She contributed to the 3rd National Climate Assessment and served as an advisor to the North American Climate Smart Agriculture Alliance. Glynwood's Director of Regional Food Programs, June Russell, brings two decades of experience in the development of regional markets for new crops. She facilitated significant policy changes that have impacted agriculture in the New York City region including Greenmarket's 2009 Bakers' Rules which helped to launch the market for local grains, and the GrowNYC Grains collaborative that has resulted in dozens of new varieties of wheat, beans and other crops coming to the consumer market.

Nature for Justice – Nature for Justice is a nonprofit organization emboldened to help at-risk communities address the increasing challenges of climate change. They see a unique opportunity to promote social justice simultaneously. Nature for Justice is a nimble and fast-moving organization creating science-based action with these communities and connecting them with large companies or other organizations seeking climate or carbon-based solutions. Nature for Justice (N4J) was founded in 2020 with a diverse and experienced team with decades of experience working in over 70 countries. This experience encompasses economic development, social inclusion, environmental conservation, and the identification and use of both indigenous knowledge and current science to guide action. Technical program management and leadership will be provided by Clarenda Stanley, M.Ed, Managing Director – Farm Inclusion at N4J. Stanley is the CEO and Founder of Green Heffa Farms in North Carolina, the nation's first certified B Corp Black owned farm.

Jackson Family Wines - Jackson Family Wines (JFW) works with wine grape growers across California, Oregon, and Washington. Since 2015, they have paid a sustainability bonus per ton of fruit to growers using approved third party certifications. They have provided training, resources and support for JFW grower partners to ensure they are applying the best practices across operations. In 2017, in collaboration with state and local partners (CDFA & Sonoma RCD), they implemented a Carbon Farming pilot to explore the impacts of sequestering carbon in the soil and plants via photosynthesis and biological activity. In 2020, JFW sponsored research on Regenerative Farming & Carbon Sequestration in collaboration with International Wineries for Climate Action (IWCA) and published the results publicly. JFW utilizes sustainability logos in the marketplace to communicate climate smart messaging and claims to customers. These logos include Certified Sustainable, LIVE, SIP and IWCA which will specifically include climate smart claims about JFW's reduction in GHG emissions. JFW will lead nine other member-wine companies in the IWCA in the execution of this partnership.

Deelo Consulting Services, LLC – Principal Jessie Deelo will serve as the project's technical assistance lead, coordinating with local program managers to implement training and advisory services for climate-smart farming practice adoption. Miss Deelo will build a broader strategy that is implemented and tested at local scales. Additionally, she will use on-farm data to build impact marketing reports for farmers to use at market. Miss Deelo has several years of experience designing strategies for agricultural systems change. Building off her career as a farmer, extension specialist, and industry consultant, Miss Deelo integrates expertise in regenerative agriculture, corporate impact programs, food systems and strategy. Through

analysis of landscape, markets, cultures and stakeholders, Deelo develops markets for place-based regenerative agriculture. In commodity markets, she executes strategic solutions for climate-smart sourcing and low-carbon ingredient supply chains. She was previously Chief Hub Officer at Vayda.

Deelo Consulting Services will coordinate with local program managers at Glynwood, Nature for Justice and in part Jackson Family Wines on farm planning and to develop tools and programs, execute climate-smart practices, and evaluate on-farm impact. They will design the Impact Marketing platform and Ag Consulting tools and training that will be deployed in collaboration with local program managers, partners and technical service providers. Deelo Consulting will work with program managers to conduct peer-to-peer educational events (i.e., field days, planning sessions) for farmers and service providers as well as host buyers on-farm interested in sourcing climate-smart products. Deelo Consulting will develop Ag Consulting training modules and equip local technical service providers with climate-smart crop advisory services. Whereas Deelo brings the overarching framework, guidance documents, and program administration, the program managers will leverage local networks and knowledge to engage stakeholders and identify opportunities for increasing scale and impact. This approach allows for a standardized and scalable climate-smart market program that meets the unique needs of diverse, small- and medium-sized farmers.

II. PLAN TO PILOT CLIMATE-SMART AGRICULTURE ON A LARGE SCALE

Summary

This partnership will implement cover cropping (CPS 340), Residue and Tillage Management, no-till (CPS 329), Residue and Tillage Management, reduced till (CPS 345), nutrient management (CPS 590), prescribed grazing (CPS 528), silvopasture (CPS 381), pasture and hay planting (CPS 512), riparian forest buffer (CPS 391), mulching (CPS 484), tree/shrub establishment (CPS 612), and windbreak/shelterbelt establishment and renovation (CPS 380) and other practices over approximately 20,000 acres in New York, North Carolina, California, Oregon, and Washington. Major partner Bayer Crop Sciences will identify an additional 100,000 acres of US Midwest row crop farms who independently implement cover cropping, no-till, reduced till and mulching, to test TSIP's MMRV and contribute data to the project.

New York small- and mid-scale diversified farms

A. Description of CSAF practices to be deployed

Small- and mid-scale diversified farms in New York state will implement CSAF practices across approximately 5,500 acres to achieve an approximate regional carbon sequestration of 30,155 MT CO^2e over five years. CSAFs applied in New York will optimize for total carbon sequestration and lowest cost per carbon sequestered. Tree/shrub planting ($53/MT$CO^2e$), forage/biomass planting ($86/MT CO^2e), and prescribed grazing ($89/MT CO^2e) sequester the most carbon per implementation cost on 45 acres over five years.[2] The planting of hedgerows and windbreaks and silvopasture are also likely highly cost effective.[3] As a one-time practice adoption, planting perennial trees and shrubs eliminates transaction cost over the life of the

[2] Based on data from COMET-Planner and NRCS-NY and MD 2022 EQIP Fee Schedules. Analysis by Dr. Laura Lengnick.

[3] These costs already include conservation planning and technical assistance.

CSAF implementation. It also increases CSAF permanence. While initially costly, planted perennials increase farm resilience and have been shown to pay for themselves regionally over time via avoided production losses. They support livestock and soil health and moderate microclimates. Perennial plantings support biodiversity and pollinators, which can increase farm product yields. They lead to more soil carbon storage directly underneath. These practices should increase both metrics of GHG benefit and farm resilience. Glynwood would embrace a flexible, farmer-specific, and peer-informed approach to CSAF implementation.

B. Plan to recruit producers and land owners, including estimated scale of the project (e.g., number of land owners, acres targeted, head of livestock, etc.)

Glynwood will organize CSAF implementation. They will work through the Glynwood CSA Coalition, which includes 120 farms, the Glynwood Farmer Training Network, which includes 155 farms, and the nonprofit Scenic Hudson' farm easement network, which includes 135 farms. They may include lands currently enrolled in the New Entry Sustainable Farming network and the New York Watershed. There is a large and unserved demand for conservation technical and financial assistance for small and mid-scale diversified farms in the Hudson Valley region (Lengnick, 2019). Glynwood estimates that 35 to 50% of the farmers in their network will submit applications for technical assistance through a funded CSAF implementation program. This partnership anticipates working with approximately 122 producers over approximately 5,500 acres.

C. Plan to provide technical assistance, outreach, and training, including who will be conducting these activities, qualifications, and projected timeline

Glynwood, in partnership with Deelo Consulting Services, will provide outreach to help enroll farmers and organize producers for local technical assistance. Glynwood's organization will build community capacity and reduce transaction costs. Key organization will be provided by Dr. Laura Lengnick, Director of Agriculture at Glynwood who has decades of soil health research, management, and farmer training. Glynwood will organize and implement whole farm carbon planning days in the first six months of grant receipt.

Regenerative farming advisory Deelo Consulting Services LLC will develop ag consulting and technical assistance training modules and equip local support with climate-smart crop advisory information. Key organization will be provided by Jessie Deelo, a former farmer and current farm consultant with decades of experience in sustainable farm management. Deelo develops customized, metrics-based impact programs to baseline and advance sustainability outcomes for farmers, suppliers, and food companies. Miss Deelo will begin working with local program managers and major partners to build whole farm carbon plans and implement CSAF in year 1 where possible.

<u>North Carolina small, diversified, BIPOC+-owned farms</u>

A. Description of CSAF practices to be deployed

Small-scale diversified Black-owned farms in North Carolina will implement cover cropping, no-tillage and reduced tillage, nutrient management, prescribed grazing, forage/biomass planting, tree/shrub planting, silvopasture, and hedgerow planting across approximately 3,200 acres to sequester an estimated 38,495 MT CO^2e over five years. This is a small but significant investment in providing technical assistance and climate-smart marketing support to farmers who operate with little financial or programmatic assistance. These farmers will be organized through Nature for Justice (N4J), who will connect and support existing local networks. There is potential

for a particularly powerful brand claim and demonstration of the collective market potential of these farms, including via data visualization.

B. Plan to recruit producers and land owners, including estimated scale of the project (e.g., number of land owners, acres targeted, head of livestock, etc.)

Nature for Justice (N4J) will coordinate community networks in Northern North Carolina to connect Black-owned farmers to resources for CSAF implementation. N4J's Inclusive Climate Resilience Network (ICRNet) focuses on providing small-scale, Black farmers access to climate services, including favorable finance, climate information and training, technical assistance, market aggregation, and political influence to empower proactive climate action for climate resilience. A number of farmers in the scope of N4J's network do not have access to internet. While traditional means of marketing such as newspapers and print ads may be used, N4J will rely on culturally appropriate networks such as word of mouth, Houses of Faith and local partners such as North Carolina A&T State University and the Small and Heritage Black Farmers & Southeastern African American Farmers' Organic Network (SAAFON). They will collaborate with existing climate-smart and sustainable farming initiatives (e.g., conferences, gatherings, public supporting agencies) The program will seek to identify non-traditional means of acquiring project partners, relying on churches and other social organization.

C. Plan to provide technical assistance, outreach, and training, including who will be conducting these activities, qualifications and projected timeline,

N4J will identify a Program Director and Program Coordinator to coordinate efforts with Deelo Consulting Services. This person will conduct outreach and training in each regional hub beginning year 1. Deelo Consulting Services will build training and teaching resources in CSAF implementation for community leaders and technical advisors. Miss Deelo's efforts to train existing advisors and peer advisors will reduce implementation risk and costs. Working with peer advisors and leaders is an appropriate approach given significant historical inequities.

Vineyards

A. Description of CSAF practices to be deployed

Jackson Family Wines (JFW), in collaboration with nine other members of the International Wineries for Climate Action (IWCA) network, will work with wine grape growers in California, Oregon, Washington, and New York to implement cover cropping, no-till and reduced till, nutrient management, mulching, and prescribed grazing across 10,000 acres to sequester an estimated 82,850 MT CO^2e over five years.

B. Plan to recruit producers and land owners, including estimated scale of the project (e.g., number of land owners, acres targeted, head of livestock, etc.)

Jackson Family Wines and members of the International Wineries for Climate Action (IWCA) network will identify up to 100 farmers and 10,000 acres from California, Washington, and Oregon to reimburse for adoption and enhancement of CSAFs.

C. Plan to provide technical assistance, outreach, and training, including who will be conducting these activities, qualifications and projected timeline,

Jackson Family Wines (JFW) agricultural and sustainability teams will provide outreach and initial coordination. They will provide technical assistance to JFW growers. They will rely on the Resource Conservation District (RCD) for additional technical assistance support and training. JFW's agricultural team are experts in climate-smart vineyard management. Jackson Family Wines is currently scaling regenerative wine-production with the goal of transitioning 100% of its vineyards to regenerative farming.

Below are details of the practices and breakout of costs with the number of farmers, unit costs, and the year of expected implementation.

Practice Unit Cost, Number of Farmers, and Number of New Farmers Implementing by Year

	N4J	Calculated for Warren County, NC							
NRCS	Practice	Cost/Practice ($)	Times implemented	Total Acres	Total Farmers	Year 1 Farmers	Year 2 Farmers	GHG MT C02 5	GHG MT C02 by Year
CPS 345	Reduced Till	39	5	1120	30	15	15	292	1314
CPS 340	Cover Crop	92	5	672	30	15	15	741	3334.5
CPS 550	Forage/Biom	301	1	1088	30	15	15	754	3393
CPS 612	Tree/shrub P	3422	1	128	30	15	15	4478	13434
CPS 381	Silvopasture	705	1	96	20	10	10	2315	6945
CPS 380	Hedgerow Pl	5820	1	96	10	5	5	3358	10074
Total					**150**	**75**	**75**	**11938**	**38494.5**
	Glynwood Practices	**Calculated for Putnam County, NY**							
CPS 345	Reduced Till	37	5	549	9	5	4	78	351
CPS 340	Cover Crop	88	5	878.4	18	9	9	103	463.5
CPS 329	Notill	24	5	878.4	18	9	9	207	931.5
CPS 590	Nutrient Mgt	21	5	1098	20	10	10	60	270
CPS 528	Prescribed G	31	5	768.6	19	9	10	48	216
CPS 550	Forage/Biom	287	1	340.38	8	4	4	171	769.5
CPS 612	Tree/shrub P	3259	1	329.4	10	5	5	5172	15516
CPS 381	Silvopasture	671	1	329.4	10	5	5	1293	3879
CPS 380	Hedgerow Pl	5543	1	329.4	10	5	5	2586	7758
Total					**122**	**61**	**61**	**9718**	**30154.5**
	JFW Practices	**Calculated for Sonoma County, CA**							
CPS 329	No-Till	$ 25	5	1000	3	2	1	196	980
CPS 345	Reduced Till	$ 15	5	1000	3	2	1	100	500
CPS 340	Cover Croppi	$ 10	5	2000	7	4	3	1820	9100
CPS 484	Compost Am	$ 10	5	2000	7	4	3	646	3230
CPS 528	Prescribed G	$ 10	5	2000	7	4	3	101	505
CPS 590	Nutrient Mar	$ 2	5	2000	7	4	3	451	2255
CPS 329	No-Till	$ 10	5	4000	7	3	4	784	3920
CPS 345	Reduced Till	$ 9	5	4000	7	3	4	400	2000
CPS 340	Cover Croppi	$ 10	5	8000	13	6	7	7280	36400
CPS 484	Compost Am	$ 10	5	8000	13	6	7	2584	12920
CPS 528	Prescribed G	$ 5	5	8000	13	6	7	404	2020
CPS 590	Nutrient Mar	$ 2	5	8000	13	6	7	1804	9020
Total					**100**	**50**	**50**	**16570**	**82850**
	Bayer Practices	**Calculated for Story County, IA**							
								GHG MT C02	
CPS 329	No-Till		5	33,333				16,492	82460
CPS 345	Reduced Tillage		5	33,333				7,818	39090
CPS 340	Cover Cropping		5	33,333				7,122	35610
Total				**100,000**				**31432**	**157160**
									308659

New York small- and mid-scale diversified farms
The Glynwood Center for Regional Food and Agriculture

Partnership with The Glynwood Center for Regional Food and Agriculture will comprise working with 122 farmers. We anticipate the practices being implemented by the end of Year 1 for the initial cohort of participating producers.. Specifically, we anticipate 61 producers implementing climate-smart practices for the first time in year one (73 enrolling or agreeing to participate in the partnership) and 61 in year two. This estimate is based on demand estimated by project partners, and budget.

We anticipate practice costs on estimates provided by the Glynwood Center for Regional Food and Agriculture. To that end, we estimate the cost of reduced tillage at $37 an acre, cover cropping at $88 an acre, no tillage at $24 an acre, nutrient management at $21 an acre, prescribed grazing at $31 an acre, forage/biomass planting at $287 an acre, tree/shrub planting at $3,259 an acre, silvopasture at $671 per acre, and hedgerow planting at $5,543 an acre.

Year 1
We anticipate approximately 50% of all practices being implemented with 50% of participating farmers by the end of year 1. This comprises five farmers implementing reduced tillage, nine farmers implementing cover cropping, nine farmers implementing no tillage, ten farmers implementing nutrient management, nine farmers implementing prescribed grazing, four farmers implementing forage/biomass planting, five farmers implementing tree/shrub planting, five implementing silvopasture, and five implementing hedgerow planting.

Year 2
We anticipate the remaining 50% of participating farmers will implement the remaining 50% of planned practices by the end of year 2. The first cohort of farmers from year 1 will continue to implement practices. Perennials planted in year 1 will not require additional implementation cost. Practices being newly implemented in year 2 comprise four farmers implementing reduced tillage, nine farmers implementing cover cropping, nine farmers implementing no tillage, ten farmers implementing nutrient management, ten farmers implementing prescribed grazing, four farmers implementing forage/biomass planting, five farmers implementing tree/shrub planting, five implementing silvopasture, and five implementing hedgerow planting.

The forty-two farmers who began reduced tillage, cover cropping, no tillage, nutrient management, and prescribed grazing in year 1 will continue to do so.

Years 3-5
The eighty-four farmers implementing reduced tillage, cover cropping, no tillage, nutrient management, and prescribed grazing in years 1 and 2 will continue to do so in years 3-5. This comprises nine farmers implementing reduced tillage, eighteen farmers implementing cover cropping, eighteen farmers implementing no tillage, twenty farmers implementing nutrient management, and nineteen farmers implementing prescribed grazing, each year.

We anticipate that this sequesters 30,154.5 MT CO_2 e over five years. This estimate is less than estimated in the original proposal. We calculated initial greenhouse gas mitigation from COMET Planner estimates for Putnam County, NY. We then independently estimated that woody perennial plantings increase in ghg mitigation at about half that rate on average over each following year. COMET estimates were not available for silvopasture and hedgerow planting and

so we applied the estimates for grassland converted to farm woodlot at ¼ and ½ acreage, respectively, to compensate for comparatively decreased planting densities.

North Carolina small, diversified, BIPOC+-owned farms
Nature for Justice

Partnership with Nature for Justice will comprise working with 150 up to 175 farmers across 3,200 acres and up to 4,000 acres. All practices are planned to be implemented by the end of year 1 for the initial cohort of participating farmers.. Specifically, we anticipate 50 producers implementing climate-smart practices for the first time in year one (60 enrolling or agreeing to participate in the partnership) and 100 in year two.

We anticipate implementing reduced tillage over 1120 acres, cover cropping over 672 acres, forage/biomass planting over 1088 acres, tree/shrub planting over 128 acres, silvopasture over 96 acres and hedgerow plantings over 96.

We anticipate practice costs as provided by Glynwood and slightly adjusted. To that end, we estimate the cost of reduced tillage at $39 an acre, cover cropping at $92 an acre, forage/biomass planting at $301 an acre, tree/shrub planting at $3,422 an acre, silvopasture at $705 per acre, and hedgerow planting at $5,820 an acre. Rates are subject to change upon on farm consultations.

Year 1
We anticipate 50% of all practices being implemented with 50% of participating farmers by the end of year 1. This comprises 15 farmers implementing reduced tillage, 15 farmers implementing cover cropping, 15 farmers implementing forage/biomass planting, 15 farmers implementing tree/shrub planting, 10 implementing silvopasture, and 5 implementing hedgerow planting.

Year 2
We anticipate the remaining 50% of participating farmers will implemented the remaining 50% of planned practices by the end of year 2. The first cohort of farmers from year 1 will continue to implement practices. Perennials planted in year 1 will not require additional implementation cost. Practices being newly implemented in year 2 comprises 15 farmers implementing reduced tillage, 15 farmers implementing cover cropping, 15 farmers implementing forage/biomass planting, 15 farmers implementing tree/shrub planting, 10 farmer implementing silvopasture, and 5 farmers implementing hedgerow planting. The 120 farmers who began reduced tillage, cover cropping, and forage/biomass planting in year 1 will continue to do so.

Years 3-5
The 90 farmers implementing reduced tillage, cover cropping, and forage/biomass planting will continue to do so in years 3-5. This comprises 30 farmers implementing reduced tillage, 30 implementing cover cropping, and 30 farmers implementing forage/biomass planting, each year.

We anticipate that this sequesters 38,494.5 MT CO_2 e over five years. We note that this is less than estimated in the original proposal. We calculated initial greenhouse gas mitigation from COMET Planner estimates for Warren County, NC. We then independently estimated that woody

perennial plantings increase in ghg mitigation at about half that rate on average over each following year.

Importantly, we note that, in implementation, cover cropping and reduced / no tillage may and should be implemented on the same land. We will work with project partners on final acreage.

Vineyards

Jackson Family Wines

Partnership with Jackson Family Wines will comprise working with 100 wine grape growers. We anticipate the practices being implemented by the beginning of year 3. Specifically, we anticipate 50 growers implementing climate-smart practices for the first time in year one (60 enrolling or agreeing to participate in the partnership) and 50 in year two. This estimate is based on demand anticipated by JFW. We separate these growers into two practice implementation costs estimates by early climate-smart practice adopter and new climate-smart practice adopter. No-tillage, reduced tillage, and prescribed grazing cost less for early adopters to continue to implement than for new adopters to newly implement.

To that end, we budget the cost of practice implementation based on estimates provided by JFW. For new adopters, we estimate the cost of reduced tillage in vineyards at $15 an acre, cover cropping at $10 an acre, no tillage at $25 an acre, nutrient management at $2 an acre, compost amendment at $10 an acre, and prescribed grazing at $10 an acre. For early or existing adopters, we estimate the cost of reduced tillage in vineyards at $9 an acre, no tillage at $10 an acre, and prescribed grazing at $5 an acre.

Year 1

We anticipate approximately 50% of practices being implemented with 50% of participating growers by the end of year 1. This comprises two new adopter growers implementing reduced tillage, two new adopter growers implementing no tillage, four new adopter growers implementing cover cropping, four new adopter growers implementing compost amendments, four new adopter growers implementing prescribed grazing, and four new adopter growers implementing nutrient management. Additionally, three early adopter growers will implement no tillage, three early adopter growers will implement reduced tillage, six early adopter growers will implement cover cropping, six early adopter growers will implement compost amendments, six early adopter growers will implement prescribed grazing, and six early adopter growers will implement nutrient management.

Year 2

We anticipate the remaining 50% of participating growers will implemented the remaining 50% of planned practices by the end of year 2. The first cohort of growers from year 1 will continue to implement practices. New practice implementation in year 2 comprises one new adopter grower implementing no tillage, one new adopter grower implementing reduced tillage, three new adopter growers implementing cover cropping, three new adopter growers implementing compost amendments, three new adopter growers implementing prescribed grazing, and three new adopter growers implementing nutrient management. Additionally, four early adopter growers will implement no tillage, four early adopter growers will implement reduced tillage, seven early adopter growers will implement cover cropping, seven early adopter growers will

implement compost amendments, seven early adopter growers will implement prescribed grazing, and seven early adopter growers will implement nutrient management.

Years 3-5
The eighty-four growers implementing reduced tillage, cover cropping, no tillage, nutrient management, and prescribed grazing in years 1 and 2 will continue to do so in years 3-5.

This comprises three new adopter growers implementing reduced tillage, seven new adopter growers implementing cover cropping, three new adopter growers implementing no tillage, seven new adopter growers implementing nutrient management, and seven new adopter growers implementing prescribed grazing, each year. Additionally, seven early adopter growers will implement no tillage, seven early adopter growers will implement reduced tillage, thirteen early adopter growers will implement cover cropping, thirteen early adopter growers will implement compost amendments, thirteen early adopter growers will implement prescribed grazing, and thirteen early adopter growers will implement nutrient management, each year.

This comprises ten growers implementing no tillage, ten growers implementing reduced tillage, twenty growers implementing cover cropping, twenty growers implementing compost amendment, twenty growers implementing prescribed grazing, and twenty growers implementing nutrient management, each year.

We anticipate that this sequesters 82,850 MT CO_2 e over five years. We calculated greenhouse gas mitigation from COMET Planner estimates for Sonoma County, CA.

Midwest Row Crops
Bayer Crop Science

Partnership with Bayer Crop Science comprises no USDA payment for the cost of practice implementation because Bayer will be providing these services and funds as match to the program. Instead, funds through the TSIP Partnership comprise payments for measurement of practice impact on lands transitioning to climate-smart management via various Bayer incentives programs. Specifically, this partnership will work with 100 row crop farmers transitioning to no tillage, reduced tillage, and cover cropping. These do not incur practice payment costs to the partnership. We plan that they will comprise working with 50 transitioning to no tillage, reduced tillage, and cover cropping in year one, and that the number of farmers will increase to one hundred by year two.

These farmers will continue to implement these climate smart practices for the duration of the project. They will also use TSIP's soil sampling system to measure % soil carbon change between year 1 and year 5 of the project.

We anticipate that this sequesters 157,160 MT CO_2 e over five years. This is more than our initial proposed estimate for Midwest practice ghg mitigation. We estimated greenhouse gas mitigation from COMET Planner estimates for Story County, IA.

D. Plan to provide financial assistance for producers/landowners to implement CSAF practices

Producers will receive payments for practice adoption and enhancement. Reimbursement will match region and practice. Cost estimates from project partners based on reliable regional estimates.

Partner	Participating Producers	Participating Acres	Practice Adoption
Glynwood	122	5,500	$4,045,987
Nature For Justice	150	3,200	$1,909,757
Jackson Family Wines	100	10,000	$1,975,000
Total	**372**	**18,700**	**$7,930,744**

Separately, we note that it may be worth considering if GHG benefits can provide an additional, separate revenue stream for CSAF farmers in the form of carbon offsets, if commodity sales are for brand claims and not to meet Scope 3 offset needs. Carbon credit companies Nori and Indigo have expressed interest in evaluating this MMRV methodology, particularly if it may increase future program participation and calibrate models.

E. Plan to enroll underserved and small producers, including estimated number of underserved and small producers participating and associated dollar amounts anticipated to go directly to producers, in the form of technical and financial assistance.

<u>New York small and mid-scale diversified farms</u>

All participating New York farms are small producers and some qualify as underserved. These are varied, often diversified farms averaging 45 acres, many of whom do not have access to risk management tools like crop insurance (Lengnick, 2019). Participating farms include farms newly founded by first-generation or immigrant Americans. We estimate that 120-130 producers will participate. Approximately $4,100,000 will go directly to producers as technical and financial assistance. This comprises $54,000 as program support as compensation for soil sampling and $4,050,000 for practice implementation.

<u>North Carolina small-scale, diversified, and BIPOC+ owned farms</u>

All participating North Carolina farms are small-scale, diversified, Black-owned operations that have been historically excluded from technical and financial support systems. Operations average 5-50 acres in size. We estimate that 150 producers will participate. We estimate that $2,516,753 will go directly to producers in the form of technical and financial assistance. $1,909,757 will go directly to producers for practice implementation. An additional $32,000 will be distributed to producers ($5/acre across 3,200 acres) as compensation for soil sampling program support. This covers all program support and practice implementation.

III. MEASUREMENT/QUANTIFICATION, MONITORING, REPORTING, AND VERIFICATION PLAN

Summary
There is a national need to further measure soil carbon at multiple scales and combine results with process-based models for scale (Bradford et al., 2021). The Soil Inventory Project (TSIP) will measure, monitor, report, and verify soil carbon sequestration.

A. Approach to greenhouse gas benefit quantification, including methodology approach

TSIP will quantify GHG benefit by biogeochemically modeling distributively-collected field data. The project will reimburse producers to sample CSAF-implementing land. TSIP will make soil sampling available to participants at no cost while strengthening regional model projections and impact quantifications. Field data and model outputs quantify soil carbon impacts of climate smart practices.

Strategic, low-cost, distributed soil sampling combined with biogeochemical modeling produces accurate impact quantification. As soil samples initiate and inform models, model products become stronger and fewer samples are needed. This methodology reduces cost and time to predicting practice impacts and regional change over time.

Working with underserved and BIPOC+ farmers in scaling this MMRV enables its utility to diverse landownership in the US. Inclusion ensures that a later, scaled application is accessible to all users. At the same time, it can provide a lightweight and powerful pathway to management practice validation. This MMRV will show the impacts of specific land stewardship practice with lab results and powerful biogeochemical modeling. A low-cost and distributed system prioritizes inclusivity.

TSIP will manage distributed field sampling in partnership with the Skidmore College (under the direction of Dr. Covey) and analysis and modeling with the Michigan State University (under the direction of Dr. Basso). TSIP will:

1. Create location- and management-specific sample design for participating farms
2. Remotely assist field sampling through mobile application, personnel, and resources.

The project will reimburse producers $5 per acre for area sampled, each time they sample. The TSIP Partnership for Impact and Demand asks producers to sample in the beginning of the project and near the close, in years 1 or 2 and 4 or 5.

Operations
Distributed sampling: TSIP will mail field kits to producers. Producers outline their areas for sampling on a mobile application. Producers use the field kit to take soil samples, following the sampling design on the app to navigate to and sample points. Producers pour soil into a QR-coded bag and scan the code into the TSIP app. They enter management and land use history information. They use a prepaid shipping label to send samples to Ward Laboratory in Kearney,

Nebraska, for conventional soil carbon analysis by dry combustion. Sample QR codes merge lab results with geolocations and management information.

Left: TSIP mobile application with sampling design on map. Right: field tool in use.

Remote sensing- and process-based modeling: With subaward Michigan State University, Dr. Bruno Basso and the Basso Lab will model field data with geospatial covariates.

This approach, combining field data with models, will advance understanding of the relationship between measured soil carbon and management practices. Basso Lab will apply a process-based modeling approach in connection with remote sensing data and artificial intelligence/machine learning (AI/ML) analytics. This approach allows us to account for interactions between soil, climate, genetics and management practices across the US Midwest cropping systems.

The project's ultimate goal is to identify practices that show enhanced resilience to climate variability and change to achieve stable productivity and climate benefits, while maintaining farm profitability.

Field-data collected through The TSIP Partnership for Impact & Demand will be used to:

1. Initialize and calibrate a multi-model ensemble of five process-based crop models.
2. Validate the multi-model ensemble and a machine-learning-based multi-model ensemble emulator.
3. Validate SSURGO and RACA soil attributes (organic matter, carbon, bulk density, and texture).
4. Combine additional data collected and managed by TSIP from prior soil sampling campaigns with The Partnership's field-data. This aggregated data set will allow for the attribution of soil carbon accumulation to management. Combining sampling campaigns and datasets makes it possible to run analyses that overcome site, geographic, sample size, and management-type limitations of isolated sampling campaigns.

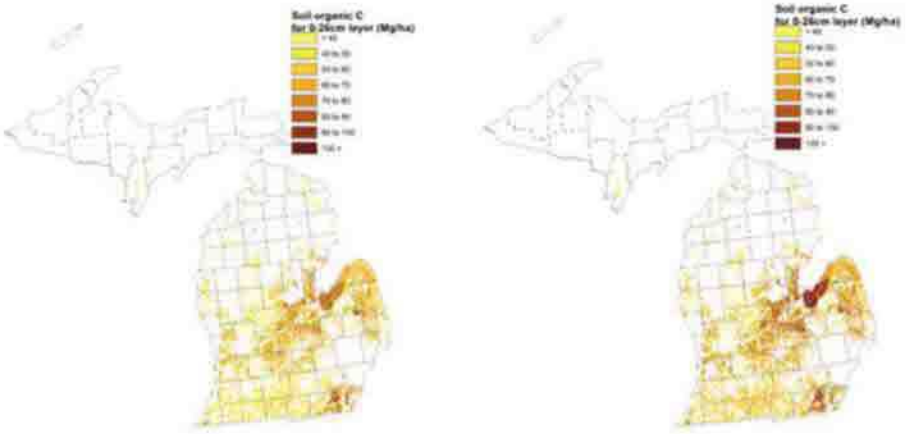
Project deliverables comprise:

1. Simulated spatial maps of soil organic stocks from the multi-model ensemble outputs. SOC stocks are obtained from soil organic carbon concentration and bulk density at different depth increments (0-40 cm and 40-100 cm where possible).

2. Model ensemble-produced outputs on crop yield and yield stability.
3. Multi-model ensemble outputs will also provide results on future climate scenarios and alternative agronomic practices.
4. Machine learning-based multi-model ensemble emulator outputs. This AI emulator, with calibration, will produce comparable results to the multi-model ensemble with computational efficiency, reducing the time required for analysis and prediction.
5. Contributing to dataset that produces the regional practice baselines relevant to The Partnership's geographic focus.
    a. This baseline will encompass multiple managements and will enable farm managers to calculate the difference between their land's carbon stock and the average amount expected per region and management.

This research agenda will produce several research articles for peer-review. TSIP aims to share the data publicly while maintaining site anonymity.

The application of process-based modeling to predict soil carbon sequestration is currently limited by accurate data on initial carbon pools (Chenu et al., 2019; Ewert et al., 2015). Linking field data to modeling produces accurate predictions of agro-ecological outcomes, allowing scientists to predict change in GHG and yields with climate and management practices (Liu and Basso, 2020; Basso et al., 2011). By accounting for soil type, management, and land use history in analysis and modeling, TSIP will attribute accurate, farm-specific impact to practice via field data.



Modeled GHG benefits of CSAF practices in Michigan state. Left: Simulated SOC in Mg ha^{-1} for 0-26 cm in 2020 with conventional tillage. Right: Simulated SOC in Mg ha^{-1} for 0-26 cm in 2020 with minimum tillage. From Bruno Basso.

<u>Analysis outputs</u>

1. **Current regional average soil carbon values and baselines. This will provide benchmarks for future measurements.**
2. **Attribution of impact to management by region. This will be produced by the combination of change with time and model results.**
3. **Forecasting of soil carbon change by management over time in region.**

B. Approach to monitoring of practice implementation, including the anticipated number of farms and acres reached through project activities

TSIP and fiscal sponsor The Meridian Institute will issue contracts to each participating farmer, laying out their obligations to the project. This contract will also include a detailed farm and crop plan outlining practices to be implemented in accordance with NRCS standards and the costs associated with the practices on an annual basis. This contract, once signed, becomes an obligation for TSIP to pay. It will be used as a formal legal document and provided to USDA to receive proceeds required to fund practice adoptions. We will also use receipts collected after implementation to verify and monitor practice implementation.

All climate smart practices implemented through the project will meet NRCS practice standards. The ag consulting framework TSIP and its partners will develop is based on state-based EQIP practice schedules. Local technical service providers will support farmers in selecting from NRCS practice standards. Deelo Consulting, with local partners at Nature for Justice and Glynwood, will develop training modules and materials to equip technical service providers with guidance on implementation standards, supporting tools and technologies, and evaluation of success and areas for improvement. Deelo Consulting will also provide initial farm planning and practice selection for Jackson Family Wines and IWCA members, though their on-farm teams will be coordinating implementation with local Resource Conservation District (RCD) offices.

Guidance documents will be provided to farms on implementation requirements. Ag consultants will conduct in-season support to confirm correct implementation as well as end of season verification. Where non-compliance is observed, Deelo Consulting with local partners and ag consultants will work case-by-case to resolve and improve for the subsequent cropping season.

TSIP will use Bayer Crop Science's established monitoring tools, farmer-reported management information and personnel to monitor practice implementation on Midwest US row crops. Producers using TSIP's distributed MMRV self-report their management practices when submitting field samples as an additional check and balance. As a reminder, this partnership award does not reimburse producers from Bayer's network for management, only for soil sampling program support.

C. Approach to reporting and tracking of greenhouse gas benefits including the anticipated GHG benefits per farm, per project, per commodity produced, per dollar expended, and the anticipated longevity of GHG benefits

TSIP will summarize MMRV work on a yearly basis and share with project partners and the USDA. TSIP will report GHG benefits per farm, per project, per commodity, and per dollar expended bases. When permitted, TSIP will make data publicly available.

Anticipated GHG benefits per project						
Partner	**State**	**Acres**	**Number of Producers**	**Commodities**	**CSAF Practices**	**MT CO^2e sequestered**

The Glynwood Center for Regional Food and Farming	NY	5,490	122	Fruits, vegetables, specialty crops, livestock	CPS 345, 340, 329, 590, 528, 550, 612, 381, 380	38,495
Nature For Justice	NC	3,200	150	Tobacco, soybeans, sweet potatoes, and other vegetables	CPS 345, 340, 550, 612, 381, 380	32,155
Jackson Family Wines and The International Wineries for Climate Action	CA, OR, WA, NY	10,000	100	Wine grapes	CPS 329, 345, 340, 484, 528, 590	82,850
Bayer Crop Sciences, Midwest grower network		100,000	100	Includes corn, wheat, soy, and barley	CPS 329, 345, 340	157,160
Totals		**118,690**	**472**			**308,659**

D. Approach to verification of greenhouse gas benefits

Field sampling in year five will verify greenhouse gas benefits. The combination of change in field data with time and modeled analysis will verify carbon sequestration.

E. Agreement to participate in the Partnerships Network (see entry below in "Considerations for Successful Projects").

We agree to participate in the Partnerships Network. This project's low-cost, scalable impact monitoring and quantification has the potential to support other CSC supply chains and markets. TSIP prioritizes user experience and interoperability with other programs.

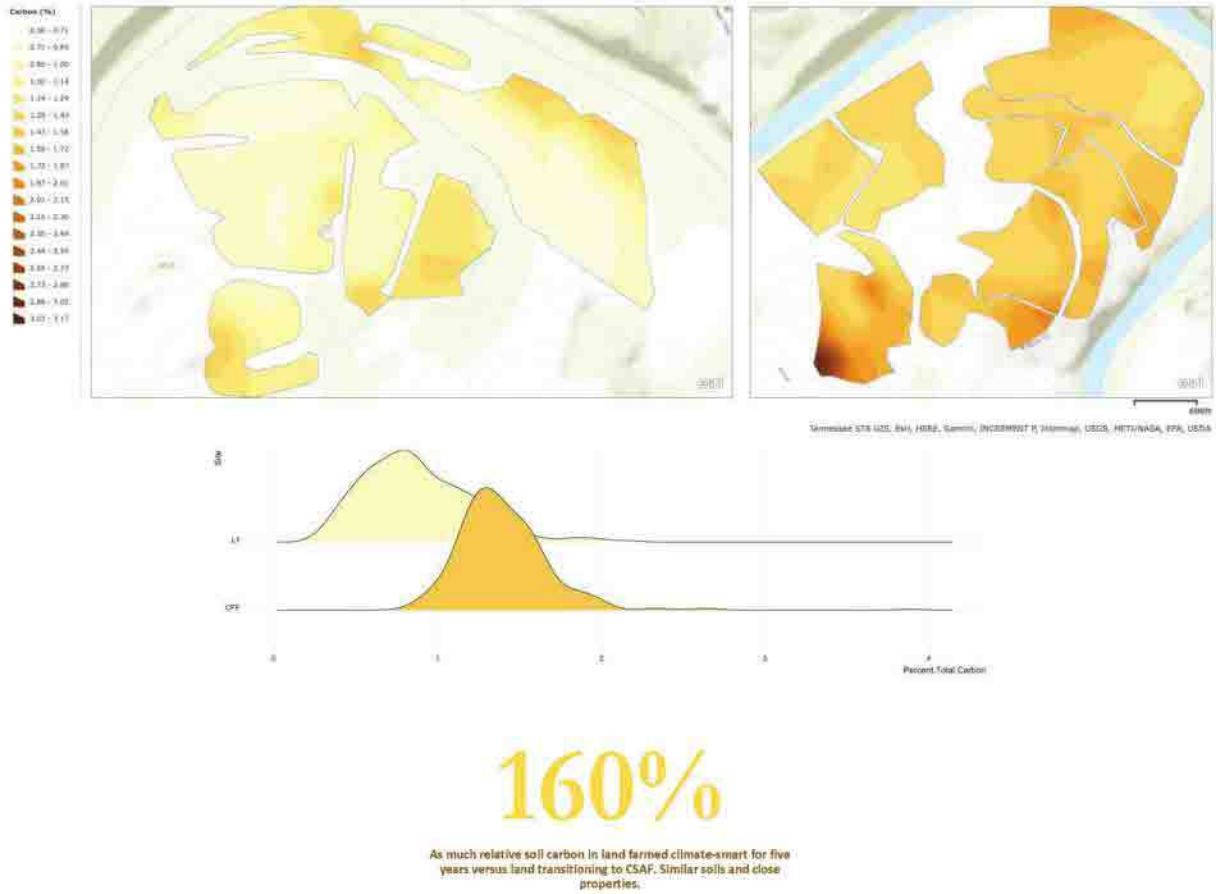
IV. PLAN TO DEVELOP AND EXPAND MARKETS FOR CLIMATE-SMART COMMODITIES GENERATED AS A RESULT OF PROJECT ACTIVITIES

Numerical cues such as traction and KPIs catalyze consumer acquisition, investor action, and producer adoption, creating demand. Specifically, numerical cues increase consumer acquisition and purchases (Li et al., 2022). Quantified goal progress "induces purchase acceleration" and builds trust (Kivetz et al., 2006; Heath and Starr, 2022).[4] TSIP's quantified impact marketing will increase consumer, investor, and producer acquisition and purchasing/action, developing and expanding markets for climate-smart commodities generated as a result of project activities.

The market mechanism to catalyze CSAF adoption is increased farm resilience. The market mechanism to catalyze CSC purchase is GHG benefit. We anticipate that quantifying these two metrics will catalyze participant acquisition on both the demand and supply side of CSCs. This project will provide both metrics to producers and partners, with permission.

[4] We include farmers and supply chain actors as consumers in this framework of participant acquisition and growth.

Specifically, these impact quantifications and visualizations will expand markets through 1. commodity marketing and 2. key performance indicators (KPIs). **Quantifications will address specific partner and end users needs.**



CSAF impact visualization between two US farms on similar soils not far from each other. One was managed climate-smart for five years and the other was transitioning. This data visualization can help stimulate market demand for climate-smart commodities.

Quantification of impact will reduce risk in launching new CSC products by increasing confidence outcomes for the farmer/producer, investor and/or commodity processor, and consumer (Ries, 2011). Market-ready impact quantification creates the confidence and curiosity needed for product-market fit (Webster, 2021; Dubey et Griffiths, 2017).

	Impact quantification use case - GHG benefit
New York small- and mid-scale diversified farms	-Direct-to-consumer sales, sales to processors -Potentially, regional stakeholders' collective marketing

North Carolina small-scale, diversified, BIPOC+ owned farms	-Direct-to-consumer sales, sales to processors -Regional stakeholders' collective marketing
Vineyards	-Brand claim definition

A. Any partnerships designed to market resulting climate-smart commodities

Deelo will partner with TSIP to quantify farm resilience and produce KPIs. In addition to carbon/climate, the impact marketing reports generated may include: soils (health and quality), water (quality and scarcity), biodiversity and economic resiliency (farms expanding acres, offtake average price per acre, commodity sold at premium).

B. Plan to track climate-smart commodities through the supply chain, if appropriate

While Jackson Family Wines and some members of the IWCA see significant distribution of their product through national and international supply chains, other members of the IWCA sell direct-to-consumer where tracking is much simpler. However, given wine is a site-specific, terroir-driven product, the industry has robust tracking mechanisms from soil to bottle that will also enable JFW and IWCA wineries and growers to see the impact of climate-smart practice adoption on product quality, pricing elasticity and sell-through.

Research reported by NapaGreen suggests that 50%-70% of consumers are willing to pay more for a socially and environmentally responsible wine product, indicating a $1-$3 increase for organic and biodynamically produced wines.[5] Further, these same consumers expressed the need to be educated and provided clearer badges/certifications on labels to help delineate. This research suggests that The TSIP Partnership's emphasis on quantifying climate impact is critical for creating and sustaining consumer demand. Further, these metrics can help JFW and other participating wineries in developing future brand claims around climate-smart wines. IWCA predicts up to a 5% premium payment to participating growers and producers and will monitor this premium as an output of this project.

C. Estimated economic benefits for participating producers including market returns

Economic benefits for participating producers include increased yield stability via loss avoidance, reduced costs, expanded consumer bases via multi-channel sales, and potentially price premiums and access to insurance or capital.

	Economic benefits of practice implementation	**Economic benefits of impact quantification**
New York small- and mid-scale diversified farms	-Increased yield stability via climate loss avoidance -Practice-dependent, diversified income	-Expand consumer base via diversified marketing, opening multi-channel sales

[5] https://napagreen.org/wp-content/uploads/2021/05/Communications-Kit.pdf

North Carolina small-scale, diversified, BIPOC+ owned farms	-Increased yield stability via loss avoidance, reduced operating costs	-Multi-channel approach to marketing
Vineyards	-Increased yield stability via loss avoidance	-Expanded consumer base and/or price premium via eventual brand claim

As many specific economic benefits of CSAF are yet unquantified, and will respond to climate volatility, partners will track economics through the timeline of this project. This will enable the quantification of farm returns on practice implementation. Deelo will quantify CSAF economic impact for producers. OpenTEAM's ambitious, open, and consolidated farm data management system could be a key resource to further track and quantify resilience.

D. Post-project potential, including anticipated ability to scale project activities, likelihood of long-term viability beyond project period, and ability to inform future USDA actions to encourage climate-smart commodities.

The market mechanisms for continuing CSAF implementation are increased farm resilience to climate change via avoided production losses and increased consumer demand and demand stability due to impact quantification/marketing. KPIs and impact marketing provide the evidence for these market mechanisms to drive expanded adoption of these practices beyond this pilot.

	Potential to scale and long-term viability beyond project activities
New York small- and mid-scale diversified farms	Farmers in the Hudson Valley often work collaboratively and in close networks. If successful, this piloting of climate-smart commodities would scale via additional farmers adopting practices. Adoption of CSAF could also scale to other farms in shared networks, including via Glynwood partner The New Entry Farmers Network.
North Carolina small-scale, diversified, BIPOC+ owned farms	Nature For Justice will expand this program into other counties and states.
Vineyards	Jackson Family Wines owns or purchases from approximately 10,000 additional acres to which CSAF can scale. CSAF could also scale to include additional IWCA network members/vineyards.

This project will support future USDA decision-making on actions to induce both GHG benefit and farm resilience. It will quantify GHG and farm resilience return on USDA investment, informing future decisions. It will provide the information to analyze practice implementation expansion and longevity against GHG benefit. It will show where impact and market

mechanisms most effectively align to drive large-scale CSAF and CSC demand. Project results will help identify levers for scaling CSAF quickly via market mechanisms.

All field data and analysis outputs permitted will be shared publicly. The geospatial data layers generated under this proposal will be available for integration into further scalable modeling tools like the COMET planner as a resource for producers interested in implementing CSAF. By defining and delivering specific and market-ready CSC impact quantifications, this partnership will catalyze consumer demand for climate-smart row crop commodities, fruits, vegetables, specialty crops, and wine, empowering producers.

PROPOSAL ADDENDUM

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V. APPROACH TO CREATING MARKETS FOR CLIMATE-SMART COMMODITIES

Introduction

Creating markets for climate smart commodities requires supply, distribution, and demand.

Supply has been addressed by section II, the plan to pilot climate smart agriculture on a large scale. Technical assistance and the elimination of barriers to implementation makes supply possible.

Distribution must be provided by project partners (direct-to-consumer models) or external collaborators (wholesaling). Aligning distribution with demand creates efficient markets.

Demand comprises consumer need and marketing. Partners must identify, educate, and market to potential consumers. There is extant and unsaturated consumer demand for social, environmental, and governance goods. The climate smart commodities collaboration will channel a general demand for ESG products into new and specific ones for climate smart agricultural products. The imperative of the Partnerships for Climate Smart Commodities is to catalyze and focus existing market interest into selling climate smart commodities. We propose linked distribution and marketing approaches that can effectively bring climate smart products to the right-sized market. We emphasize that producers and retailers are the primary actors in market creation.

To maximize efficiency, synergy and reduce competition, expanding pre-existing distribution networks and methods are, where applicable and just, preferable to creating new ones. **Where USDA project partners have pre-existing brands and distribution pathways, climate smart commodities will be sold through these routes.**

Marketing strategies will be driven by regional and crop foci. Therefore, we outline separate distribution and marketing plans for each focus region. For each region, we outline the approach for determining or executing the goals, consumer identification, and marketing.

In two of the partnership regions, New York and West Coast vineyards, there are extant sales pathways. Producers will develop marketing using story narratives and data. In one partnership region, North Carolina, distribution will have to be built in partnership with outside teams and, ideally, other participants in CSC partnerships.

The value proposition of climate smart products may vary by market. There are at least four versions that are available to be deployed, depending on consumer and market character.
1. Climate impact, comprising drawdown and avoided emissions
2. Consumer impact, comprising the equation of healthy soils with healthy foods
3. Community impact – supporting farmers taking on climate, and
4. The integrity of the products impact. In addition to powerful, personal storytelling, these can be communicated via maps, impact visualization, and data.

Identify which value proposition resonates with each region, and understanding the consumer willingness to pay will lead to strong and sustaining market creation.

Market plans by region

New York small- and mid-scale diversified farms
Glynwood Center for Regional Food and Farming – Diversified vegetables, livestock, and grains

Summary: Expand consumer base via diversified marketing, opening multi-channel sales, and organize marketing opportunities. Market creation informed by GrowNYC's development of the small grains market, with partners who executed that market creation.

Experience and approach: Key Glynwood personnel created a small grains market in New York via GrowNYC. Glynwood's award-winning Director of Regional Food Programs, June Russell, substantially contributed to creating the GrowNYC small grains market. She led complex stakeholder collaboration (Baker and Russell, 2017). Under June's leadership, Glynwood is developing new grains and staples markets in the Northeast. Miss Russell will likely participate in Glynwood's development of a CSC market.

Sales goals: Individual sales goals will be determined by individual producers. Generally, this partnership aims to sell climate smart agricultural products as climate smart.

Consumer: There is an extant and significant consumer base for agricultural products in the New York City metropolitan and Hudson River Valley regions.

Marketing goals: Individual marketing goals will be determined by individual producers. More broadly, marketing must define climate smart agricultural products. A key and achievable marketing goal comprises gaining regional, national, and international attention via stories across media.

Preliminary conversations with partners in this region have raised a question central to selling climate smart crops. What is the market interaction between different product standards such as organic, local, and climate smart? A partner at Glynwood raised this question and postulated that diversified marketing can increase overall consumer appetite. We postulate that New York agriculture, which prides itself on innovation and prioritizes resilience, comprising farmers who may operate without crop insurance, which has previously stood as a proving ground for the creation and success of new supply chains, and possesses international prominence, will be an excellent location to test the market interaction of food production standards. We do not postulate

that all foodsheds are like New York, but something that works in New York has the potential to work in other metropolitan-proximate regions. This psychographic nuance is something that The Partnership will study in Years 1-3.

Marketing strategies and tactics: Marketing in New York comprises at least three strategies: 1. In person at farmers' markets, 2. Storytelling through high impact platforms – traditional media, and 3. Social media storytelling by individual farmers, prominent locals, or retailers/chefs/restaurants. Substantial marketing in this region and pre-existing market space occurs in person, at farmers' markets. Additional direct-to-consumer marketing in the Hudson Valley is accomplished effectively by articles in prominent magazines and newspapers, including The New York Times, Edible Hudson Valley, The New Yorker, Bon Appetit, and The Hudson Valley Table. Glynwood Center, and individual farms in the region, have histories of contributing to and featuring in prominent press stories. There are prominent supporters of sustainable agriculture in New York State, including popular farms, public figures, and prominent food industry leaders. Impact quantification from MMRV (Section II) shows results of New York's climate smart management and can be used for marketing and storytelling. Storytelling with visualized, concise data may provide a novel, effective angle. This would complement human stories.

Distribution: Glynwood will support the distribution and sales of climate-smart farm products through pre-existing farm product markets. These farmer networks primarily sell through direct markets. These comprise direct to consumer sales but also sales to businesses. Wholesalers may identify products they would like to use at a greenmarket, then regularly purchase from a producer.

Metrics of Success: Success in this region would comprise a defined brand, sales that support current production, demand that would support increased production, economic health of participating farmers, and at least one prominent national or regional story spotlighting the pilot.

North Carolina small-scale, diversified, BIPOC+ owned farms
Nature For Justice - Diversified fruit and vegetables, commodity crops

Approach: Nature for Justice will create an aggregated marketing pool with climate smart agricultural products.

Sales goals: Immediate sales goals comprise identifying a distributor or sales path for aggregated climate smart agricultural products. Two options exist, below.

Consumer: The partnering distributor will conduct consumer identification and market research.

Marketing goals: Marketing goals of aggregated products will be determined by the distributing partner. Where sales are direct-to-consumer, individual marketing goals will be determined by individual farmers.

Marketing strategies and tactics:

1. Nature For Justice will create a market pool. The distribution pathway and retailer will determine specific marketing strategy, including consumer-facing communications.

2. Deelo Consulting Services will provide farmers with a dashboard of farm climate impact indicators and risk factors. Miss Deelo will aggregate impact by region and market. They will provide aggregated metrics to buyers in their extensive consumer package good (CPG) and food supply networks. They will provide these metrics to and work with regional ag consultants. This will comprise marketing material for farmers to supply to wholesalers or the eventual retailer. Retailers can apply TSIP's impact quantification to communicate the climate impact of the crops sold.

Storytelling should be a critical piece of this partner's marketing strategy. Placing stories in high impact traditional and social media platforms should be prioritized.

Distribution: There are at least two potential distribution pathways.

1. Agricultural products from this focus region can potentially be sold in partnership with Walmart Inc. Through programmatic support from The Walton Family Foundation, Nature for Justice has begun communicating with Walmart Inc. Walmart comprises a potential buyer of climate smart agricultural products, which they could potentially brand and sell.

2. Aggregated with the products of partnership-external, climate-smart producers. Nature for Justice states that one assurance would be to strengthen a new market by aggregating products and working with additional Partnerships for CSCs collaborators. They are interested in building a market across grants and thereby strengthen the position of the farmers with whom they work.

3. Direct-to-Consumer sales. However, this may comprise a pathway in which participating farmers, as individuals, have less market power than they would as part of an aggregate.

Vineyards

Jackson Family Wines and the International Wineries for Climate Action - Climate-Smart Wine Grapes

Summary: Jackson Family Wines, the International Wineries for Climate Action, and, we anticipate, other participating wineries, will manage sales goals, distribution pathways, consumer identification, and marketing, including research and campaigns.

Sales goals: Jackson Family Wines will determine climate-smart sales goals. Jackson Family Wines intends to cut emissions in half by 2030.

Consumer identification: Jackson Family Wines will manage market research and consumer identification. Business analytics enable Jackson Family Wines to identify customer bases and ad campaign impact. Jackson Family Wines and other winery partners will decide how and when to sell and market wine as climate smart.

Marketing goals: Jackson Family Wines will determine climate-smart marketing goals.

Marketing strategies and tactics: Jackson Family Wine and the International Wineries for Climate Action will manage marketing strategies and tactics. Jackson Family Wines has a track record of substantial success in marketing and national and global brand definition. Applied marketing methods have included immersive and digital storytelling, cross-channel launch strategies, press articles across media, and social media.

Impact quantification from MMRV (Section II) shows results of JFW's climate smart management and can be used for marketing. There is a proliferation of green marketing. MMRV provides content for marketing that instills product confidence. Data is an effective tool for concise product storytelling.

Distribution: We anticipate that Jackson Family Wines and the International Wineries for Climate Action will manage distribution of climate-smart grape-produced wine through pre-existing distribution methods. These include direct-to-consumer and wholesale sales.

US Midwest row crops

Bayer Crop Sciences - diversified commodity crops

Distribution: Farmers will sell their climate-smart commodities to the buyer they choose. This means that these goods will likely not immediately reach consumers as labeled climate smart products. However, the eventual market for these row-crop producers has the potential to comprise a significant portion of agricultural products in the US. The Partnership is also eager to partner with other USDA CSC award recipients to create pools of commodities to build a climate smart supply.

Sales goals: Immediate sales goals comprise identifying a distributor or sales path for specifically climate-smart agricultural products.

Consumer: Distributor will conduct consumer identification and market research, or apply pre-existing market research.

Marketing goals: Marketing goals will be determined by distributor.

Marketing strategies and tactics: Marketing and media strategies will be determined by distributor. However, this partnership has the potential to produce farmer-specific compelling multimedia and data storytelling prior to securing a vendor or processing and distributing pathway. Deelo Consulting Services LLC will provide farmers with a dashboard of farm climate impact indicators and risk factors. Field-scale analytics will visualize and communicate this impact.

Conclusion

Distribution is determined by farmers. Distribution determines sales goals and marketing. We have confidence in existing demand that must be tapped into and directed by effective marketing via location and storytelling, including by compelling data. Storytelling should occur in person, via traditional media, and via social media. Deelo Consulting Services and ad consultants will contribute to marketing, and have access to the results of TSIP's MMRV impact quantification. These regional collaborations have separate and substantial market influence and reach.

Reference

Baker, B.P. and Russell, J.A., 2017. Capturing a Value Added Niche Market: Articulation of Local Organic Grain. *American Journal of Agricultural Economics*, *99*(2), pp.532-545.

VI. ADDITIONAL RESPONSES REQUESTED FROM USDA

1. All land is currently used for agriculture production.
2. No practices will involve ground disturbances below the plow zone, such as fencing.
3. No project activities may involve concentrated animal feeding operations (CAFOs)

VII. QUARTERLY MILESTONES

Please reference the supplemental document entitled TSIP_USDA_Milestones.

VIII. PROJECT PARTNER UPDATES

Below are two significant amendments to the original proposal.

PROJECT PARTNER UPDATES -

1. (Update as of February 14, 2023). On November 29, 2023, Corteva Agricsciences informed TSIP and provided a letter to USDA Agency Staff, regretfully withdrawing as a partner from The TSIP Partnership for Impact & Demand, citing organizational adjustments and difficulty staffing the appropriate support for this project. The date on the updated letter read April 28, 2022, because it was a holdover from the initial Letter of Support Corteva provided when TSIP submitted the initial proposal. We apologize for the clerical error and any confusion it caused.

   Since November 29, 2023, TSIP has been in conversations with possible replacement partners, and has built a pipeline of corporate partners who could provide the 100,000 acres of Midwest row crop farmland to replace Corteva's grower network. We are pleased that Bayer Crop Sciences has agreed to source 100,000 acres of farmland from 100 farmers through their Midwest row-crop grower network and participate as a major partner in this project. TSIP continues to earmark $1 million in its budget as farmer

incentive payments for participating in soil sampling. This is a $5 per acre payment for each sampling campaign, likely two times over the course of the project. These payments are equivalent to what all participating farmers will receive. Because these farmers are already transitioning, and receiving technical assistance from Bayer, TSIP and its partners do not need to provide this service. The week of February 28, 2023, TSIP and Bayer's leadership teams will be meeting in person in St. Louis, MO to develop a detailed executive plan. At this time, Bayer will be able to firm up its commitment to the project, including details around its in-kin/match contribution to the project. TSIP will provide an updated letter of support from Bayer at that time.

2. (As of December 1, 2022 Revisions - No Updates) Deelo Consulting Services LLC will replace Vayda as technical assistance partner, performing the same services as originally proposed with the same staff leader. Vayda was selected as The Partnership's partner because of the expertise of its Chief Hub Officer, Jessie Deelo. Deelo has several years of experience designing strategies for agricultural systems change. Building off her career as a farmer, extension specialist, and industry consultant, she integrates expertise in regenerative agriculture, corporate impact programs, food systems and strategy. Through analysis of landscape, markets, cultures and stakeholders, Deelo develops markets for place-based regenerative agriculture. In commodity markets, she executes strategic solutions for climate-smart sourcing and low-carbon ingredient supply chains.

   As of November 2022, Deelo is no longer at Vayda but will still participate as the technical assistance provider for The Partnership as a subawardee and under her services firm, Deelo Consulting Services, LLC. Deelo was the key personnel required for the successful execution of this project. And though it won't be under the umbrella of Vayda, we are thrilled that we will be able to continue leveraging Jessie's expertise for The Partnership.

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The Soil Inventory Project
USDA Partnerships for Climate-Smart Commodities
Project Milestones

Partnership to Define Climate-Smart Commodities Impact and Unlock Consumer Demand (The TSIP Partnership for Impact & Demand)

Required Quantitative Targets by Quarter (Cumulative) –

1. **Number of producers involved**

Q1	0
Q2	57
Q3	162
Q4	253
Year 1	253
Q1	359
Q2	422
Q3	422
Q4	422
Year 2	422
Q1	422
Q2	422
Q3	422
Q4	422
Year 3	422
Q1	422
Q2	422
Q3	422
Q4	422
Year 4	422
Q1	422
Q2	422
Q3	422
Q4	422
Year 5	422

2. **Number of underserved producers involved**

Q1	
Q2	25
Q3	50
Q4	60
Year 1	60
Q1	85
Q2	100
Q3	100
Q4	100
Year 2	100

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Q1 100
Q2 100
Q3 100
Q4 100
Year 3 100
Q1 100
Q2 100
Q3 100
Q4 100
Year 4 100
Q1 100
Q2 100
Q3 100
Q4 100
Year 5 100

3. Number of acres involved

Q1 0
Q2 12,799
Q3 42,921
Q4 72,294
Year 1 72,294
Q1 102,416
Q2 120,490
Q3 120,490
Q4 120,490
Year 2 120,490
Q1 120,490
Q2 120,490
Q3 120,490
Q4 120,490
Year 3 120,490
Q1 120,490
Q2 120,490
Q3 120,490
Q4 120,490
Year 4 120,490
Q1 120,490
Q2 120,490
Q3 120,490
Q4 120,490
Year 5 120,490

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4. **Number of head involved (if applicable) - N/A**
5. **Dollars provided to producers - incentive payments**

Q1 $0
Q2 $0
Q3 $0
Q4 $2,784,956
Year 1 $2,784,956
Q1 $267,000.00
Q2 $425,000.00
Q3 $6,790,122
Q4 $7,331,102
Year 2 $7,331,102
Q1 $7,331,102
Q2 $7,331,102
Q3 $7,579,180
Q4 $7,579,180
Year 3 $8,079,180
Q1 $8,079,180
Q2 $8,079,180
Q3 $8,327,259
Q4 $8,327,259
Year 4 $8,827,259
Q1 $8,827,259
Q2 $9,429,709
Q3 $9,177,787
Q4 10,177,787
Year 5 $10,177,787

6. **GHG Benefits (Metric Tons of CO2e Reduced or Sequestered)**

Q1 0
Q2 0
Q3 17,415
Q4 34,829
Year1 34,829
Q1 34,829
Q2 44,782
Q3 54,737
Q4 64,691
Year 2 64,691
Q1 64,691
Q2 91,798
Q3 118,906
Q4 146,014
Year 3 146,014

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Q1 146,014
Q2 173,121
Q3 200,229
Q4 227,336
Year 4 227,336
Q1 227,336
Q2 254,444
Q3 281,551
Q4 308,659
Year 5 308,659

7. Number of new marketing channels* established -

Q1 0
Q2 0
Q3 0
Q4 0
Year 1 0
Q1 0
Q2 0
Q3 0
Q4 0
Year 2 0
Q1 0
Q2 0
Q3 0
Q4 0
Year 3 0
Q1 0
Q2 0
Q3 0
Q4 0
Year 4 0
Q1 0
Q2 2
Q3 4
Q4 5
Year 5 5

8. Number of marketing channels* expanded -

Q1 0
Q2 0
Q3 0
Q4 0
Year 1 0

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Project Milestones

Q1 0
Q2 0
Q3 0
Q4 0
Year 2 0
Q1 0
Q2 0
Q3 0
Q4 0
Year 3 0
Q1 2
Q2 4
Q3 6
Q4 8
Year 4 8
Q1 0
Q2 0
Q3 0
Q4 0
Year 5 0

9. Number of measurement tools utilized -

Q1 0
Q2 0
Q3 0
Q4 1
Year 1 1
Q1 2
Q2 0
Q3 0
Q4 0
Year 2 2
Q1 0
Q2 0
Q3 0
Q4 0
Year 3 0
Q1 0
Q2 0
Q3 0
Q4 0
Year 4 0
Q1 0
Q2 4

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Q3	5
Q4	0
Year 5	5

Other Required Benchmarks:

- **Outreach, training and other technical assistance -**

The Partnership for Impact & Demand will monitor:

- the speed of and time to onboard a participating producer following enrollment,
- outreach to local technical assistance (# of ag consultants contacted versus converted to work with us, # of consultants reached and trained, # of manuals published, review of manuals' usefulness, consumers reached through blogs, earned media, etc. as we publicize the work of The Partnership and our producers.)

- **Other MMRV and supply chain traceability attributes**

In addition to carbon, The Partnership, plans to collect data on:

- soils (health & quality
- water (quality and scarcity)
- biodiversity, and
- producer economic resiliency (# farms expanding acres, average offtake price per acre, commodities being sold at premiums);

- **Other measurements of work related to marketing of commodities**

The Partnership would like to measure the impact climate-smart commodity markets may have on:

- school programs and public health
- market channel outreach ease and engagement
- product samples evaluated, and
- contracts and sales pipeline process evolution

- **Demonstrated engagement of major partners**

The Partnership will be evaluating and engaging major partners through:

- Formal quarterly meetings, either in person or through zoom
- In-formal check-ins on progress to partner goals monthly or quarterly
- A project management dashboard monitoring progress

- **Climate smart technologies employed (if applicable) - N/A**

Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
345	Residue and Tillage Management, Reduced Till
340	Cover Crop
512	Pasture and Hay Planting
612	Tree/Shrub Establishment
381	Silvopasture
380	Windbreak/Shelterbelt Establishment and Renovation
329	Residue and Tillage Management, No-Till
590	Nutrient Management
528	Prescribed Grazing
484	Mulching
391	Riparian Forest Buffer

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

USDA 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."

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 (CO2e) emission reductions	Quarterly
Cumulative carbon stock	Whole project estimate of total carbon sequestration	Quarterly
Cumulative CO2 benefit	Whole project estimate of total CO2 emission reductions	Quarterly
Cumulative CH4 benefit	Whole project estimate of total CH4 emission reductions	Quarterly
Cumulative N2O benefit	Whole project estimate of total N2O 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

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

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

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

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)

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

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 CO2 ER	Official estimate of total CO2 emission reductions for field	Quarterly
Field official CH4 ER	Official estimate of total CH4 emission reductions for field	Quarterly
Field official N2O ER	Official estimate of total N2O 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

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

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

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

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.

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

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

GHG cumulative calculation

Data element name: GHG cumulative calculation

Reporting question: What method(s) was used to calculate the total cumulative GHG benefits reported here?

Description: List the method(s) that was used to calculate the total cumulative GHG benefits reported 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

Cumulative GHG benefits

Data element name: Cumulative GHG benefits

Reporting question: What are the project's estimated total GHG emission reductions (CO2eq) to date?

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

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative carbon stock

Data element name: Cumulative carbon stock

Reporting question: How much carbon has the project sequestered to date?

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 CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative CO2 benefit

Data element name: Cumulative CO2 benefit

Reporting question: What are the project's estimated total cumulative CO2 emission reductions to date?

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

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative CH4 benefit

Data element name: Cumulative CH4 benefit

Reporting question: What are the project's estimated total CH4 emission reductions to date?

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 CH_4 = 25 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative N20 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 N_2O = 298 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

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 CO_2eq

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 CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

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

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

Partner Activities

Unique IDs	
Partner ID	Unique Project ID for each partner

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Practice past extent - farm

Data element name: Practice past extent - farm

Reporting question: What percent of the farm has implemented this CSAF practice (combination) previously?

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

Select multiple values: No

Measurement unit: Category

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field any CSAF practice

Data element name: Field any CSAF practice

Reporting question: What is this field's prior experience with CSAF practices?

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

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: Initial enrollment

Practice past use - this field

Data element name: Practice past use - this field

Reporting question: Have this CSAF practice (combination) been implemented previously in 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

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

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

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 enrollment

CSAF 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.

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

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

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

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

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

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

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

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

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

Field GHG calculations

Data element name: Field GHG calculations	**Reporting question:** What methods are used to calculate GHG benefits in this field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Models • Direct field measurements • Both
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official GHG calculation

Data element name: Field official GHG calculation	**Reporting question:** What method was used to calculate the official GHG benefits in this field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Models • Direct field measurements
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official GHG ER

Data element name: Field official GHG emission reductions	**Reporting question:** What are the estimated total GHG emission reductions (CO2eq) in this field?
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	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official carbon stock

Data element name: Field official carbon stock	**Reporting question:** How much carbon has been sequestered in this field?
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 CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

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 CO_2	**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 CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Field official N20 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 N_2O = 298 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons N2O reduced in CO_2eq	**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 CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

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 CO_2eq	**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

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

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

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 CO_2eq	**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 CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**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 CO_2	**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 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 CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**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 N20 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 N_2O = 298 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons N2O reduced in CO_2eq	**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

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

Select multiple values: No

Measurement unit: Category

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)

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

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

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 CO_2

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 CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

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

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 CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**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 N20 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 N_2O = 298 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons N2O reduced in CO_2eq	**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

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

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

Reduction in nitrogen loss amount unit

Data element name: Reduction in nitrogen loss amount unit	**Reporting question:** What is the unit for how much reduction in nitrogen losses have been measured in the field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Kilograms • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Reduction in nitrogen loss'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in nitrogen loss purpose

Data element name: Reduction in nitrogen loss purpose	**Reporting question:** What is the purpose of tracking reduction in nitrogen losses?
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	**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 'Reduction in nitrogen loss'	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Annual

Reduction in phosphorus loss

Data element name: Reduction in phosphorus loss	**Reporting question:** Are reductions in phosphorus losses being tracked in the field?
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	**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 phosphorus loss amount

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

Reduction in phosphorus loss amount unit

Data element name: Reduction in phosphorus loss amount unit	**Reporting question:** What is the unit for the reduction in phosphorus losses measured in the field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Kilograms • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Reduction in phosphorus loss'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in phosphorus loss purpose

Data element name: Reduction in phosphorus loss purpose	**Reporting question:** What is the purpose of tracking reductions in phosphorus losses?
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	**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 'Reduction in phosphorus loss'	**Required:** Yes
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	**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

Other water quality type	
Data element name: Other water quality type	**Reporting question:** What type of other water quality metric have been measured in the field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Sediment load reduction • Temperature • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality amount	
Data element name: Other water quality amount	**Reporting question:** How much reduction in other water quality metrics have been measured in the field?
Description: Total amount of reduction in other water quality metrics 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 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality amount unit	
Data element name: Other water quality amount unit	**Reporting question:** What is the unit for the reduction in other water quality metrics measured in the field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Degrees F • Kilograms • Kilograms per liter • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality purpose

Data element name: Other water quality purpose

Reporting question: What is the purpose of tracking other water quality benefits?

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

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 'Other water quality'

Required: Yes

Data collection level: Field

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

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

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

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to 'Water quantity'

Required: Yes

Data collection level: Field

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

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: Respond if yes to 'Water quantity'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Water quantity purpose

Data element name: Water quantity purpose

Reporting question: What is the purpose of tracking water conservation?

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

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 '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

Reduced erosion purpose

Data element name: Reduced erosion purpose

Reporting question: What is the purpose of tracking reduced erosion in the field?

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

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 '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

Reduced energy use purpose

Data element name: Reduced energy use purpose

Reporting question: What is the purpose of tracking reduced energy use in the field?

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

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 'Reduced energy use'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion

Data element name: Avoided land conversion

Reporting question: Is avoided land conversion being tracked in the field?

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

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

Avoided land conversion amount

Data element name: Avoided land conversion amount

Reporting question: How much avoided land conversion has been measured in the field?

Description: Total amount of avoided land conversion 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 'Avoided land conversion'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion amount unit

Data element name: Avoided land conversion unit

Reporting question: What is the unit for the amount of avoided land conversion measured in the field?

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

Select multiple values: No

Measurement unit: Category

Allowed values:

- Acres
- Other (specify)

Logic: Respond if yes to 'Avoided land conversion'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Avoided land conversion purpose

Data element name: Avoided land conversion purpose	**Reporting question:** What is the purpose of tracking avoided land conversion in the field?
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	**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 'Avoided land conversion'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Improved wildlife habitat

Data element name: Improved wildlife habitat	**Reporting question:** Are improvements to wildlife habitat being tracked in the field?
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	**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

Improved wildlife habitat amount

Data element name: Improved wildlife habitat amount	**Reporting question:** How much improved wildlife habitat has been measured in the field?
Description: Total amount of improved wildlife habitat that is measured in and around the enrolled fields.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Amount	**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	**Reporting question:** What is the unit for the amount of improved wildlife habitat measured in the field?
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	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Acres • Linear feet • Other (specify)
Logic: Respond if yes to 'Improved wildlife habitat'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

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

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
	Digester type	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)
	Additional feedstock source (select most common if using more than one)	Food waste Straw or bedding Wastewater Other (specify)

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

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
Contour Buffer Strips (CPS 332)	Strip width (feet)	1-100
	Species category	Grasses Forbs Mix
Cover Crop (CPS 340)	Species category (select most common/extensive type if using more than one)	Brassicas Forbs Grasses Legume Non-legume broadleaves
	Cover crop planned management	Grazing Haying Termination
	Cover crop termination method	Burning Herbicide application Incorporation Mowing Rolling/crimping Winter kill/frost
Critical Area Planting (CPS 342)	Species category (select most common/extensive type if using more than one)	Grass Grass legume/forb mix Herbaceous woody mix Perennial or reseeding Shrubs Trees
Feed Management (CPS 592)	Crude protein (percent)	0-100
	Fat (percent)	0-100
	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
Field Border (CPS 386)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs

Filter Strip (CPS 393)	Strip width (feet)	20-1,000
	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

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
	Nutrient application rate change	Decrease compared to previous year Increase compared to previous year No change
Pasture and Hay Planting (CPS 512)	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

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

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

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

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

Other CSAF Practices

Traditional or cultural practices
Microbial products
Solar power generation
Grain bin construction
Pre-season drainage

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
CANEBERRIES
CANISTEL
CANOLA
CANTALOUPES
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
JUNEBERRIES
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

PARSNIP
PASSION FRUITS
PAWPAW
PEACHES
PEANUTS
PEARS
PEAS
PECANS
PENNYCRESS
PEPPERS
PERENNIAL PEANUTS
PERIQUE TOBACCO
PERSIMMONS
PINE NUTS
PINEAPPLE
PISTACHIOS
PITAYA/DRAGONFRUIT
PLANTAIN
PLUMCOTS
PLUMS
POMEGRANATES
POTATOES
POTATOES SWEET
PRUNES
PSYLLIUM
PUMMELO
PUMPKINS
QUINCES
QUINOA
RADISHES
RAISINS
RAMBUTAN
RAPESEED
RHUBARB
RICE
RICE SWEET
RICE WILD
RUTABAGA
RYE
SAFFLOWER
SAPODILLA
SAPOTE
SCALLIONS
SESAME
SHALLOTS
SORGHUM
SORGHUM DUAL PURPOSE
SORGHUM FORAGE
SOYBEANS
SPELT
SQUASH
STAR GOOSEBERRY
STRAWBERRIES
SUGAR BEETS
SUGARCANE
SUNFLOWERS
SUNN HEMP
TANGELOS
TANGERINES
TANGORS
TANGOS
TANNIER
TARO
TEA
TEFF
TI
TOBACCO CIGAR WRAPPER
TOBACCO BURLEY
TOBACCO BURLEY 31V
TOBACCO CIGAR BINDER
TOBACCO CIGAR FILLER
TOBACCO CIGAR FILLER BINDER
TOBACCO DARK AIR CURED
TOBACCO FIRE CURED
TOBACCO FLUE CURED
TOBACCO MARYLAND
TOBACCO VIRGINIA FIRE CURED
TOMATILLOS
TOMATOES
TREES TIMBER
TRITICALE
TRUFFLES
TURNIPS
VETCH
WALNUTS
WAMPEE
WASABI
WATERMELON
WAX JAMBOO FRUIT
WHEAT
WILLOW SHRUB
WINTER MELON
WOLFBERRY/GOJI
YAM

LIVESTOCK
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

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 (PSCS) 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 in 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.