



NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number NR233A750004G064	2. Amendment Number	3. Award /Project Period Date of final signature - 06/30/2028	4. Type of award instrument: Grant Agreement
5. Agency (Name and Address) USDA Partnerships for Climate-Smart Commodities c/o FPAC-BC Grants and Agreements Division 1400 Independence Ave SW, Room 3236 Washington, DC 20250 Direct all correspondence to FPAC.BC.GAD@usda.gov		6. Recipient Organization (Name and Address) Dairy Grazing Apprenticeship, Inc. 247606 Gad Road Medford WI 54451-5100 UEI # MLA5YSUM4FK3	
7. NRCS Program Contact James Denton	8. NRCS Administrative Contact Daniel Curtis	9. Recipient Program Contact Joseph Tomandl	10. Recipient Administrative Contact Bridget O'Meara
(b)(6)			
11. CFDA 10.937	12. Authority 15 USC 714 et seq	13. Type of Action New Agreement	14. Program Director Joseph Tomandl <div style="background-color: yellow; display: inline-block; padding: 2px;">(b)(6)</div>
15. Project Title/ Description: Expands markets for climate-smart dairy in CT, IL, IA, IN, MA, ME, MI, MN, NH, NJ, NY, OH, PA, RI, VT, WI and WV supporting farmers with implementation and monitoring of climate-smart practices.			
16. Entity Type: M = Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)			
17. Select Funding Type			
Select funding type:	<input checked="" type="checkbox"/> Federal	<input checked="" type="checkbox"/> Non-Federal	
Original funds total	\$4,770,271.00	\$187,263.00	
Additional funds total	\$0.00	\$0.00	
Grand total	\$4,770,271.00	\$187,263.00	

18. Approved Budget

Personnel	\$1,351,000.00	Fringe Benefits	\$175,500.00
Travel	\$118,720.00	Equipment	\$0.00
Supplies	\$34,010.00	Contractual	\$88,400.00
Construction	\$0.00	Other	\$3,002,641.00
Total Direct Cost	\$4,770,271.00	Total Indirect Cost	\$0.00
		Total Non-Federal Funds	\$187,263.00
		Total Federal Funds Awarded	\$4,770,271.00
		Total Approved Budget	\$4,957,534.00

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

<p>Name and Title of Authorized Government Representative</p> <p>Katina Hanson Acting Senior Advisor for Climate Smart Commodities</p>	<p>Signature</p> <p>KATINA HANSON</p>	<p>Date</p> <p>Digitally signed by KATINA HANSON Date: 2023.07.20 10:32:50 -05'00'</p>
<p>Name and Title of Authorized Recipient Representative</p> <p>Joseph Tomandl Project Director</p>	<p>Signature</p> <p>Joseph Tomandl</p>	<p>Date</p> <p>Digitally signed by Joseph Tomandl Date: 2023.07.18 11:52:33 -05'00'</p>

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 Dairy Grazing Apprenticeship 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 "A1 - 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 \$4,770,271.00

TOTAL FEDERAL FUNDS \$4,770,271.00

PERSONNEL \$1,351,000.00

FRINGE BENEFITS \$175,500.00

TRAVEL \$118,720.00

EQUIPMENT \$0.00

SUPPLIES \$34,010.00

CONTRACTUAL \$88,400.00

CONSTRUCTION (usually n/a) \$0.00

OTHER \$2,102,641.00

PRODUCER INCENTIVES \$900,000.00

TOTAL DIRECT COSTS \$4,770,271.00

INDIRECT COSTS \$0.00

TOTAL NON-FEDERAL FUNDS \$187,263.00

PERSONNEL \$0.00

FRINGE BENEFITS \$0.00

TRAVEL \$0.00

EQUIPMENT \$0.00

SUPPLIES \$0.00

CONTRACTUAL \$0.00

CONSTRUCTION (usually n/a) \$0.00

OTHER \$0.00

PRODUCER INCENTIVES \$0.00

TOTAL DIRECT COSTS \$0.00

INDIRECT COSTS \$187,263.00

Recipient has elected to voluntarily waive indirect costs. The waived costs are listed as non-federal (match) funds.

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

A1 - Budget Narrative

A2 - Project Narrative

A3 - Benchmarks Tables

A4 - Climate-Smart Practices List and Limitations

A5 - Data Dictionary

A6 - Climate-Smart Specific Terms and Conditions

ezFedGrants Budget Details

Item No	Payment Type	Expense Category	Description	Obligation Amount	Obligation Direct Cost	Obligation Indirect Cost	NICRA Rate
10	Payment	Personnel	DGA	\$1,351,000.00	\$1,351,000.00	\$-	0
20	Payment	Fringe Benefits	DGA	\$175,500.00	\$175,500.00	\$-	0
30	Payment	Travel	DGA	\$118,720.00	\$118,720.00	\$-	0
40	Payment	Supplies	DGA	\$34,010.00	\$34,010.00	\$-	0
50	Payment	Contractual	DGA	\$88,400.00	\$88,400.00	\$-	0
60	Payment	Other	Subaward - Unv. Of Missouri Extension	\$526,883.00	\$526,883.00	\$-	0
70	Payment	Other	Subaward - Dillon Analytics	\$246,400.00	\$246,400.00	\$-	0
80	Payment	Other	Subaward - Inst. of Food Technologists	\$760,078.00	\$760,078.00	\$-	0
90	Payment	Other	Subwarad - Stiel Ventures	\$564,280.00	\$564,280.00	\$-	0
100	Payment	Other	Producer Payments	\$900,000.00	\$900,000.00	\$-	0
110	Payment	Other	Advertising	\$5,000.00	\$5,000.00	\$-	0
Totals				\$4,770,271.00	\$4,770,271.00	\$-	

Withheld pursuant to exemption

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of the Freedom of Information and Privacy Act

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Implementing Precision Ag Tech to Expand the Participation of Small Grazing Dairy Farms in Climate-Smart Commodities

Executive Summary

A. Contact Information

Joe Tomandl III, Executive Director
Dairy Grazing Apprenticeship
247606 Gad Rd Medford, WI 54451

B. List of Project Partners

Dairy Grazing Apprenticeship - Project Lead - Joseph Tomandl, III, Principal Investigator

University of Missouri - Ryan Lock, PhD, Extension Specialist

Dillon Analytics, LLC - Jasmine Dillon, PhD, Assistant Professor

Institute of Food Technologists – Bryan Hitchcock, Executive Director

Stiel Ventures - Tera Johnson, Principal Consultant

C. List of underserved/minority-focused project partners

Dairy Grazing Apprenticeship

D. Compelling need for the project

Current systems of monetizing carbon and environmental outcomes from dairy farming practices have significant shortcomings. Conventional best management practices such as cover crops and no-till do not sequester sufficient carbon to meet urgent climate goals. Dairy production that is based on the NRCS conservation practice standard 528 of “prescribed grazing” of perennial living plant cover has far more potential to meet the climate benchmarks from working agricultural lands needed to mitigate global warming. Prescribed grazing dairy systems reduce fossil fuel use, sequester carbon in soil and decrease other GHG emissions, protect natural resources, and improve animal health. However, dairy graziers face significant barriers to monetizing their climate benefits and, as a result, this best management practice has no chance to scale or encourage additional adoption. These barriers include:

- Current baseline pasture measurement and field data collection methods are time consuming, subjective, and inherently prone to human error or manipulation.
- Current methods for monetization that are based solely on annual changes do not realize the long-term carbon storage benefits of perennial pastures.
- There is no consistent way to quantify and transmit the climate benefit of the milk they produce to downstream buyers. Brands, downstream buyers, and end consumers are not yet aware of the climate benefit of grazed milk and need a verification program to understand its value and trust its attributes.

This project deploys an existing ag tech monitoring system, modelling and evaluation tools, supply chain management technology, and digital marketing options in innovative new ways to empower dairy graziers to participate in climate-smart food production and commodity markets.

E. Approach to minimize transaction costs associated with project activities

In order to expand the participation of small dairy farmers in climate-smart commodity markets, this project leverages state of the art technologies and process improvements to streamline the process of measurement, verification, and market development for dairy grazed milk. The project uses PaddockTrac, a precision technology developed specifically for prescribed grazing systems as a platform for data collection that can occur simultaneously with production management practices. It seeks to implement a statistical correlation model that will allow above ground forage data to be predictive of below ground carbon sequestration and storage, which can reduce the amount of time consuming and expensive data collection that is typically required for measurement and verification. It will develop a standard for communicating verified data throughout the food supply chain that is built on EPCIS/GS1, which is already the industry standard for communicating data throughout the food industry. Finally, it leverages a shared digital marketing campaign and tactical marketing tools to accelerate consumer awareness and build trust and industry adoption.

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

This project benefits from broad network of small grazing dairy farms across the nation that have been assessed and approved as training sites by Dairy Grazing Apprenticeship (DGA). DGA is a nonprofit organization that administers a federally registered Apprenticeship in grazing dairy production. These farms have already adopted the CSAF NRCS (528) practice of “prescribed grazing” and are seeking to expand their climate impact, develop a workable system of monetizing the benefits through climate-smart commodities, and train the next generation of dairy graziers.

G. Geographic Focus

DGA is a national organization that currently delivers educational programming in 17 states. This project will focus on three of its regions, the Upper Midwest, the Great Lakes Region, and the Northeast, all of which have an existing concentration of small grazing dairy farms.

H. 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.

All of the partners in this project have significant experience managing projects and working with producers and promoting and marketing climate-smart commodities. As the lead on this project, DGA works with over 200 producers and has managed dozens of grants, including 10 federal grants, over the past 13 years. The University of Missouri (MU) is a Land Grant Institutions with many years of experience managing federal grants and working with producers.

The team at MU has been working with producers in Missouri and elsewhere to develop PaddockTrac since 2015. Dr. Jasmine Dillon, President and Owner of Dillon Analytics, LLC, is a systems analyst who uses life cycle assessment and system dynamics modeling tools to help organizations tackle complex problems. She will also bring her scientific background in food systems with a specialty in livestock production to bear in careful interpretation of the data. The Institute of Food Technologists (IFT) has already co-developed and implemented a standard for the seafood industry and will be replicating that work in this project for the dairy industry. Lastly, Tera Johnson, the President of Stiel Ventures and the lead consultant on the marketing project, successfully launched the first national brand of grazed whey protein, teraswhey (now Simply Tera's). Stiel Ventures is a business development consulting firm that specializes in working with innovative value-added farms and food brands. Stiel Ventures will contract with multiple marketing services providers that specialize in working with farms and food companies to complete this project.

Plan to Pilot Climate-Smart Agriculture on a Large Scale

The lead organization on this project, DGA, works with experienced prescribed grazing dairy producers, all of whom meet the USDA small farm standard, to train aspiring dairy graziers. Initiated as a state level Apprenticeship in 2010 to address the need for skilled people in Wisconsin, DGA registered its program with the U.S. Department of Labor in 2015 in order to expand its services as a National Apprenticeship in response to unsolicited producer interest. DGA now partners with eight organizations and universities to administer the Apprenticeship and provide educational support services in 17 states. Based on a proven system of work-based education, the DGA's curriculum combines 3700 hours of on-farm employment and training under an approved Mentor Dairy Grazier with custom classes through its online school, Managed Grazing Innovation Center (MGIC), and facilitated group education over two years. The Apprenticeship offers not only a guided structure for the transfer of knowledge, skills, and farms to the next generation but also on-the-ground support as well as networking opportunities with local product and service providers, educators, and agency staff members. Graduates become certified Journey Dairy Graziers and have opportunities to advance into management, milk-share partnerships, farm transition, and farm startup. Over the past decade, DGA delivered more than 600,000 hours of training and education to hundreds of aspiring dairy graziers. DGA is GI Bill® approved and is an approved vendor for Farm Service Agency's borrower training program required for FSA beginning farmer loan agreements. DGA is also developing Spanish language curriculum and training opportunities to broaden its reach to underserved beginning farmers and farm workers in the dairy industry.

In 2020, DGA began using grazing management software developed at the University of Missouri, PaddockTrac, to help Mentor Dairy Graziers optimize their forage utilization and shorten the learning curve for Apprentices, a first step in using precision ag technology to maximize efficiency on small grazing dairies.

By addressing the challenges that small producers face, this project will enable dairy graziers to participate in a high-integrity system that consistently captures and communicates the climate benefits of dairy products derived from prescribed grazing to buyers throughout the supply chain.

Further, it will allow farmers to financially benefit from demand for the climate services provided by their farming practices. Specifically, the proposed project will:

- develop an EPCIS-based, interoperable, publicly available dairy traceability standard through an inclusive consensus-building process to enable actors across the supply chain to sell and buy climate smart dairy products with integrity;
- deploy the precision PaddockTrac technology on 30 DGA-affiliated managed grazing dairy farms in three regions to measure productivity, improve grazing management, and verify continued practice and impact;
- monitor, report, and verify existing soil carbon stocks, additional soil carbon storage, and any additional greenhouse gas emissions reductions through PaddockTrac measurements, soil carbon fractionation (MOM and POM analyses), farm management data, COMET modeling and calibration, and the LUCAS database;
- implement the new traceability standard and supporting strict communication protocols in pilots with farmers and their downstream processors, manufacturers, distributors in 3 regions;
- develop a comprehensive and transparent outreach, education, and marketing campaign to build consumer awareness of the climate benefits of grazed milk as well as trust in the integrity of the verification program by stakeholders.

A. A description of CSAF practices to be deployed

Managed or prescribed grazing dairies typically follow a rotational system that offers fresh forages to dairy cows moving through small paddocks every 12 hours. These systems provide optimal forage utilization for both animal nutrition and on-going pasture health. Well managed perennial pastures that remain intact for many years steadily accumulate carbon, supporting long-term carbon storage. Recent research from the University of Wisconsin indicates that the carbon sequestered and stored by managed grazing is the highest of any farm production system (Figure 1). In addition, these systems offer a wide range of ancillary environmental benefits.

Ecosystem process (ecosystem service)	Units	Corn-Soy (tilled, no cover crop)	Corn-Soy (no-till & cover crop)	Pasture (managed grazing)
Soil carbon stored (climate stabilization)	tons CO _{2eq} /ac/yr	-1.03 ^a	.74 ^b + 0.25 ^c = 0.99	5.3 ^d
Soil erosion (water quality)	lb soil/ac/yr	4200	3000	0
Phosphorus runoff (water quality)	lb P/ac/yr	2.0	1.5	0.2
Nitrate loss (water quality)	lb N/ac/yr	28.6 ^a	18.0 ^b	8.9 ^c
Storm runoff (flood reduction)	in. H ₂ O from a 5-in rain in 24 h	3.3	2.8	2.1
Grassland bird habitat (biodiversity)	nesting pairs/ac	0.04 ^a	0.2 ^a	2.6 ^b
Pollinator habitat (biodiversity)	0 (poor) to 10 (best)	1.5	1.5 – 2.5	5.0 – 6.0

Figure 1. From UW-Madison/ Grassland 2.0 [Ecosystem Services Fact Sheet](#)

The producers who participate in this pilot will utilize PaddockTrac to optimize their CSAF practices. Developed

by University of Missouri (MU) with the support of a 2017 USDA-NRCS Conservation Innovation Grant, PaddockTrac helps producers graze well by providing access to accurate real-time data (Figure 2). The mobile application uses sonar to measure and store forage height 50 times per second along with GPS location on the user’s smartphone. The phone uploads data to a GIS-based website and then an online tool accurately assigns the data to an individual paddock. Once completed, a producer can login to see the GrazingWedge website showing forage yield in each paddock, sorted from high to low, which allows them to be proactive in decision-making.

Figure 2. Top left, a PaddockTrac sensor mounted to an ATV. Blue triangle simulates cone of influence for soundwaves sent to pasture canopy and recorded. Yellow sketching mimics data transmission by Bluetooth to phone mounted on handlebar. Top right is the user interface on the mobile phone app showing the stop button, GPS lat/long, and measurements that occur in real time. Bottom left is a validation map emailed by our server to producers after they upload data. It affirms that data was successfully uploaded and recorded. Bottom right is a grazing wedge output graph generated on our website after producers log in to their account and process the uploaded data from the phone. The grazing wedge figure ranks pastures from high to low forage yield availability. It directs producers to the proper grazing sequence



In addition, these small grazing dairies will benefit from work that DGA and MU are currently doing to help farmers use PaddockTrac data to better manage the business side of their farms. This includes work to develop a more direct correlation between the amount of forage produced and specific performance metrics, such as income over feed costs, body condition scores, milk-to-feed price ratio, and profit margins. This data is particularly valuable to beginning and limited resource producers because it accelerates business acumen needed to succeed in the dairy industry. To increase accessibility to this tool for historically underserved producers, DGA is in the process of translating PaddockTrac and GrazingWedge into Spanish.

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

DGA will leverage its network of approved Mentor farms to serve as test sites for this project. These farms represent a range of dairy business models and currently sell product through different markets, including direct to consumer, regional processing, value-added organic/ grass-based, and conventional. They all implement precision grazing of perennial groundcover and have a strong interest in hiring/ retaining an Apprentice or Journey Dairy Grazier or were started by graduate of the Apprenticeship. DGA retains strong relationships with participant farmers, who are all committed to the long term viability and growth of the managed grazing dairy industry and interested in new ecosystem services revenue opportunities.

In Year 1 of this project, DGA and project partners will conduct outreach, education, and consensus-building meeting across commodity stakeholders and will then invite 30 of its most innovative farms to participate, 10 in the Upper Midwest, 10 in the Great Lakes Region, and 10 in the Northeast. Participating producers will commit to hiring/ retaining an Apprentice or Journey Dairy Grazier, implementing PaddockTrac technology in their CSAF management systems for three consecutive years (Years 2 through 4), and collaborating with DGA staff and other partners to advance project goals. DGA anticipates reaching 6,000 acres and 4,000 cows during this pilot phase—and has the potential to reach more than 40,000 acres and 20,000 cows across its expanding network once the project is extended beyond the grant.

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

As a national nonprofit organization with experienced program staff, an extensive network, and a robust website/ database developed to administer its federally registered Apprenticeship, DGA is well positioned to conduct farmer outreach and communications. For this project, DGA will also bring on two new staff members to provide technical assistance, climate education, and resources to assist participants as they interface the development of new markets for climate-smart commodities. Year 1 will be focused on farmer recruitment, education, and training, Years 2 - 4 on technical assistance in support of data collection, and Year 4 - 5 on providing support during implementation of the new standard, verification, and market development. The table below summarizes the components of and timeline for the technical assistance, farmer outreach, and training needed for this program.

	Year 1	Year 2	Year 3	Year 4	Year 5
Farmer Outreach, Consensus Building, and Selection					
PaddockTrac Training by MU					
PaddockTrac Technical Assistance by DGA Team					
Historical Farming Practices Interviews designed by U of CO and Delivered by DGA Team					
Carbon Sampling Technical Assistance by DGA Team					
Standard Implementation, Verification of Ongoing CSFA by DGA, and Market Development					

In year 1, DGA will hire two new staff members to assist participants, a Producer Services Manager and a Climate Education & Tech Services Provider, dedicated to this program.

The Producer Services Manager will serve as a liaison between project partners and participating farmers, assisting in coordination and communication on stakeholder meetings, new standard development process, farm history survey, traceability standard implementation and verification for in select pilot markets as well as producer contracts and payment calculation.

The Climate Education & Tech Services Provider will provide first contact technical service, ongoing support on PaddockTrac system, grazing plans, soil test supplies, and climate education in MGIC classes. This person will work directly with participating Mentors, on-the-ground education coordinators, and project collaborators involved in the technical training, including MU and Dillon Analytics. MU will train the Climate Education & Tech Services Provider how to

install and use the PaddockTrac and Grazing Wedge and obtain cuttings for forage calibrations. Dillon Analytics will develop training on soil sampling and work with team to obtain farm history through interview interviews. Participating farms will also have an Apprentice or Journey Dairy Grazer on the farm to operate PaddockTrac, upload to GrazingWedge, and assist with the on-farm data collection.

D. Plan to provide financial assistance for producers/landowners who have implemented and will continue to implement CSAF practices

The 30 farms participating in this pilot will receive \$50 per acre in early adopter payments. These payments will cover the Mentor and Apprentice or Journey Dairy Grazer (employee) time devoted to the project for measuring with PaddockTrac once a week, two cycles of soil sampling, assistance with forage cuttings for PaddockTrac calibration.

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

All of DGA's participating farms meet the USDA underserved and small farm definition. We expect to make \$900,000 in direct payments to the 30 small farmers in this pilot project over 3 years. During the selection process, producers will be required to indicate whether or not they are enrolled in EQIP or CSP for their grazing practice so that an assessment can be made regarding potential duplicate payments. In addition, the project will be providing \$560,000 in technical assistance. All of the Apprentices and Journey Dairy Graziers, who will receive training on using PaddockTrac for measuring monitoring, and verification, are beginning farmers.

Measurement/quantification, Monitoring, and Verification plan

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

There are four components to the innovation process this project will be developing to make it cheaper and more efficient for small grazing dairies to quantify their carbon sequestration and GHG accounting: Measuring, Calibrating, Correlating, and Projecting.

The table below identifies components, all of which incorporate proven technology and modelling tools that will provide consistent data evaluation.

	Measure Historical Amount of Carbon Stored⇒	Calibrate PaddockTrac & Measure Biomass ⇒	Correlate Above Ground Biomass with Changes in Carbon Stocks⇒	Project Future Carbon Storage
Tools	Farm practices interviews and COMET	PaddockTrac sensing data and in-field forage sampling on one representative test farm in each region	LUCAS Database, PaddockTrac data, Cquester Analytics POM and MAOM soil analytics	Above Ground Forage Monitoring Data from PaddockTrac and Correlation Equation
Partners	Dillon Analytics	MU	Dillon Analytics	Dillon Analytics, transitioning to DGA

Estimate Historic Soil Carbon Accrual and Current Soil Carbon Stocks

As much of the DGA producer base adopted carbon sequestering management practices before monetized carbon valuation programs were available, the approach here begins with estimating historic carbon accrual for “legacy” producers. To do this, DGA will work with Dr. Jasmine A Dillon to estimate historic and current soil carbon stocks, and the rate of change over time using the COMET-Farm model. The 30 participating farms will collect historic and current management practices and soil characteristics information through surveys and/or interviews, and then Dr. Dillon will model their operations in COMET-Farm to estimate soil carbon stocks and change-over-time. COMET-Farm is a detailed whole farm and ranch carbon and GHG process-based modeling system, which will enable more specificity and accuracy.

To estimate a dollar value for soil carbon, we will use the COMET-Farm model to estimate the potential loss of soil carbon due to converting pastures annual row crops where the pilot farms are located. The value of soil carbon loss rates will be monetized using current carbon market payment rates, now at about \$30/ton CO₂ but expected to rise (Oliver 2022).

Calibrate and Measure Above Ground Biomass

In Missouri, PaddockTrac produces accurate biomass estimates. By knowing the height of the pasture measured, species, and some other environmental factors, the tool clarifies more than 80% of the variation in biomass. MU has little information about height/biomass relationships outside of Missouri. Therefore, calibration harvests must be performed in Upper Midwest, the Great Lakes Region, and the Northeast to validate our current models or revise them for the northern tier of states. Plants grown in the northern regions allocate carbon differently than those in more southern regions. It is the reason corn silage in the north is usually better quality than the same maturity stage grown in the south. These physiological differences may change height/biomass relationships: especially if the northern area’s canopy architecture differs from Missouri.

These calibration events are relatively straightforward to accomplish but are time-consuming. A known sized quadrant is measured for height using the ultrasonic sensor on PaddockTrac. Forage from the quadrant is harvested to ground level and weighed. A subsample from the quadrant is dried and multiplied to the original wet weight yielding an estimate of dry matter forage per unit area. This procedure is replicated three times across taller forage (pre-grazing), shorter forage (post-grazing) and intermediate forage (actively growing) for a total of nine samples. The forage dry matter is plotted against the sonic sensor height estimate (scatter plot in Excel). The equation $\text{dry matter yield/area unit} = (\text{forage height} \times \text{slope}) + Y \text{ intercept}$ gives the producer an estimation for future readings across the farm. These calibrations need to be done 2-3 times in the spring, summer and fall until a database of calibrations from the farm and surrounding farms with similar forage species are collected to give enough power and reliably reduce sampling to one per season. This work will begin in Year 2 and be completed in Year 3 of this project.

Correlating Aboveground Biomass with Changes in Soil Carbon Stocks

Once historic-to-baseline soil carbon stocks are established and PaddockTrac is calibrated for northern climate pasture species, we will estimate future soil carbon change based on a correlation equation which we will develop from the LUCAS database (<https://esdac.jrc.ec.europa.eu/content/lucas-2009-topsoil-data>) and calibrate with empirical aboveground biomass measurements taken using the PaddockTrac technology. The equation will correlate aboveground biomass with below ground soil carbon. The equation will be calibrated using the soil samples and PaddockTrac data from our pilot farms and will be designed to allow repeated use without additional extensive sampling. Recent analyses of soil carbon fractions showed that grasslands serve as reservoirs of long-term soil carbon stores (Cotrufo et al., 2019). As such, the soil samples will be analyzed using a physical fractionation technique of gaining popularity, which will give producers an estimate of short- (particulate organic matter; POM) and long- (mineral-associated organic matter; MAOM) term carbon stocks. Total carbon will also be estimated. All soil analyses will be completed by Cquester analytics (<https://www.cquesteranalytics.com/>).

Projecting Future Storage

Developing this methodology for using PaddockTrac data to predict carbon storage on small dairy grazing farms could be transformative for these farms. Not only will they be able to become more efficient grazing dairies faster, they will also be able to provide data on a continuous basis that can be used to verify their practices and quantify their carbon and climate benefits. The PaddockTrac tool provides accurate biomass estimates, which may be correlated to changes in soil carbon. However, developing a robust correlation between aboveground biomass and soil carbon stocks will initially be difficult due to limited data availability. While soil cores too empirically measure changes in POM and MAOM may be ideal, this is also costly and time consuming. As such, beginning with a correlation equation that is calibrated with data collected across several regions lays a foundation for development of a more robust correlation over time.

The Table Below Summarizes the Timing of the Measurement Program Implementation.

	Year 1	Year 2	Year 3	Year 4	Year 5
Historical Carbon Measurement & Current Carbon Stocks					
Calibration of PaddockTrac					
Forage Data Collection					
Soil Sampling					
Correlating Above Ground Forages and Soil Carbon					
Predicting Future Carbon					

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

DGA already has education coordinators on the ground providing educational support to Mentors and Apprentices. Together with the new Climate Education & Tech Services Provider and Research Analyst, DGA will be able to measure, monitor, and verify the continued practice of CSFA prescribed grazing through the implementation of PaddockTrac and establish protocols for any other data collection needed as part of this project, on the 30 test farms that will be participating. DGA estimates that 6,000 acres will be involved in the pilot.

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 the GHG benefits

Reporting and Tracking

During the life of this project, GHG benefits data computed by Dillon Analytics will be made available to both DGA and each individual participating farm in a format that will integrate with the traceability system that will be developed as part of this project. This duplication is important for two reasons. DGA farmers ship milk to diverse processors around the country. Each of those processors needs to have a way to access their supplying farms data on an individual basis if they want to get credit for their carbon insets or pass this information on to their customers.

Additionally, DGA will comply with the tracking and reporting requirements laid out in the Partnerships for Climate-Smart Commodities Data Guide. The new Research Analyst will oversee the development of a database for tracking data and analyzing data obtained at the project level, partner level, producer level, and field level for quarterly reporting. This individual will coordinate DGA staff and project partners to create and implement standard protocols, integrate information across platforms, and ensure highest level of accuracy.

Longevity

Once this project is completed and a methodology is developed for on-going monitoring of GHG benefits using PaddockTrac data, the correlation equation, and any required soil sampling, DGA will become the sign-on interface and the data clearinghouse for all of managed grazing dairy farms tracking their carbon benefits. Centralization of the data tracking at DGA will make it easier for small farmers to continue to participate in the verification program over time.

D. Approach to verification of GHG benefits

Tracking GHG benefits will be on-going and data driven in this project and will provide the basis for a new verification program. Farmers using PaddockTrac to optimally manage their grazing operation are transmitting data weekly to the GrazingWedge website. DGA and MU will be able to monitor not only continued CSAF practice but also enhancements and increases in managed perennial acreage. Any loss of participation during the project among the 30 test farms, or a significant change in the acreages covered, will also be visible project staff on an on-going basis. DGA technical staff will be monitoring the data, can reach out, and provide assistance as needed.

E. Agreement to participate in Partnerships Network

DGA looks forward to participating in Partnerships Network as part of its grant activities. This will provide a valuable opportunity for the DGA team to learn from projects around the nation seeking to solve similar challenges in different agricultural sectors. It will also allow DGA to share this data-driven, real time verification system to enhance other projects as applicable.

Plan to Develop and Expand Markets for Climate-smart commodities generated as a result of the project activities.

DGA plans a two pronged approach to developing and expanding markets for climate-smart commodities:

- Accelerate the launch and growth of niche brands in the marketplace to both build consumer awareness and trust and attract the attention of larger brands
- Develop an interoperable EPCIS/GS1 standard that will allow the entire dairy industry to participate

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

In order to accelerate the launch and growth of niche brands, DGA will work with Taste Profit Marketing (TPM) to do the following:

- An awareness and education campaign focused on the benefits of grazed milk that will transition to a campaign to support the launch of the standard and verification program developed in this project.
- A branded verification program that will bring the data-driven standard developed through this program all the way to products purchased by consumers.

- Implementation support for 3 existing processors and up to 5 farms that currently market grazed milk dairy products to consumers.

Awareness and Education

There is very little consumer awareness of the wide range of benefits of grass-based dairy products, let alone how the climate impact of grazed dairy products differs from conventional dairy products. In order to set the stage for wide adoption of the climate-smart grazed dairy verification program, DGA will work with Stiel Ventures to develop and launch a digital marketing campaign in Year 1 of this project designed to build consumer awareness of the benefits of grass-dairy products. TPM is a digital marketing firm that specializes in working with farms and food brands. This campaign will be made available to all DGA members to use in their own marketing efforts, which will exponentially amplify its reach. Once the first pilot processor and farm are up and running with the standard and verification program developed in this project, this awareness campaign will shift its focus to address the launch of the standard and verification program.

Branded Verification Program

Starting in Year 2, DGA will develop a cohesive program at DGA to manage a verification standard for data-driven grazed milk. DGA will work with TPM to brand the verification program so that it can be implemented by channel partners who adopt the standard and want to market their participation on their own labels. This will take the form of a mark that can be used on consumer product packaging, website content, and educational materials for DGA and adopting brands. A marketing plan will be developed to use these materials to launch the standard and verification program when they are ready.

Implementation Support

DGA will work with 3 mid-sized processors, who have committed as project partners, and up to 5 direct to consumer farm to serve as pilots for the standard and verification program. Stiel will select mid-sized processors and who are already working with farms that have cows on pasture and are interested in developing a managed grazing centric brand. These processors will be able to leverage the public awareness campaign we will be doing in the project, as well as the marketing materials we will be developing for the verification program. We will also be doing this for up to 5 farms that are already direct marketing milk from their managed grazing farms.

B. A plan to track climate smart commodities through the supply chain

In order for this project to jump start a larger, permanent program for climate-smart commodities made from small dairy grazing farms, a system must be developed and implemented to track climate smart commodities through the supply chain. The IFT's Global Food Traceability Center (IFT-GFTC) will leverage and extend the standard data transmission protocol used by the food industry, EPCIS/GS1, to attach climate smart attributes to products and enable their tracking and transmission through the supply chain up to retail and/or food service.

IFT-GFTC will do this through a 5-step process that engages stakeholders throughout facilitating ultimate uptake, adoption, and implementation. This will include:

- Working with stakeholders to develop the Critical Tracking Event (CTE)/ Key Data Element (KDE) matrix necessary to capture and convey raw agricultural commodities' climate smart attributes.
- Mapping these CTE/KDE matrices of farm-side climate attributes of commodities into EPCIS/GS1.
- Developing strict communication protocols using GS1 standards to facilitate interoperable traceability between trading partners.
- Building tools to assist in implementation of this new standard for conveyance of climate smart data across supply chains.

Additionally, IFT-GFTC will work with the processors to conduct end-to-end climate smart traceability pilots with all relevant supply chain partners. Together, this will create the critical data infrastructure necessary to grow markets for climate smart commodities with integrity.

The multistakeholder development process to extend EPCIS/GS1 will allow IFT-GFTC to develop both a standard and strict communication protocols necessary to market climate smart commodities to CPGs, food service, and/or retailers. GS1 is widely adopted in the food industry by both manufacturers and retailers, so creating this standard will allow broad marketing of resulting climate smart products via several channels.

	Year 1	Year 2	Year 3	Year 4	Year 5
Awareness and Education for Dairy Grazing					
Awareness and Education for the Standard and Verification Program					
Verification Program Design and Marketing Plan Dev					
Verification Program Implementation with Pilot Processors and Farms					
Multi Stakeholder Standard Design Process					
Standard Design					
Standard and Verification Launch					

C. Estimated economic benefits for participating producers including market returns

Both of the brands that have already agreed to participate in this program are seeing buyer interest in their companies because of their focus on regenerative agriculture practices. The Painterland Sisters brand is illustrative. The company is launching a skyr style yogurt into an

already crowded category where it would otherwise be difficult to launch a new product. They have been in the market for 4 months and already large national stores are interested in bringing in the brand. Repeatedly these buyers are saying that they want the brand on their shelves because of the regenerative nature of the farm's pasture-based practices. On the other hand, consumers are confused by competing claims and standards for "regenerative" and its implications for climate change. The buyers, the brand owners, and the farm family are all interested in having the kind of data-driven verification behind the claims that this program will provide. For a brand like Painterland Sisters, having a standard could be the difference between having a \$10M national food brand instead of a small local brand with under \$500,000 in sales.

The value of this project, however, is larger than just a few brands. The interoperable traceability approach grounded in EPCIS/GS1 will empower producers to maximize their returns for climate smart commodity production by allowing them to structure their data in such a way that they can sell to any buyer with a need for verified, climate-smart dairy. With their climate smart data translated into EPCIS/GS1, small farmers will not have to lock in with a single buyer, but rather have access to the broader market and the benefits that breadth conveys.

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

Getting the food system to change course is like moving an ocean liner: there are a lot of moving parts and large vested interests in the status quo. This project recognizes that to expand participation of small farms, they need ways to efficiently collect and provide the data needed to measure and verify their climate impacts. Using precision ag technology developed specifically for small grazing dairies as the foundation for the data collection and verification needed for climate-smart commodity production provides a realistic way for small farmers to participate. With DGA taking the lead on data aggregation and managing a verification standard, small farmers will be able to access ecosystem services markets they could not do individually. This will also enable them to get climate smart verified products to market quickly and with a verification that will stand up to consumer demands for transparency.

Lastly, when large food companies see traction from small brands in emerging categories, this project will have already created the data infrastructure for post-farmgate data transmission and conveyance via the downstream industry standard EPCIS/GS1. They will be able to use the data to achieve the food and ag sectors' scope 3 greenhouse gas commitments and launch their own verified climate-smart products and brands. By attaching the data to the same structure that conveys other critical product and trade information, this approach normalizes transmission of climate data, making it a standard commercial practice. This two pronged approach to market development, accelerating niche brands to get the big brands to pay attention while developing a standard that the entire industry can use, is the approach that will ultimately empower broad transformation of the food system's climate impact without leaving small producers behind.

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Quantitative Benchmarks

Required Quantitative Targets by Quarter (Cumulative) – some initial quarters may be zero:	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Number of producers involved in standard development		90		90	90	90								90						
Number of small farms involved in on-farm MMRV				5	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Number of underserved producers involved in on-farm MMRV (small producers and their Apprentices, who are beginning farmers)				10	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Number of acres involved in on-farm MMRV				1000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Number of head involved (if applicable) in on-farm MMVR				500	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Dollars provided to producers in on-farm MMVR							300,000				300,000				300,000					
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered)	A UW Study Ecosystem Services found that managed grazing systems stored 5.3 tons CO2eq/ac/yr. 6000 managed grazing dairy acres x 5.3 = 31,800 tons of carbon storage per year x 5 years = 159,000 tons of carbon sequestered. Carbon stocks of specific farms and projections of future storage to be determine during the course of the project for early adopters of prescribed grazing on small dairy farms in northern tier states through MMRV process.																			
Number of new marketing channels established											1	1	2	2	3	3	4	4	5	5
Number of marketing channels expanded											1	1	2	2	3	3	4	4	5	5
Number of digital media impressions - measure of grazing awareness			10	30	50	70	90	100	120	140	160	180	200	220	240	260	280	300	320	340
Number of measurement tools utilized (Farm Surveys, COMET, 30 PaddockTracs, Grazing Wedge website, LUCAS Database, Soil Analysis POM and MAOM soil analytics)		1	8	13	17	33	33	32	32	33	33	32	32	32	32					
Number of Soil Health samples collected				90	450								540							
Remote consult meetings re: PaddockTrac use and decision-making				6	12	18		24	30	36		42								

Other Benchmarks

Other Required Benchmarks that may be	Year 1 2023-2024				Year 2 2024-2025				Year 3 2025-2026				Year 4 2026-2027				Year 5 2027-2028			
	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM
Outreach, training and other technical assistance	Develop selection criteria and process for managed (prescribed) grazing dairy producers in target regions of the DGA network. Conduct outreach campaign to recruit producers interested in participating in the project.	Producer services manager to serve as liaison between partners and producers, assist in coordination of regional kick-off meetings and ongoing communication on MMRV process.	Select 5 farms as pilot cohort and deploy farm historical survey. Shortcourse on PaddockTrac (PT) / Grazing Wedge offered online through Managed grazing Innovation Center (MGIC).	Field mapping of prescribed grazing acres and on-farm tech training and assistance for PT, forage calibration, soil sampling for 5 pilot farms.	Field mapping of prescribed grazing acreage, and tech training and assistance for PT, forage calibration, soil sampling on remaining farms.	Producer services manager to serve as liaison between partners and producers, assist in coordination of regional consensus meetings. Facilitated peer-to-peer virtual meetings for producers to discuss MMRV, PT, and potential marking opportunities.	Producers payments dispersed based on qualifying prescribed grazing acreage. Winter MGIC online webinars offered on MMRV process and using PT to optimize climate-smart prescribed grazing.	Facilitated peer-to-peer virtual meetings for producers to discuss MMRV, PT, and potential marking opportunities.	Technical assistance for PT and updated Grazing Wedge. Document best practices for optimizing prescribed grazing in three regions on 30 farms.	Facilitated peer-to-peer virtual meetings for producers to discuss MMRV, PT, and potential marking opportunities.	Producers payments dispersed based on qualifying prescribed grazing acreage.	Facilitated peer-to-peer virtual meetings for producers to discuss MMRV, PT, and potential marking opportunities.	Technical assistance for soil and forage sampling on 30 farms. Producer services manager to serve as liaison between partners and producers, assist in coordination of regional implementation meetings.	Technical and educational support for producers participating in regional supply chain pilots. Facilitated peer-to-peer virtual meetings for producers to discuss MMRV, PT, and potential marking opportunities.	Producers payments dispersed based on qualifying prescribed grazing acreage.	Technical and educational support for producers participating in regional supply chain pilots. Facilitated peer-to-peer virtual meetings for producers to discuss MMRV, PT, and potential marking opportunities.	All 30 participating farms have verification of unique climate impact, including carbon stocks, projected future carbon storage, and additional ecosystem services.	Technical, educational, and marketing support for producers to use verification for entering new climate-smart markets.	Continued support.	Continued support.
Above ground bio-mass to carbon correlation		Develop survey questions for historical and current farm management.	Develop soil sample training guidelines.	Collect soil samples for change in soil C, SOM, POM, and MAOM over time. Update surveys based on pilot feedback and modeling.	Model historic and current carbon stocks for pilot farms.	Model historic carbon stocks for the remaining farms.			Identify carbon price(s) for valuation modeling. Complete historic carbon valuation modeling.	Model current carbon stocks for all 30 farms.			Analyze soil samples for change in soil C, SOM, POM, and MAOM over time.	Complete historic carbon valuation modeling.	Analyze change in carbon stock over time for all 30 farms. Complete future carbon valuation modeling (value of carbon loss).	Develop simple soil carbon change correlation equation in collaboration with MU project partners.	Transition carbon change calculation and valuation formula to DGA.			
Other MMRV and supply chain traceability attributes additional ecosystem services calculation, verification of acreage under continued 528 practice		Develop protocol and database for tracking project, partner, producer, and field level data, field mapping of prescribed managed grazing acres on farms.	Develop forage sampling and preparation for calibration training guidelines.	Correlate mapped prescribed grazing acreage with additional ecosystem services based on UW-Madison research for pilot farms. Implement weekly use of PT for MMRV.	Correlate mapped prescribed grazing acreage with additional ecosystem services for remaining farms. Implement weekly use of PT for MMRV.	Establish producer payment calculation and disbursement protocol based on PT verified continued practice of prescribed grazing.			Weekly use of PT for measuring monitoring, and verification of prescribed grazing acreage thru grazing season on 30 farms.				Weekly use of PT for measuring monitoring, and verification of prescribed grazing acreage thru grazing season on 30 farms.							
Traceability standard development - Producer stakeholder meetings	Plan and develop materials for kick-off workshops for 3 regions	Travel to and facilitate workshops in 3 regions for approximately 90 participants	Conduct follow-up with workshop participants to begin defining CTEs and KDEs		Plan and develop materials for Consensus workshop for 3 regions	Conduct 3 Consensus workshops	Conduct follow-up with workshop participants to begin refining CTEs and elaborate on KDEs						Plan and develop materials for implementation workshop for 3 regions.	Conduct 3 Implementation workshops						
Traceability standard development - CTE/KDE Matrix definition and master data syntax		Create list of supply chain roles. Develop standardized list of critical tracking events (CTEs) currently occurring in each region's dairy supply chain. Understand first mile data collection realities. Determine each stakeholder traceability system needs.		Develop draft CTE/KDE matrix (many farm-stage KDEs may still be in development because they depend on the COMET Paddock Tracker integration process)		Share refined matrix with participants. Develop master data syntax.									Revise matrix as needed based on learnings from pilots (add additional KDEs)					
Traceability standard development - EPICIS Climate Smart Data Standard for Dairy			Preliminary recommendations to advance from Zhang and Bhatt 2014 recommendations for dairy, GSI category guidelines from 2013, FSMA 204 requirements, and stakeholder needs	Draft the standard	Share draft standard at workshop.	Revisions to draft standard	Revisions to draft standard	Revisions to draft standard					Plan for three regional supply chain pilots. Revisions to draft standard.	Conduct three supply chain pilots. Revisions to draft standard.	Develop list of recommendations based on findings from pilots. Finalize and publish standard	Develop release materials for Standard publication				
Traceability standard development - technical guidance and communication protocol(s) for regional supply chain pilots							Set up initial COMET x traceability system API						Draft Technical Guidance and Communication protocols	Revise Technical Guidance and Communication Protocols	Revise Technical Guidance and Communication Protocols	Finalize Technical guidance and communication protocols				
Other measurements of work related to marketing of commodities	Plan campaign to build consumer awareness of managed (prescribed) grazing climate benefits and build infrastructure to execute.		Consumer awareness campaign on climate benefits of prescribed managed (prescribed) dairy launched.		Develop marketing strategy and plan awareness and education on for standard and verification program.				Launch marketing strategy and plan awareness and education on for standard and verification program.				Implement standard verification program.			Develop marketing kit for participating farms and brands.	Promote participating farms and brands via DGA and through marketing channels.	Continued promotion.	Continued promotion.	Continued promotion.
Demonstrated engagement of major partners	Plan outreach with partners re: Partnerships for Climate-Smart Commodities Project to DGA network of 200+ managed grazing dairy producers and 300+ beginning and aspiring producers		Launch outreach with partners re: Partnerships for regular updates on Climate-Smart Commodities Project to DGA network throughout the project.			Project progress, MMRV outcomes, and standard development made available to DGA producer network through newsletters, webinars, MGIC classes.							Project progress, MMRV outcomes, and standard development made available to DGA producer network through newsletters, webinars, MGIC classes.						Project progress, MMRV outcomes, and standard development made available to DGA producer network through newsletters, webinars, MGIC classes.	
Climate smart technologies employed (if applicable)	Build 30 PaddockTrac units that improve decision making for producers using prescribed grazing in addition to role in MMRV				All 30 participating farms have PaddockTrac units, training, and access to Grazing Wedge data to optimize grazing management.								All 30 participating farms have PaddockTrac units, support, and access to Grazing Wedge data to optimize grazing management.							

Quarterly Expenses

	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1 JJA	Q2 SON	Q3 DJF	Q4 MAM	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Missouri	59,185.00	59,185.00	46,251.30	46,251.30	39,501.30	39,501.30	39,501.30	39,501.30	39,501.30	39,501.30	39,501.30	39,501.30								
IFT-GFTC	50,058.92	88,379.00	50,058.92	50,058.92	52,537.78	72,061.28	52,061.28	52,061.28	7,133.36	7,133.36	7,133.36	7,133.36	56,309.48	64,476.98	56,309.48	56,309.48	7,715.44	7,715.44	7,715.44	7,715.44
Stiel Ventures	29,570.00	29,570.00	29,580.00	29,580.00	28,213.00	28,213.00	28,213.00	28,213.00	27,534.50	27,534.50	27,534.50	27,534.50	28,213.00	28,213.00	28,213.00	28,213.00	27,534.50	27,534.50	27,534.50	27,534.50
Dillon Analytics	1,300.00	2,800.00	1,900.00	65,700.00	19,750.00	19,250.00	19,250.00	19,250.00	4,625.00	5,459.00	5,454.00	5,500.00	55,160.00	9,001.00	9,001.00	3,000.00				
Subawards Total	140,113.92	179,934.00	127,790.22	191,590.22	140,002.08	159,025.58	139,025.58	139,025.58	78,794.16	79,628.16	79,623.16	79,669.16	139,682.48	101,690.98	93,523.48	87,522.48	35,249.94	35,249.94	35,249.94	35,249.94
Personnel & Fringe	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00	76,325.00
Travel IFT Meetings		8,460.00			8,460.00				8,460.00											
Travel Tech Service				4,700.00	23,500.00				28,200.00				28,200.00							
Travel PI Meetings		874.00		874.00		874.00		874.00		874.00		874.00		874.00		874.00		874.00		874.00
Producer Payments							300,000.00				300,000.00				300,000.00					
Supplies (outreach, calibration)		1,900.00		14,055.00	14,055.00	2,000.00				1,000.00			1,000.00							
Other			1,000.00				1,000.00				1,000.00		4,000.00		1,000.00	8,000.00	8,000.00		1,000.00	
Processor Advisors	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00	3,420.00
DGA	79,745.00	90,979.00	80,745.00	99,374.00	125,760.00	82,619.00	380,745.00	80,619.00	116,405.00	81,619.00	380,745.00	80,619.00	112,945.00	80,619.00	380,745.00	88,619.00	87,745.00	80,619.00	80,745.00	80,619.00
TOTAL Quarterly Expenses	219,858.92	270,913.00	208,535.22	290,964.22	265,762.08	241,644.58	519,770.58	219,644.58	195,199.16	161,247.16	460,368.16	160,288.16	252,627.48	182,309.98	474,268.48	176,141.48	122,994.94	115,868.94	115,994.94	115,868.94

DGA Total Expenses	2,672,630.00
Less passthru to producers	-900,000.00
Subawards (\$25,000 each)	100,000.00
Modified Total Direct Cost	1,872,630.00
DGA Unclaimed Indirect	187,263.00
Federal Budget	4,770,271.00
Non Federal Match	187,263.00
PROJECT TOTAL	4,957,534.00

A4 - Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
528	Prescribed Grazing

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

Practice Name	Alternative Practice Standards



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



Table of Contents

Overview of Reporting Requirements	2
Project Summary	3
Partner Activities	4
Marketing Activities	5
Producer Enrollment	6
Field Enrollment	7
Farm Summary	8
Field Summary	9
GHG Benefits - Alternate Modeled	10
GHG Benefits - Measured	11
Additional Environmental Benefits	12
Supplemental Data Submission	13
Data Descriptions	14
Unique IDs	14
Project Summary	15
Partner Activities	20
Marketing Activities	25
Producer Enrollment	30
Field Enrollment	38
CSAF Practice Sub-questions	44
Farm Summary	45
Field Summary	49
GHG Benefits - Alternate Modeled	57
GHG Benefits - Measured	61
Additional Environmental Benefits	65
CSAF Practice Sub-questions	75
Appendix A: Climate-smart Agriculture and Forestry Practices	83
All NRCS Practice Standards (not limited to climate-smart practices)	83
Other CSAF Practices	85
Appendix B: Commodity List	86

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 (CO ₂ e) emission reductions	Quarterly
Cumulative carbon stock	Whole project estimate of total carbon sequestration	Quarterly
Cumulative CO ₂ benefit	Whole project estimate of total CO ₂ emission reductions	Quarterly
Cumulative CH ₄ benefit	Whole project estimate of total CH ₄ emission reductions	Quarterly
Cumulative N ₂ O benefit	Whole project estimate of total N ₂ O emission reductions	Quarterly
Offsets produced	Amount of carbon offsets produced by project	Quarterly
Offsets sale	Name of marketplace where carbon offsets were sold	Quarterly
Offsets price	Price of carbon in offset sales	Quarterly
Insets produced	Amount of carbon insets produced by project	Quarterly
Cost of on-farm TA	Cost of on-farm technical assistance (TA) provided to producers	Quarterly
MMRV cost	Cost of measurement, monitoring, reporting, and verification (MMRV) activities	Quarterly
GHG monitoring method	Methods used by project to monitor GHG benefits (up to 5)	Quarterly
GHG reporting method	Methods used by project to report on GHG benefits (up to 5)	Quarterly
GHG verification method	Methods used to verify GHG benefits (up to 5)	Quarterly


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

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: <ul style="list-style-type: none"> • 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 (CO ₂ eq) 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 ₂ eq	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 ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons CO ₂ eq	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 CO ₂ benefit	Reporting question: What are the project's estimated total cumulative CO ₂ 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 CH ₄ benefit	Reporting question: What are the project's estimated total CH ₄ 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 ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons CH ₄ reduced in CO ₂ eq	Allowed values: 0-10,000,000
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Cumulative N2O benefit

Data element name: Cumulative N2O benefit	Reporting question: What are the project's estimated total N2O emission reductions to date?
Description: Estimated total cumulative nitrous oxide reduction based on practice implementation. This is updated quarterly. If there are no updated numbers enter the same number as the previous quarter. Conversion rate is one ton of N ₂ O = 298 tons of CO ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons N2O reduced in CO ₂ eq	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 ₂ eq	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 ₂ eq	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: <ul style="list-style-type: none"> • 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



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

Partner Activities

Unique IDs

Partner ID	Unique Project ID for each partner
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Partner name

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

Partner type

Data element name: Type of partner organization	Reporting question: What type of organization is this?
Description: Legal/financial structure of recipient or partner organization	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: <ul style="list-style-type: none"> • 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:
	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 (RCP), 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

<p>Data element name: Practice past extent - farm</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: None – all respond</p> <p>Data collection level: Field</p>	<p>Reporting question: What percent of the farm has implemented this CSAF practice (combination) previously?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • 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 <p>Required: Yes</p> <p>Data collection frequency: Initial enrollment</p>
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Field any CSAF practice

<p>Data element name: Field any CSAF practice</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: None – all respond</p> <p>Data collection level: Field</p>	<p>Reporting question: What is this field's prior experience with CSAF practices?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Yes • No • I don't know <p>Required: Yes</p> <p>Data collection frequency: Initial enrollment</p>
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Practice past use - this field

<p>Data element name: Practice past use - this field</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: None – all respond</p> <p>Data collection level: Field</p>	<p>Reporting question: Have this CSAF practice (combination) been implemented previously in this field?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Yes • Some • No • I don't know <p>Required: Yes</p> <p>Data collection frequency: Initial enrollment</p>
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Practice type
Data element name: Practice type 1-7**Reporting question:** What CSAF practice is being implemented in this field through the project?

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

Data type: List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** See list in Appendix A**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment

Practice standard
Data element name: Practice standard 1-7**Reporting question:** What standard does the CSAF practice follow?

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

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

- NRCS
- Other (specify)

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

Planned practice implementation year
Data element name: Practice 1-7 implementation year**Reporting question:** What year is the CSAF practice planned to be implemented?

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

Data type: Integer**Select multiple values:** No**Measurement unit:** Year**Allowed values:** 2022-2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Initial enrollment

Practice extent
Data element name: Practice 1-7 extent**Reporting question:** To what extent is the practice implemented?

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

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



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.


Partnerships for Climate-Smart Commodities Data Dictionary for Recipients
 February 2023
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: <ul style="list-style-type: none"> • 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 <i>Supplemental Data Submission – Field direct GHG measurement results</i>).	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 (CO ₂ eq) 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 ₂ eq	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 ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons CO ₂ eq	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 ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons CH4 reduced in CO ₂ eq	Allowed values: 0-10,000,000
Logic: None – all respond	Required: Yes
Data collection level: Field	Data collection frequency: Quarterly

Field official N2O ER

Data element name: Field official N2O emission reductions	Reporting question: What are the estimated total N2O emission reductions in this field?
Description: Estimated total nitrous oxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of N ₂ O = 298 tons of CO ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons N2O reduced in CO ₂ eq	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 ₂ eq	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 CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Other field measurement

Data element name: Other field measurement

Reporting question: Were data collected from the field for reasons other than GHG benefit estimation?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly



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 ₂ eq	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 ₂ eq.	
Data type: Decimal	Select multiple values: No
Measurement unit: Metric tons CO ₂ eq	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 CH₄ = 25 tons of CO₂eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: If project calculates GHG benefits using multiple methods

Data collection level: Field

Data collection frequency: Annual

Total field N2O estimated

Data element name: Total N2O estimated

Reporting question: What is the alternate estimate of the field's total N2O emission reductions?

Description: Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: If project calculates GHG benefits using multiple methods

Data collection level: Field

Data collection frequency: Annual

GHG Benefits - Measured**Unique IDs**

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

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

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

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

Measurement start date
Data element name: Measurement start date**Reporting question:** On what date did the measurement start?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements first began.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual

Measurement end date
Data element name: Measurement end date**Reporting question:** On what date did the measurement end?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements were completed.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023– 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual

Total CO2 reduction calculated
Data element name: Total CO2 reduction calculated**Reporting question:** What are the total measured CO2 emission reductions?**Description:** Total annual CO2 emission reductions based on practice implementation in the field calculated from in-field measurements.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual

Total field carbon stock measured
Data element name: Total field carbon stock measured**Reporting question:** What is the total amount of carbon sequestered based on repeat measurements in this field?**Description:** Change in carbon stock based on practice implementation in the field calculated from repeat soil sampling in this field. (Results for initial field soil samples should be reported in the 'Soil sample result' and 'Measurement type' columns.) Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock measurements in this field**Data collection level:** Field**Data collection frequency:** Annual

Total CH4 reduction calculated

Data element name: Total CH4 reduction calculated**Reporting question:** What are the total measured CH4 emission reductions?**Description:** Total annual methane emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual

Total N2O reduction calculated

Data element name: Total N2O reduction calculated**Reporting question:** What are the total measured N2O emission reductions?**Description:** Total annual nitrous oxide emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual

Soil sample result

Data element name: Soil sample result**Reporting question:** What is the numeric result from this soil sample?**Description:** Results of measurement(s) taken to determine the carbon stock of a soil (the tons of carbon found in a specified volume of soil).**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Amount**Allowed values:** .00001-100,000**Logic:** None – all respond**Required:** If a project conducts soil samples in this field**Data collection level:** Field**Data collection frequency:** Annual

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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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

<p>Data element name: Other water quality purpose</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: Respond if yes to ‘Other water quality’</p> <p>Data collection level: Field</p>	<p>Reporting question: What is the purpose of tracking other water quality benefits?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Commodity marketing • Producing insets • Producing offsets • I don’t know • Other (specify) <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Water quantity

<p>Data element name: Water quantity</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: Respond if yes to ‘Environmental benefits’</p> <p>Data collection level: Field</p>	<p>Reporting question: Is water conservation being tracked in the field?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Yes • No • I don’t know <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Water quantity amount

<p>Data element name: Water quantity amount</p> <p>Description: Total amount of water conservation or reduction that is measured in the field.</p> <p>Data type: Decimal</p> <p>Measurement unit: Amount</p> <p>Logic: Respond if yes to ‘Water quantity’</p> <p>Data collection level: Field</p>	<p>Reporting question: How much water conservation has been measured in the field?</p> <p>Select multiple values: No</p> <p>Allowed values: 0-1,000,000</p> <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Water quantity amount unit

<p>Data element name: Water quantity amount unit</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: Respond if yes to ‘Water quantity’</p> <p>Data collection level: Field</p>	<p>Reporting question: What is the unit for the amount of water conservation measured in the field?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Acre-feet • Cubic feet • Other (specify) <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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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

Description: Purpose of tracking reduced erosion the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.

Data type: List

Measurement unit: Category

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

Select multiple values: No

Allowed values:

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

Logic: Respond if yes to ‘Reduced erosion’

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use

Data element name: Reduced energy use

Reporting question: Is reduced energy use being tracked in the field?

Description: Tracking of reduced energy use in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don’t know

Logic: Respond if yes to ‘Environmental benefits’

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use amount

Data element name: Reduced energy use amount

Reporting question: How much energy use reduction has been measured in the field?

Description: Total amount of energy use reduction that is measured in the enrolled field.

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to ‘Reduced energy use’

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use amount unit

Data element name: Reduced energy use unit

Reporting question: What is the unit for the energy use reduction measured in the field?

Description: Unit for the total amount of energy use reduction that is measured in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Kilowatt hours
- Other (specify)

Logic: Respond if yes to ‘Reduced energy use’

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduced energy use purpose

<p>Data element name: Reduced energy use purpose</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: Respond if yes to ‘Reduced energy use’</p> <p>Data collection level: Field</p>	<p>Reporting question: What is the purpose of tracking reduced energy use in the field?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Commodity marketing • Producing insets • Producing offsets • I don’t know • Other (specify) <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Avoided land conversion

<p>Data element name: Avoided land conversion</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: Respond if yes to ‘Environmental benefits’</p> <p>Data collection level: Field</p>	<p>Reporting question: Is avoided land conversion being tracked in the field?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Yes • No • I don’t know <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Avoided land conversion amount

<p>Data element name: Avoided land conversion amount</p> <p>Description: Total amount of avoided land conversion that is measured in the enrolled field.</p> <p>Data type: Decimal</p> <p>Measurement unit: Amount</p> <p>Logic: Respond if yes to ‘Avoided land conversion’</p> <p>Data collection level: Field</p>	<p>Reporting question: How much avoided land conversion has been measured in the field?</p> <p>Select multiple values: No</p> <p>Allowed values: 0-1,000,000</p> <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Avoided land conversion amount unit

<p>Data element name: Avoided land conversion unit</p> <p>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.</p> <p>Data type: List</p> <p>Measurement unit: Category</p> <p>Logic: Respond if yes to ‘Avoided land conversion’</p> <p>Data collection level: Field</p>	<p>Reporting question: What is the unit for the amount of avoided land conversion measured in the field?</p> <p>Select multiple values: No</p> <p>Allowed values:</p> <ul style="list-style-type: none"> • Acres • Other (specify) <p>Required: Yes</p> <p>Data collection frequency: Annual</p>
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Avoided land conversion purpose

Data element name: Avoided land conversion purpose

Description: Purpose of tracking avoided land conversion in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.

Data type: List

Measurement unit: Category

Logic: Respond if yes to ‘Avoided land conversion’

Data collection level: Field

Reporting question: What is the purpose of tracking avoided land conversion in the field?

Select multiple values: No

Allowed values:

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

Required: Yes

Data collection frequency: Annual

Improved wildlife habitat

Data element name: Improved wildlife habitat

Description: Tracking of improvements to wildlife in and around the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.

Data type: List

Measurement unit: Category

Logic: Respond if yes to ‘Environmental benefits’

Data collection level: Field

Reporting question: Are improvements to wildlife habitat being tracked in the field?

Select multiple values: No

Allowed values:

- Yes
- No
- I don’t know

Required: Yes

Data collection frequency: Annual

Improved wildlife habitat amount

Data element name: Improved wildlife habitat amount

Description: Total amount of improved wildlife habitat that is measured in and around the enrolled fields.

Data type: Decimal

Measurement unit: Amount

Logic: Respond if yes to ‘Improved wildlife habitat’

Data collection level: Field

Reporting question: How much improved wildlife habitat has been measured in the field?

Select multiple values: No

Allowed values: 0-1,000,000

Required: Yes

Data collection frequency: Annual

Improved wildlife habitat amount unit

Data element name: Improved wildlife habitat unit

Description: Unit for the total amount of improved wildlife habitat that is measured in and around enrolled fields. If “other” is chosen, enter the appropriate value as free text in the additional column.

Data type: List

Measurement unit: Category

Logic: Respond if yes to ‘Improved wildlife habitat’

Data collection level: Field

Reporting question: What is the unit for the amount of improved wildlife habitat measured in the field?

Select multiple values: No

Allowed values:

- Acres
- Linear feet
- Other (specify)

Required: Yes

Data collection frequency: Annual



Improved wildlife habitat purpose

Data element name: Improved wildlife habitat purpose

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

Measurement unit: Category

Reporting question: What is the purpose of tracking improved wildlife habitat in the field?

Select multiple values: No

Allowed values:

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

Logic: Respond if yes to '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
Additional feedstock source (select most common if using more than one)		Other (specify)
		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 type	Brassica Broadleaf Cool season Grass Legume Warm season
Conservation Crop Rotation (CPS 328)	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
	Crude protein (percent)	0-100
Feed Management (CPS 592)	Fat (percent)	0-100
	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs

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

	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 management (CPS 590)	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 storage system prior to installing waste treatment lagoon
Waste Treatment Lagoon (CPS 359)	Is there a lagoon cover/crust?	
		Yes No
	Is there lagoon aeration?	Yes No


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

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

Appendix A: Climate-smart Agriculture and Forestry Practices

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

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

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



Other CSAF Practices

Traditional or cultural practices

Microbial products

Solar power generation

Grain bin construction

Pre-season drainage

Appendix B: Commodity List

CROPS

ALFALFA	CINNAMON	HYBRID POPLAR TREES
ALMONDS	CLOVER	IDLE
AMARANTH GRAIN	COCONUTS	INDIGO
APPLES	COFFEE	ISRAEL MELONS
APRICOTS	CORN	JACK FRUIT
ARONIA (CHOKEBERRY)	COTTON ELS	JERUSALEM ARTICHOKE
ARTICHOKE	COTTON UPLAND	JICAMA
ASPARAGUS	CRANBERRIES	JOJOBA
ATEMOYA	CRENSHAW MELON	JUJUBE
AVOCADOS	CRUSTACEAN	JUNE BERRIES
BAMBOO SHOOTS	CUCUMBERS	KENAF
BANANAS	CURRENTS	KHORASAN
BARLEY	DASHEEN	KIWIBERRY
BEANS	DATES	KIWIFRUIT
BEETS	DURIAN	KOCHIA (PROSTRATA)
BIRDSFOOT/TREFOIL	EGGPLANT	KOHLRABI
BLUEBERRIES	EINKORN	KOREAN GOLDEN MELON
BREADFRUIT	ELDERBERRIES	KUMQUATS
BROCCOFLOWER	EMMER	LAMBS EAR
BROCCOLI	FIGS	LEEK
BROCCOLINI	FINFISH	LEMONS
BRUSSEL SPROUTS	FLAX	LENTILS
BUCKWHEAT	FLOWERS	LESPEDEZA
CABBAGE	FORAGE SOYBEAN/SORGHUM	LETTUCE
CACAO	GAILON	LIMES
CACTUS	GARLIC	LONGAN
CAIMITO	GENIP	LOQUATS
CALABAZA MELON	GINGER	LYCHEE
CALALOO	GINSENG	MANGOS
CAMELINA	GOOSEBERRIES	MANGOSTEEN
CANARY MELON	GOURDS	MAPLE SAP
CANARY SEED	GRAPEFRUIT	MAYHAW BERRIES
CANE BERRIES	GRAPES	MEADOWFOAM
CANISTEL	GRASS	MILKWEED
CANOLA	GREENS	MILLET
CANTALOUPE	GROUND CHERRY	MIXED FORAGE
CARAMBOLA (STAR FRUIT)	GUAMABANA/SOURSOP	MOHAIR
CARROTS	GUAR	MOLLUSK
CASHEW	GUAVA	MORINGA
CASSAVA	GUAVABERRY	MULBERRIES
CAULIFLOWER	GUAYULE	MUSHROOMS
CELERIAC	HAZEL NUTS	MUSTARD
CELERY	HEMP	NECTARINES
CHERIMOYA	HERBS	NIGER SEED
CHERRIES	HESPERALOE	NONI
CHESTNUTS	HONEY	OATS
CHICORY/RADICCHIO	HONEY BERRIES	OKRA
CHINESE BITTER MELON	HONEYDEW	OLIVES
CHRISTMAS TREES	HOPS	ONIONS
CHUFAS	HORSERADISH	ORANGES
	HUCKLEBERRIES	PAPAYA

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

Partnerships for Climate-Smart Commodities

Additional Specific Terms and Conditions

February 2023

I. Overarching Statement

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

II. Eligibility and Highly Erodible Lands and Wetlands Compliance

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

- Establish Farm Records with the Farm Service Agency (FSA) (have farm, tract, and field numbers in place);
- Complete an AD-2047 (Customer Data Worksheet to facilitate the collection of customer data for Business Partner Record);
- Certify highly erodible land conservation (HEL) and wetland conservation (WC) compliance via Form AD-1026, Highly Erodible Land Conservation (HEL) 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 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.