U.S. Department of Agriculture
Natural Resources Conservation Service

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number	2. Amendment Number	3. Award /Project Period	4. Type of award instrument:
NR233A750004G018		Date of final signature - 03/31/2028	Grant Agreement

5. Agency (Name and Address)	6. Recipient Organization (Name and Address)
USDA Partnerships for Climate-Smart Commodities c/o FPAC-BC Grants and Agreements Division 1400 Independence Ave SW, Room 3236 Washington, DC 20250 Direct all correspondence to FPAC.BC.GAD@usda.gov	SOUTH DAKOTA STATE UNIVERSITY 1015 CAMPANILE AVE BROOKINGS SD 57007-0001 UEI Number / DUNS Number: DNZNC466DGR7 / 929929743 EIN:

7. NRCS Program Contact	8. NRCS Administrative Contact	9. Recipient Program Contact	10. Recipient Administrative Contact
Name: JOHN ANDERSON	Name: Daniel Curtis	Name: Kristi Cammack	Name: Kristi Cammack
(b)(6)			

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

15. Project Title/ Description: Expands markets for climate-smart Beef and Bison in SD, ND, MT, WY, CO, NE, KS, IA, MN, MO, NC, SC, tribe(s) and supports farmers and ranchers with implementation of climate-smart practices.

16. Entity Type: H = Public/State Controlled Institution of Higher Education

17. Select Funding Type

Select funding type:	☒ Federal	☒ Non-Federal
Original funds total	80,000,000.000	81329688.00
Additional funds total	$0.00	$0.00
Grand total	80,000,000.000	81329688.00

18. Approved Budget

Personnel	$4,333,778.00	Fringe Benefits	$1,164,310.00
Travel	$274,064.00	Equipment	$2,436,647.00
Supplies	$293,277.00	Contractual	20,240,203.000
Construction	$0.00	Other	51,257,721.000
Total Direct Cost	71,323,904.000	Total Indirect Cost	$8,676,096.00
		Total Non-Federal Funds	81329688.00
		Total Federal Funds Awarded	80,000,000.000
		Total Approved Budget	161,329,688.000

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

Name and Title of Authorized Government Representative	Signature	Date
KATINA HANSON Acting Senior Advisor for Climate-Smart Commodities	KATINA HANSON Digitally signed by KATINA HANSON Date: 2023.04.04 17:10:24 -05'00'	04/04/2023
Name and Title of Authorized Recipient Representative DIANNE NAGY Assistant Vice President Research, Development and Administration	Signature DocuSigned by: 7670CD5E2E48405...	Date 4/3/2023 | 14:56 CDT

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 South Dakota State University (SDSU), is to build markets for climate-smart commodities and invest in America's climate-smart producers to strengthen U.S. rural and agricultural communities.

Objectives

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

Budget Narrative

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

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

TOTAL BUDGET $161,329,688

TOTAL FEDERAL FUNDS $80,000,000
PERSONNEL $2,918,369
FRINGE BENEFITS $784,047
TRAVEL $184,555
EQUIPMENT $2,436,647
SUPPLIES $197,493
CONTRACTUAL $13,629,766
CONSTRUCTION (usually n/a) $N/A
OTHER $51,173,027
PRODUCER INCENTIVES $0
TOTAL DIRECT COSTS $71,323,904
INDIRECT COSTS $8,676,096

TOTAL NON-FEDERAL FUNDS $81,329,688
PERSONNEL $0
FRINGE BENEFITS $0
TRAVEL $0
EQUIPMENT $0
SUPPLIES $0
CONTRACTUAL $0
CONSTRUCTION (usually n/a) $N/A
OTHER $81,329,688
PRODUCER INCENTIVES $0
TOTAL DIRECT COSTS $81,329,688
INDIRECT COSTS $0

Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate of 48.5 percent and a base of $17,888,857.

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

Responsibilities of the Parties:

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

RECIPIENT RESPONSIBILITIES

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

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

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

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

Performance Reports: Quarterly

SF425 Financial Reports: Quarterly

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

Expected Accomplishments and Deliverables

See attached Benchmarks Table and associated Project Narrative.

Resources Required

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

Milestones

See attached Benchmarks Table and associated Project Narrative.

GENERAL TERMS AND CONDITIONS

Please reference the below link(s) for the General Terms and Conditions pertaining to this award:
https://www.fpacbc.usda.gov/about/grants-and-agreements/award-terms-and-conditions/index.html

Attachments:
Budget Narrative
Project Narrative
Benchmarks Table
Climate-Smart Practices List and Limitations
Data Dictionary
Climate-Smart Specific Terms and Conditions

Page 006

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 007

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 008

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 009

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 010

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 011

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 012

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 013

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 014

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 015

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 016

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 017

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 018

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 019

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 020

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 021

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 022

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 023

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 024

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 025

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 026

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 027

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 028

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 029

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 030

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 031

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 032

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 033

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 034

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 035

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 036

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 037

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 038

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 039

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 040

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 041

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 042

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 043

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 044

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 045

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 046

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 047

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 048

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 049

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 050

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 051

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 052

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 053

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 054

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 055

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 056

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 057

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 058

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 059

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 060

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 061

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 062

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 063

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 064

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 065

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 066

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 067

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 068

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 069

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 070

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 071

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 072

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 073

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Page 074

Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Revised Project Narrative

Title: The Grass is Greener on the Other Side: Developing Climate-Smart Beef and Bison Commodities

i. Executive Summary

A. Contact Information: Dr. Kristi Cammack; kristi.cammack@sdstate.edu; 605-394-2236

Project Summary. Today's livestock producers face unprecedented public scrutiny, and their livestock are frequently presented as harming the environment. However, this negative perception is not the full picture but is largely based upon greenhouse gases (GHG) emitted by ruminants. This view fails to consider the net carbon sequestration (i.e. capture and storage of atmospheric CO_2) effects of grazing livestock systems, and misrepresents the important role of large ruminants in healthy grassland ecosystems (Teague and Krueter, 2020). Grazing-land has been estimated to account for 25% of the global soil sequestration potential of soil carbon storage (Follett and Reed, 2010). Large grazing ruminants such as cattle and bison are key to healthy grassland ecosystems and provide the most nutrient dense source of protein available for human consumption. Grazing beef and bison producers are environmental stewards because the practices they employ are considered climate-smart agriculture (CSA). However, these same producers are generally overlooked in GHG reduction and carbon sequestration incentives because of a relative lack of cost-effective methods to measure carbon/GHG sinks and sources. Emerging technologies are bridging that gap, allowing for the rapid, accurate, and cost-effective measurement and verification of current CSA practices and paving the way to develop and implement novel ones.

Direct payment programs exist to encourage producers to improve environmental quality and build climate resiliency within agricultural operations, such as the NRCS Environmental Quality Incentives Program (EQIP) that rewards producers for implementing practices like prescribed grazing, planting cover crops, and improving riparian and watershed function. In addition, many non-governmental organizations (NGOs) provide certifications for livestock producers, such as the "Grazed on Audubon Certified Bird Friendly Land" certification. However, there are not market premiums attached to livestock commodities produced using these practices, which fails to further incentivize implementation beyond the initial incentive. There is a need to verify the impact of these practices, grow other "climate-smart" practices, and develop market incentives to encourage greater producer confidence and adoption. These are critical to building capacity for beef and bison producers to enter the climate-smart commodity and carbon markets.

Because of their symbiotic relationship with rangelands, grazing beef and bison are uniquely suited to be the most sustainable protein source that meets consumer demands while significantly impacting GHG and carbon. Our **long-term** goal is to create market opportunities for live beef and bison commodities produced using climate-smart grazing and land management practices. Our **objectives** are to: 1) quantify, monitor, and verify carbon and GHG benefits associated with CSA practices on beef and bison farms and ranches; 2) guide and educate producers on CSA practices most suited for their operations to enter climate-smart commodity markets while aligning with carbon markets; 3) manage large-scale climate-smart data that will be used by producers to improve decision-making and increase value for marketed live cattle and bison that will ultimately track to end-consumer products; and 4) initiate climate-smart beef and bison commodity markets that transition from direct incentives for CSA practices to market demand purchase premiums.

Our CSA practice implementation and verification steps include: 1) recruit producer; 2) conduct operation pre-assessment and calculate current COMET (**C**arb**O**n **M**anagement **E**valuation **T**ool;

the USDA's official GHG quantification tool) estimate; 3) identify candidate CSA practices and predict impacts using COMET; 4) enroll producer with CSA practice(s) and grazing plan; 5) implement and monitor CSA practice(s), and collect on-farm measurements; and 6) verify impacts of CSA practice(s) using COMET model and on-farm data from a post-assessment. Specifics for each step are detailed later.

Enrolled producers will receive technical assistance to complete grazing management plans and receive financial incentives to implement CSA practices, including established NRCS practices (described later), prescribed burning, and novel, verifiable practices that emerge during this project. We will focus rewards on the live animal segments of the supply chain to ensure the payments are delivered directly to producers. Developing climate-smart commodity markets will facilitate a transition from practice incentives to purchase premiums that will also include meat and other end-products. We request $80,000,000 in federal support of this fully-matched project.

B, C. Project Partners (including underserved/minority-focused partners).

Table 1. List of project partners and roles	
Partner	**Role**
South Dakota State Univ. (SDSU)	Measure, monitor, report, verify (MMRV); assessment of cost-effective GHG and soil carbon measurement tools; CSA practice accounting (no double counting); project oversight
SDSU Extension	CSA outreach; technical assistance; focus: small and mid-sized/Tribal/women producers
SDSU Center of Excellence for Bison Studies	Bison producer recruitment; technical assistance; CSA educational materials
AgSpire [1]	Beef producer recruitment, enrollment and payments; CSA advising and training
Tanka Fund [1]	Bison and beef producer recruitment, enrollment and payments; CSA advising and training; focus: Tribal producers
National Bison Assoc. [1]	Bison producer recruitment; CSA advising and training; distribute premium payments for bison calves; develop CSA bison market/premiums
Millborn Seeds [2]	Beef and bison producer recruitment; seed mixes customized for CSA practices (e.g., cover crops, native range)
Buffalo Ridge Cattle Co. [1]	Purchase CSA beef calves; distribute premium payments for beef calves; develop CSA cattle market/premiums
Cold Creek Buffalo Co. [2]	Purchase CSA bison calves; assist with market development
AdoptAg [1]	Data procurement and management; metrics to producers for CSA impacts and decision-making; entry into market
Yard Stick [3]	Measure and monitor soil carbon; develop cost-effective carbon measurement tool
Texas A&M [1]	GHG data management and analysis
C-Lock [3]	Measure and monitor enteric GHG emissions (bison and beef)
Superscripts: 1 = subaward; 2 = providing 3rd party match; 3 = subcontract	

Our partners (Table 1) are experienced in climate-smart land management practices and are well integrated in the beef and bison commodity supply chains. Over the initial 5-year program, we aim to cover an estimated land area of ≥ 1.9 million **unique** acres for beef and bison. Our strategic partnerships will allow us to target a wide range of producers, with particular emphasis on recruiting and enrolling historically underserved groups including racial minorities (e.g., Native Americans), small-scale (less than $350,000 in annual gross farm income) producers, women producers, and beginning producers with less than 10 years of management experience.

D. Compelling Need. The area of the U.S. dedicated to forage-based livestock production is substantial, with nearly 940 million acres of rangelands supporting livestock production (USDA-NRCS, 2003; USDA-FS, 2018) including 31.7 million beef cows and 184,000 bison (USDA-NASS, 2018a,b). This land area is more than double that dedicated to row-crops, and has enormous, untapped potential to substantially contribute to U.S. climate change commitments. However, conversion of these rangelands to cropland has been increasing. In the Northern Great Plains alone, the conversion of rangelands to new cropland has averaged 695,000 acres annually in recent years. Additionally, enrollment in the Conservation Reserve Program (CRP) has substantially declined, with ~60% of those acres returning to cropland (Kluck, 2018). This not only impacts range livestock producers, but also diminishes the carbon-reducing potential of these lands. Rangelands are 'carbon sequesters', sequestering more carbon into underground storage than forests (Hardegree et al., 2016; Klemm et al., 2020). As opposed to crop farming, grazing livestock systems provide additional benefits through sequestered carbon from animal waste and decaying plant material. Rangeland ecosystems also offer a variety of ancillary benefits including recreation, wildlife habitat and co-habitation, unique biodiversity, hydrologic function for ground water recharge, and open space for aesthetic value.

Impact. According to the COMET model, the application of recognized CSA practices on 3,913,400 total acres of grazing lands (*Note:* this is the five-year cumulative total for the project, including 1.9 million first-time '**unique**' acres plus ~2 million acres '**non-unique**' acres that are enrolled in a CSA practice over multiple years) will reduce or sequester at least 329,393 tonnes of CO_2 equivalence over the five-year period. Furthermore, the expected 30,000 head of beef calves and 8,000 head of bison calves purchased in the final year of this project alone will contribute to an estimated 116,256 tonnes of CO_2 equivalent reduction or sequestration. These numbers of CSA feeder beef and bison calves represent only 0.1% and 4.0% of the U.S. market share, respectively. To put into perspective, if these practices were adopted by 10% of the beef and bison industries, the GHG impact would grow to 9.8 million tonnes of CO_2 equivalent reduction or sequestration annually (98% increase/year), demonstrating that climate-smart beef and bison commodities and markets can directly mitigate GHG and increase carbon sequestration. Consequently, markets need to be developed that reward producers for implementing these practices and simultaneously minimize costs and barriers to entry in order for producers to readily employ CSA practices

E, F. Approach to Minimize Transaction Costs and Reduce Barriers. Transactional costs for measuring and monitoring carbon and GHG emissions are a major entry barrier for producers. Through our partnership with Yard Stick, we will reduce soil carbon sampling costs and labor by 90% compared to conventional methods. We will also quantify and verify enteric GHG emissions in representative grazing operations using innovative technologies. Critical to our "measure, monitor, report and verify" (MMRV) aim, these data will inform predictive models for enteric GHG across spectrum of grazing operations and climatic zones. The technologies include research 'gold-standards' from C-Lock. While C-Lock tools may not be feasible for wide-spread producer

use, they will be used to collect precise data for MMRV and also to calibrate more feasible technologies for broader producer use and application.

The beef and bison industries provide a unique production setting to reduce transaction costs for CSA practices because many producers easily align with and implement accepted federal CSA mitigation activities on their operations. We have multiple entry points for producers to engage in CSA practices at different levels of confidence and capacity (Figure 1). By collecting and organizing large-scale data, we will generate climate-smart metrics that can be assigned to CSA practices. These metrics can serve as decision-making tools for producers and ultimately be used to create climate-smart labels and other value-added mechanisms. This facilitates long-term viability of this project beyond the five-year period, as both cattle and bison commodity markets have existing avenues for product differentiation of live animals and end-products, allowing for market premiums at each phase of the supply chain. Protein sources that are both sustainably produced and eco-friendly align with consumer demand, with the demand for animal-derived protein alone expected to double by 2050 (Henchion et al., 2017).

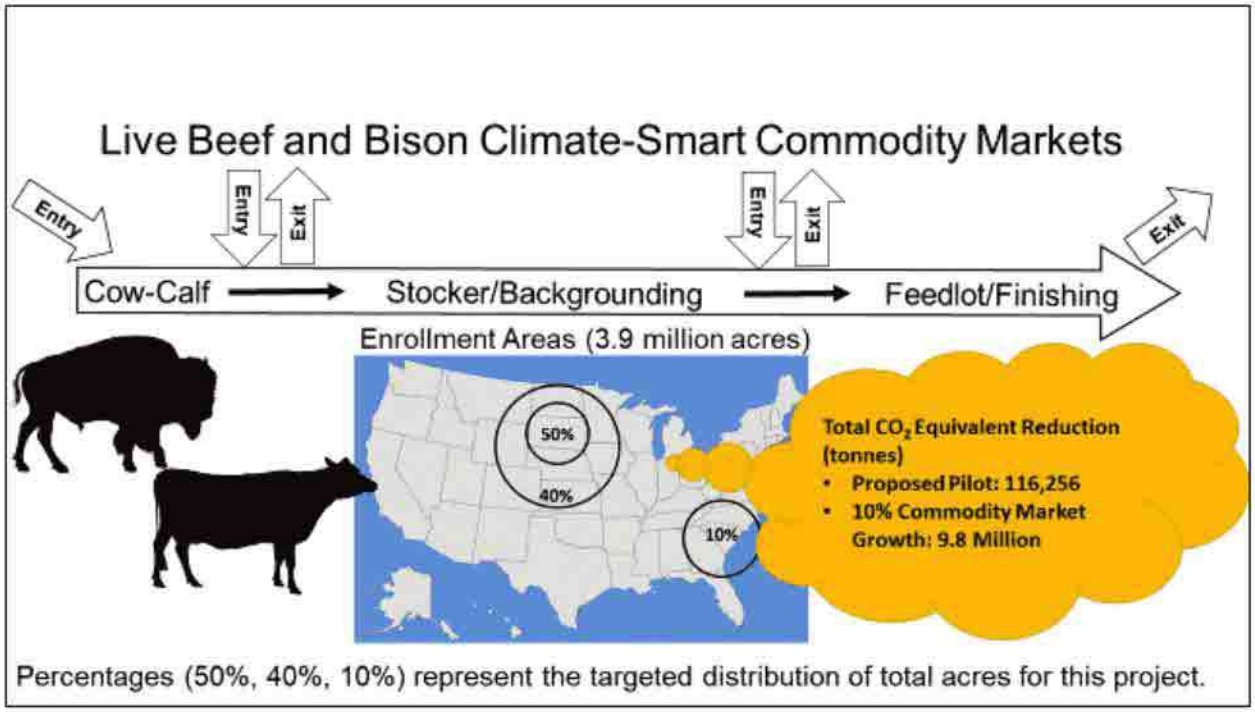

Figure 1. CSA practice entry/exit opportunities and associated GHG mitigation potential.

G. Geographic Focus. The primary focus of this pilot project is the Northern Great Plains, a grassland ecosystem that encompasses 210 million acres of North and South Dakota and large areas of Montana, Wyoming, Colorado, Nebraska, and Kansas. Livestock production accounts for approximately 40% of land use within this area, with 24% of the U.S. beef and 63% of the U.S. bison populations concentrated there. We are also targeting other states in this region that are just outside the Northern Great Plains including Iowa, Minnesota, and Missouri. Finally, we will pilot this program in the southeastern U.S. in North Carolina, South Carolina, and Georgia (Figure 1). This project is scalable throughout the U.S. because the beef and bison production supply chain processes and associated opportunities for implementing CSA practices are similar, and therefore

repeatable through other land-grant University Extension Service capacities and the beef and bison industry supply chains, enhancing the likelihood of long-term program sustainability.

H. Project Management Capacity of Partners – Members of our team are highly recognized for working directly with producers and landowners and have a demonstrated record of working with and promoting CSA activities. Moreover, we have strategically aligned with partners that work with historically underserved groups and have developed a plan to ensure high enrollment of producers within them.

- **SDSU Extension** has a demonstrated commitment to underserved groups by creating and implementing tailored programs such as Annie's Project (female producers), beefSD (beginning producers) and Beginning Farmers and Ranchers (Native producers). SDSU Extension strives to "meet producers where they are" and engage them in educational, training and networking opportunities. An added benefit of these programs is a network that continues to grow annually, which can be leveraged to directly engage producers – especially those underserved – and position them to enter CSA commodity markets. We will also rely on an established network of "early-adopter" producers who are eager to provide mentorship to less-experienced producers – a strategy that has repeatedly proven successful. Finally, SDSU Extension regularly partners with NRCS professionals for producer training and education.
- The **Center of Excellence for Bison Studies** at SDSU is a partnership with the National Bison Association and the National Buffalo Foundation. The Center elevates the bison industry and its producers by increasing bison research, education, and outreach. The Center includes active participants across an international network of producers, industry professionals, Native bison managers, academic institutions, non-profits, and volunteers.
- The **National Bison Association** (NBA) is a non-profit organization serving the bison industry for over 27 years. Its membership consists of 1,200+ bison ranchers, processors, marketers and retailers, Native producers, and conservationists. The NBA uses its signature Conservation Management Plan to document and showcase the ecological benefits of bison production. This plan will serve, in part, as a basis for recruiting and rewarding bison producers and exemplifies the potential for the bison industry to serve as an example for other climate-smart commodities.
- **AgSpire** is a technical assistance provider that empowers farmers, ranchers, and landowners by providing information and expertise to help make their operations more resilient, diversified, and holistically managed. The AgSpire team includes landowner advisors with regional context about the challenges and opportunities pertinent to enrolled participants, and knowledge of best practices to produce climate-smart commodities, helping producers create customized management plans. AgSpire anticipates that by the final year of this project, more than 300 ranches across 13 states will be enrolled in their technical assistance program, lending to long-term sustainability and growth of CSA-produced livestock commodities.
- **Tanka Fund** is located on the Pine Ridge Reservation in Kyle, SD, and provides technical assistance to Native bison and beef producers, helping them with farm and ranch planning, implementing and sustaining best practices, and gaining certifications that allow them to participate in value-added markets. Tanka Resilient Agriculture, a subsidiary of Tanka Fund, provides hands-on, regenerative agricultural training to Native producers. Tanka Fund is Native-led and committed to working directly with Native producers to acquire land and livestock and create value-added market opportunities for Native ranchers. Tanka Fund anticipates enrolling and supporting 102 beef and 68 bison operations for this project.

- **Buffalo Ridge Cattle Company** is a South Dakota-based corporation that purchases cattle across 12 states directly from a well-established, nationwide network of ranchers and farmers. Buffalo Ridge focuses on the backgrounding phase of cattle production, specializing in preserving calf identity to improve data retention throughout the supply chain and ensure valuable information flow from the originating producer to final owners.
- **Cold Creek Buffalo Company** is a 27,000-acre bison ranch in southern Wyoming that also specializes in feeding bison and raising breeding stock. Through its purchasing and breeding stock business, Cold Creek Buffalo works directly with a network of bison producers across the country and is an operation itself known for implementing CSA practices.
- **Millborn Seeds** is a South-Dakota based company that has been providing farmers, ranchers, and landowners with customized seeding solutions for over 30 years as the biggest cover crop seed company in the world. Millborn provides a vast array of seed products to assist livestock producers improve their operations and enhance their ranch ecosystem and soil health. In 2021 alone, Millborn impacted more than 2 million acres of cover crops and provided seed for more than 250,000 acres of perennial seeding. Millborn employs a team of specialists that works directly with producers and landowners and has generated a vast network of producers with CSA interests. AgSpire and Buffalo Ridge Cattle Company are subsidiaries of Millborn Seeds.

ii. Plan to Pilot CSA Practices on a Large Scale

A. CSA practices to be deployed. Over the last 50 years, range management has primarily focused on increasing livestock distribution within pastures. This has resulted in a variety of grazing systems aimed at increasing uniformity of resource use by livestock while allowing periods of rest for vegetation. CSA practices to be deployed for this project will focus on the 'grazing and pasture' climate change mitigation practice category, specifically the NRCS CPS (**C**onservation **P**ractice **S**tandard) enhancement codes outlined in Table 2. We will focus on implementing additional CSA practices to increase habitat for wildlife species, improve biodiversity within pastures, improve water quality and riparian system function, and reduce erosion (Table 2).

All practices implemented and incentivized through this project will meet NRCS practice standards (see Table 2). Each practice will follow the EQIP practice standard program code for each state that the project is active in. AgSpire and Tanka Fund will have personnel with Technical Service Provider (TSP) status. These TSP personnel ensure proper framework and documentation per NRCS standards to ensure compliance prior to incentive payments made to the producer.

The practices implemented and incentivized through this project include those listed in Table 2. No practices will be implemented on land not currently used for agricultural production. Also, no practices will involve ground disturbance below the plow zone (assuming an 8" depth). Tanka Fund will be responsible for prescribed burn plans. They will work with The Nature Conservancy burn programs and the Bureau of Indian Affairs Wildlands and Fire teams, both of which will assist with burn plans and provide the training needed to do the prescribed burns.

Table 2. Greenhouse gas (GHG) benefits and total acres enrolled in each NRCS conservation practice standards (CPS) programmatic theme.

	Project Total (FY1–FY5)	
CPS Activity	GHG Benefit (tonnes CO_2-equivalent)	Acres
AgSpire		
Cover Crop Planting (340)	13,661	44,625
Forage Planting (512) *	151,924	49,088
Range Planting (550) *	85,411	49,088
Prescribed Grazing (528)	27,359	2,125,000
Tanka Fund		
Prescribed Grazing (528)	4,378	340,000
Silvopasture (381)*	16,230	1,403
Riparian Herbaceous Cover (390) *	5,878	1,700
Prescribed Burning	--	17,000
Upland Wildlife Habitat Mgt (645) via 327 *	2,869	850
Total GHGs (tonnes CO_2-Equivalent)	**307,711**	--
Total Enrolled Acres	--	**2,628,753**

**Indicates CPS activity with 5+ year commitments calculated over a 5-year averaged GHG estimate. Source: http://comet-planner.com/*

Livestock are the greatest tool ranchers have for managing grasslands. Development of a grazing management plan to identify operational goals and manage the intensity, frequency, timing, and duration of grazing events is essential to the integration of CSA practices. All enrolled producers will submit a written grazing management plan that includes climate variability contingencies (e.g., drought, flood) and associated management actions (e.g., culling or destocking). AgSpire, Tanka Fund, or SDSU Extension staff will review the grazing management plan with the producer.

SDSU Extension and land-grant institutions have a long history of working directly with local and regional NRCS staff for producer education and applied research. We will continue to work with NRCS and private rangeland consultants to provide technical assistance to enrolled producers who choose to assess rangeland health and wildlife habitat based on current management strategies. Qualitative and quantitative assessments of rangeland health, wildlife habitat, and biodiversity provide land managers with a robust understanding of their land and data-backed communication tools for use with the public when marketing CSA commodities. Scores from the NRCS 'Interpreting Indicators of Rangeland Health' manual will generate a rangeland health metric based on soil and site stability, hydrologic function, and biotic integrity. Similarly, scores from the NRCS 'Wildlife Habitat Evaluation Guide' will generate a wildlife habitat metric as an indicator of quality and quantity of wildlife habitat, including factors such as cropland quality, uncultivated land type, wetland conditions and management, and quality of woody cover. Surveys will also monitor wildlife and insects – including invertebrates, reptiles, amphibians, birds, fish and mammals - on representative operations, increasing the understanding the ecological impacts of CSA practices. Although grazing systems can differ widely among producers, these assessments can help identify performance gaps in management, decide on additional CSA practices, and direct producers to an appropriate program (e.g., EQIP) to cost-share implementation. This will allow livestock producers to evaluate several programs to enter the CSA commodity market without the need to implement a costly new management system that might not align with operational goals.

B. Recruitment plan for producers and landowners. Through our collective recruitment efforts, we anticipate enrolling a total of 850 producers into CSA programs, reaching an estimated targeted area of 3.9 million total acres (unique + non-unique). We estimate a total of 85,000 head of cattle and 27,000 head of bison from participants enrolled through AgSpire or Tanka Fund will be purchased and marketed with a CSA classification label. To recruit producers and landowners into CSA practices, we will leverage several existing partnerships and programs. We will customize our recruitment and technical assistance efforts to engage a broad spectrum of producers: those already implementing CSA practices ('established adopters'); those wanting to immediately apply CSA practices ('early adopters'); and those interested applying in CSA practices but who have greater hesitancy ('mid- to late-adopters'). We will incentivize established adopters already implementing a CSA practice on their land if they have not received any past payment for that practice or if they choose to expand the practice beyond the original acres (i.e. we will incentivize only new acres). This allows us to reward established adopters while ensuring no double-counting for incentives. Furthermore, we will place a ceiling on the CSA acres for which a producer can receive direct incentive funds to maximize the number of operations implementing CSA practices (*Note:* producers will still be provided with technical assistance for any CSA acres beyond this ceiling). These strategies will help ensure greater overall industry inclusion and adoption of CSA practices. Specific partner recruitment plans are detailed later. In addition to these plans, we will work with local and regional NRCS offices to identify potential new adopters. Technical assistance will be provided by AgSpire, Tanka Fund and SDSU.

SDSU Extension. There is a long history of SDSU Extension collaborating with state, federal, and Tribal agencies and NGOs. In 2021, the World Wildlife Fund (WWF) launched the Ranch Systems and Viability Planning (RSVP) network project with the goal of improving grassland management across 1 million acres of working lands in South Dakota, Montana, and Nebraska. Through the RSVP project, WWF is working to establish a comprehensive system of support for farmers and ranchers to develop grazing management plans with assistance from on-the-ground technical advisers, and to provide access to ongoing education. SDSU Extension is directly involved in RSVP through the recruitment and education of producers *(See Letter of Support)*. The SDSU Extension program "beefSD" is an intensive two-year program for beginning producers and is led by personnel involved in this project. Since its inception in 2008, beefSD has had over 120 successful participants. The foundation of beefSD is providing beginning producers with the tools and networks they need to be successful in the beef industry. This producer network is enthusiastic about implementing CSA practices at scale and desire to enter climate-smart beef and bison commodity markets. This network includes producers at various stages of CSA practice adoption.

Millborn Seeds, AgSpire, and Buffalo Ridge Cattle Company. Collectively, these entities are committed to climate-smart agriculture and recruiting producers for this project *(See Letters of Commitment)*. As a regenerative seed solutions company, Millborn works with producers across all 50 states. This extensive network will broaden the geographic scope of project participants across both beef and bison industries. AgSpire will host its own recruitment events to raise awareness about the program and will also participate in outside functions that attract farmers and ranchers who would be interested in this program, including but not limited to: SD Soil Health Coalition, SD Grassland Coalition, Minnesota Soil Health Coalition, Practical Farmers of Iowa, State Cattlemen's Associations, and the National Cattleman's Beef Association. For the Southeastern U.S., a prominent cattle and soil health advocate, Kevin Yon, has agreed to provide introductions and promote the program in the Carolinas and Georgia *(See Letter of Support)*.

AgSpire will implement an incentive-based system that rewards early adopters and encourages new adoption of CSA practices on farms and ranches. Buffalo Ridge Cattle Company also has an existing customer base of ranchers and farmers who are likely candidates for the program throughout the target regions.

Tanka Fund. Tanka Fund is currently working with 11 Native beef and bison producers with 1,500 head of bison on 100,000 acres. They plan to strategically grow Native participants over the 5-year period for a total of 170 new enrolled bison and beef producers. They also plan to increase enrolled acres to contribute a total of 425,000 CSA acres to the project *(See Letter of Commitment)*. Tanka Fund will oversee agreements with Tribal individuals that enroll in the program (See "*Procedure and Details for Native Producer Enrollment*" on Page 21 below). The NRCS typically requires formal agreements for practices that disturb the land (e.g., control burns, silvopasture) but not for practices that do not disturb the land (e.g., grazing plans). Tanka Fund will engage the Bureau of Indian Affairs and the Tribal president when practices dictate that an agreement is needed.

National Bison Association (NBA) & Center of Excellence for Bison Studies. The NBA will lead recruitment efforts among its membership *(See Letter of Commitment).* Through its Conservation Management Plan program, the NBA can readily identify producers passionate about CSA practices and an emerging 'responsibly-raised' market. The NBA hosts national and regional producer meetings and will promote this project at those venues and via social media to encourage participants from across the U.S. The recently formed Center of Excellence has elevated awareness of the bison industry and been instrumental in launching several new partnerships – many of which will be recruited into this project. For example, the Turner Institute of Ecoagriculture formed an Agriculture Research Organization and named SDSU as its land-grant university partner. This relationship is foundational to the project involvement of Turner Ranches as a verification partner and as an industry leader and mentor for other producers *(See Letter of Commitment)*.

C. Plan to provide technical assistance, outreach, and training. Technical assistance, outreach and training plans will be reviewed and shared among partners to ensure consistency across a broad spectrum of efforts. Given the wide scope of this project, we have strategically aligned partners to distribute workload among specific producer groups. Because we anticipate producers will enroll at different times, we will provide assistance throughout the 5-year timeline of this project (*See budget narrative for annual breakout of enrollment, CSA acres, and CSA verified commodities*).

SDSU Extension - Focus: Mid- to late-adopters; underserved groups. Outreach efforts will focus on producers who are open to learning and applying CSA practices but are unsure how to integrate them into their operation. These producers understand that adopting CSA practices can increase their profit margins, build ecological resiliency, and help ensure generational transfer of their ranch. SDSU will provide technical assistance to landowners by coordinating rangeland health assessments and wildlife evaluations and will work with producers to create customized grazing management plans. SDSU Extension will create a suite of resources to provide training and information for producers desiring to implement CSA practices on their operation and enabling them to market value-added commodities. These resources will be publicly available, extending the awareness and educational reach beyond project participants.

One Co-PI is a Cultural Ecologist who will oversee the coordination and implementation of this programming. This position will work with an Outreach Coordinator to review recruiting and educational materials from our strategic partners (e.g., AgSpire, Tanka Fund) for cultural

appropriateness when engaging with historically underserved groups. The Outreach Coordinator will assist the strategic partners in raising awareness of this program, recruiting producers into the program, and matching producers with the appropriate strategic partner(s). Outreach efforts will include a variety of strategies, including videography, storytelling, success stories, and updates on webpages and social media sites. The Outreach Coordinator will also facilitate an opt-in online network (e.g., a private Facebook group) to enhance peer-to-peer learning in the CSA community. During in-person annual Leadership Summits, a train-the-trainer approach will be used to share resources, identify areas for improvement, and address program goals with strategic partners.

AgSpire and Millborn Seeds - Focus: Established/early adopters. AgSpire and Millborn will leverage their extensive producer networks to enroll producers currently using CSA practices and/or those that are highly interested in initiating such practices. AgSpire will certify technical service providers with approval to write conservation plans. AgSpire will establish one-on-one relationships with enrolled producers to complete written grazing management plans, determine acres eligible for cover crop and rangeland seeding, and identify opportunities for additional CSA practices. They will also be responsible for directing enrolled participants to educational opportunities, both coordinated by the project and others for maximum collaborative learning. AgSpire Landowner Advisors will verify practice standards, seeding plans, site prep plans, and maintain cultural awareness and appropriateness through consultation and advising via SDSU Extension and NRCS. Moreover, the landowner advisors will serve as a resource for participants on other conservation, soil health, or grazing management related questions. By year 5, at least 300 unique farms and ranches in 13 states will be able to engage in this type of personalized, "boots-on-the-ground," technical assistance to make lasting improvements on their properties.

Tanka Fund - Focus: Native and other underserved groups. Tanka Fund is a highly reputable resource for Native bison and beef producers, and for non-Native producers operating on Tribal lands. Tanka Fund employs two technical assistance staff members and will expand that capacity to include another technical assistance employee and a range ecology position. The technical assistance team will work directly with producers to plan and implement CSA practices and grazing plans, and the range ecologist will assist with monitoring practice outcomes. Summer interns will be recruited to assist with data collection and monitoring. Tanka Fund will organize regular training workshops for producers, and will themselves participate in national, state, local and Tribal training workshops pertaining to CSA practice design and implementation to ensure continuing education. Tanka Fund will work directly with the USDA NRCS tribal liaisons and other agencies in the region to maximize CSA outreach and education among Native producers including: Intertribal Agricultural Council, Native American Fish and Wildlife Society, AKIPTAN and Lakota Fund, Makoce Agricultural Company, InterTribal Buffalo Council, and Tribal beef associations.

Some of the largest barriers for Native American beef and bison producers are land acquisition, financing, and access to resources. Due to these barriers, Tanka Fund utilizes a Technical Assistance Cohort approach through its business enterprise to directly meet specific producer needs and help them successfully manage and maintain their own herds. Tanka Fund is well positioned to engage other underserved populations (beginning, women, and small-scale producers).

D. Plan to provide financial assistance to producers. Beef and bison producers will be enrolled to the project through AgSpire or Tanka Fund. AgSpire will focus primarily on cover crops, forage

and range plantings, and prescribed grazing. Tanka Fund will focus primarily on prescribed grazing, silvopasture, riparian herbaceous cover, prescribed burning, and upland wildlife habitat management *(See Table 2 on Page 7)*, focusing much of their work towards Native American producers. All producers will complete a grazing management plan with an appropriate advisor that outlines goals and opportunities for improvements through the aligned CSA practice(s). Price/acre incentive will vary according to practice (~$4-$160/acre) depending on costs, needed infrastructure, impact, etc.; NRCS standards will be followed. Each operation will be eligible to receive incentive payments for up to 200 acres annually for any combination of practices except for participants enrolled with Tanka Fund who choose prescribed grazing (up to 2,500 acres annually). Additional acres may be adopted at the producer's expense and will be captured in the total number of affected acres; producers will still receive technical assistance for those additional acres. SDSU will oversee CSA practice accounting and, along with key partners enrolling producers (i.e. AgSpire and Tanka Fund), will ensure no double counting of benefits via existing incentives being received by the producer on the same land. The technical assistance provided through this project includes personal, boots-on-the-ground, one on one relationships with each participating producer. Each participating producer will sign a form to confirm whether they are enrolled in a USDA program, and indicate which program, for which practice and on what acres. This letter will certify that there will be no double counting. Practices implemented through this project will be well documented and acknowledge current USDA program enrollment. If there is practice implementation on the same acre, landowner advisors will ensure additionality is achieved in order to receive the per bushel premium and that no double payment for multispecies cover crop planting is provided. No financial incentive payment will be made for practices implemented prior to or after the project duration. Landowner advisors can request a copy of the contract if the producer has already enrolled in a USDA program. Practices will be audited, and incentive payments made for practices implemented. Continuous monitoring will ensure that longer term practices (e.g., CPS 512, 550 in Table 2) are maintained for the 5-year project period.

Our ultimate goal is to transition from CSA practice incentives to 'responsibly-raised' beef and bison markets that pay a premium for CSA-produced livestock. While the realization of that goal is beyond the scope of this project, we will initiate that effort by working with CSA-motivated buyers to provide a separate producer premium for CSA-produced beef and bison. This premium will in turn lead to the development of a market for CSA-produced livestock that more beef and bison producers can transition towards in the long-term. To be eligible for this premium, producers must enroll in this project, completed the grazing management plan, and successfully implement one or more CSA practices. For beef, Buffalo Ridge Cattle Company is committed to purchasing 85,000 head CSA-produced cattle at an average premium of $80/head *(See Letter of Commitment)*. For bison, CSA-produced bison will be purchased by several buyers (a different strategy that reflects the unique structure of that industry). The NBA will utilize its commercial marketers' committee to solicit buyers of 27,000 head of CSA-produced bison over the five-year period and will be responsible for delivering a $100/head premium directly to producers. Cold Creek Buffalo Company has committed to purchasing a total of 12,500 head of CSA-raised bison over 5 years *(See Letter of Commitment).*

Finally, Tanka Fund has provided approximately $300,000 in financial assistance over the last 3 years to Native American producers to invest in fencing, water development, and corral development. This outside funding assistance will continue to increase to a minimum of $1,000,000 over the five-year project period. The funds can be directed toward much-needed

infrastructure that will position Native American producers to implement CSA practices for this project. These funds will supplement costs not covered by the incentives (i.e. no double counting).

In total, 71.7% ($46,518,673) of the requested total direct funds will be appropriated for producers: 36.4% in direct payments (incentives and premiums) to producers and 35.3% in benefits (e.g., provided services) to producers *(Appendix B of Budget Narrative)*.

E. Plan to enroll underserved producers. Partners for this project were strategically identified to ensure high enrollment of underserved producers, including beginning, Native American, women, and small-scale producers. We will also give special enrollment consideration for military veterans. **SDSU Extension** will work with AgSpire and Tanka Fund to aid underserved producers and their unique needs. SDSU Extension has a reputable history of working directly with underserved groups through programs developed specifically to increase accessibility (previously described).

- **Tanka Fund** works directly with Native American producers and with non-Native producers on private, allotted and Tribal lands. Through its assistance efforts, it has developed an extensive network of producers, many of whom are also small- and beginning-producers. Tanka Fund is already working with 11 Native American operations with 1,500 head of bison on 100,000 acres and estimates at least 65% of its enrolled participants represent historically underserved groups.
- **AgSpire** will reserve 30% of the total number of enrolled ranches each year for underserved producers. Two enrollment periods will be open - one for underserved participants and one for general participants. If the general participant pool fills first, the other pool will remain open only to underserved producers. Alternatively, if the underserved producer pool fills faster, the general slots will be used whenever possible for underserved producers to maximize that number.

In total, 32% ($21,893,045) of the total direct funds are specifically appropriated for historically underserved producers *(Appendix C of Budget Narrative)*, demonstrating a commitment to serving these groups.

iii. Measurement/quantification, Monitoring, Reporting, and Verification (MMRV) Plan

A. GHG benefit quantification. Through strategic partnerships with technology companies, SDSU and **Texas A&M** will use the COMET model and develop innovative methods to quantify carbon and GHG benefits associated with CSA practices. To formulate science-based policy, we will expand our ability to scale carbon and GHG measurements to the landscape level.

Yard Stick - For soil carbon stocks, the company **Yard Stick** will measure the real-time stratified soil profile organic carbon and bulk density on all producer operations enrolled in this project. Yard Stick provides unique hardware technology in a handheld device to instantly read soil carbon based on spectroscopy, enabling accurate quantification while reducing sampling cost by 90%. An estimated 68,000 samples will be collected over the 5 years of the project.

Intensively monitored operations - In addition to soil carbon, we will intensively monitor enteric GHG emissions, soil microbial community, and biodiversity on six producer operations (four beef and two bison) selected based on location, scale of operation, and incorporation of CSA practices. Sites will be stratified across the Northern Great Plains to ensure representation across a variety of

climatic zones and plant communities. These more intense measurements are needed to assess and confirm the impacts of CSA practices.

- *GHG Emissions.* The "gold standard" to measure enteric emissions of methane and CO_2 from grazing ruminants on pasture is the GreenFeed™ system (**C-Lock, Inc**.). The GreenFeed™ has extensively captured GHG grazing livestock emissions data across the globe. We will use GreenFeed™-generated data collected from the six intensively-monitored ranches (previously described) to assess and confirm the impact of CSA practices on cattle and bison GHG emissions *(See Letter of Support).*
- *Soil Microbial Community.* Although soil organic carbon and bulk density are important factors for quantifying carbon sequestration, soil microbial community size and composition are the primary drivers of carbon flow in soil systems. For this project, we will supplement soil carbon sampling on the six intensively-monitored ranches (previously described) by characterizing dynamic soil microbial communities for size and composition. A better understanding of soil microbial response to CSA practices may lead to novel monitoring and carbon mitigation practices.
- *Biodiversity.* Surveys will be performed on the six intensively-monitored ranches during years 1 and 4 of the project to monitor populations of wildlife and insects. Any change in biodiversity will be associated with other metrics and used to evaluate the impacts of CSA practices on the fauna *(Details in Budget Narrative).*

Nitrous Oxide (NO_2) Measurement. As the most potent GHG, NO_2 represents some of the greatest potential to contribute to U.S. climate change commitments but is often ignored in mitigation efforts. The GreenFeed™ system does not measure NO_2. To remedy this, we will use relaxed eddy accumulation (REA) stations to measure N_2O emissions. Three REA stations will be placed on one cattle operation and one bison operation. The first REA station at each site will be placed in "un-grazed habitat" to establish baseline NO_2; the second and third REA stations will measure seasonal NO_2 in continuous and rotational grazing systems, respectively. Measuring NO_2 will help complete the grazing livestock GHG picture and possibly lead to new mitigation approaches.

Novel Technologies. The GreenFeed™ and REA systems provide precise and accurate measurements needed to assess and confirm CSA impacts, but are costly and technical preventing widespread, on-farm use. If we expect producers to collect GHG and carbon data, we need novel technologies that are less costly and easier to implement. Producers need their own data to enter the carbon market and/or market their CSA-produced livestock, and these collective data are needed to bolster our MMRV efforts. We have identified several candidate technologies – including infrared cameras and laser GHG sensors *(Details in Budget Narrative)* – that are cost-effective, easy to use, and have potential to fulfill this need on a large-scale. We will deploy these novel technologies at the GreenFeed™ and REA sites for calibration and validation, with the goal of developing a producer-friendly suite of GHG and carbon measurement tools.

B-D. Monitoring, reporting, tracking, and verification (MMRV) of practice implementation. The anticipated numbers of operations and acres reached through project activities are described earlier as well as anticipated GHG benefits generated via COMET. SDSU Extension will act as a third-party evaluator to monitor practice implementation, and track, report, and verify GHG benefits and costs associated with each operation and CSA practice. We will accomplish this through a partnership with **AdoptAg**, a predictive analytics company, to develop software and build a database for warehousing all data generated on individual operations through this project.

AdoptAg will create an online submission form for producers interested in implementing CSA practices and entering the monitoring and verification program. The form will be used by SDSU Extension to verify eligibility into the pilot program, determine potential CSA practices, and ensure that producers are not receiving payments for practices under another USDA program. **In this project, GHG benefits will remain with landowners** *(Marketing strategies for cattle and bison raised with CSA practices are outlined in Section iv, Part A and Carbon credits in Section iv, Part E).* This retained ownership of GHG benefits provides assurance that the producer will remain in control of their carbon credits and other quantifiable GHG benefits and can choose to enter into contracts that best align with their goals.

Once producers are enrolled (through AgSpire or Tanka Fund), they will receive anonymous individual IDs linked to all data generated on their operation throughout this project. Minimum data reporting requirements will include: number of total acres for the operation, number of acres enrolled in each CSA practice, number and class (cow/calf, stocker, etc.) of animals, grazing management plan, and Yard Stick soil data collection. An automatic programming interface will be developed to calculate the amount of carbon sequestration and mitigation for each associated CSA practice implemented on a producer's operation based on the COMET model.

A SDSU data management coordinator will be responsible for data intake and security as well as quality checks to ensure GHG benefits are not double accounted in the system. In addition, we will develop data validation checks to ensure soil carbon data and GHG benefits associated with each practice are within the range of known values measured and reported using scientifically rigorous methods. Data outside this range will be flagged and investigated to develop verification guidelines and standards that can be incorporated at scale across the beef and bison industries.

AdoptAg software will enable producers to access data collected from their own operation and generate reports and visualizations. SDSU Extension and AdoptAg will help producers understand and leverage these data to market their CSA-produced livestock and communicate with the public about their 'responsibly-raised' animals. All beef cattle entering the commodity marketing program purchased through Buffalo Ridge Cattle Company and all bison purchased through NBA-identified buyers (e.g., Cold Creek Buffalo Company) will receive an electronic identification (at no cost to producer) tag which will be tied to each operation to track associated CSA practices and GHG sequestration and mitigation estimates through the supply chain.

The "Adopt Platform" from AdoptAg is the key technology platform on which the Climate Smart project will reside. It will be the driver for the development of Climate Smart certification and access to this will be key to the success of the overall project. Software technology platforms cannot operate without these technology support services integrated into their systems. Using the Adopt Platform not only promotes Climate Smart commodities, it enables it. All aspects - from digitizing the enrollment form to capturing enteric emissions data and a significant number of soil sample results and then drawing correlations from all data points to establish metrics and provide validation for producers - are part of this technology offering. This platform will establish the foundation to continue the program beyond the initial five-year period.

E. Agreement to Participate in Partnerships Network. We agree to fully participate.

iv. Plan to Develop and Expand Markets for CSA Commodities

A. Partnerships designed to market resulting CSA commodities. *Bison.* Over the last 25 years, the NBA, Tanka Fund, and the entire bison industry have cultivated strong consumer demand for sustainably produced meat and bison products. Therefore, integration of climate-smart produced bison into the overall market is expected to be well received. Complementary marketing strategies for value-added climate-smart bison reinforces the existing structure that NBA, individual producers, and larger organizations, such as Turner Enterprises Inc., already implement for sustainably produced bison. Traceability of CSA-produced bison throughout the supply chain in combination with the data generated by AdoptAg will aid in label development and marketing strategies that will carry through to the retail level.

Beef. Buffalo Ridge Cattle Company is committed to purchasing 85,000 head of beef feeder calves raised on operations incorporating CSA practices. Anticipating growth in both the number of CSA-produced beef calves and enthusiasm for climate-smart commodities, we will also identify other buyers interested in purchasing CSA-produced feeder calves at a premium. Buffalo Ridge has been working for years to represent the highest value feeder calves offered in the Northern Great Plains and for this project will build a brand that represents beef cattle raised using a minimum threshold of CSA practices. AgSpire, Buffalo Ridge, and SDSU Extension will create a producer-led advisory panel to guide a 'certified' labeling system that can be applied to beef raised using CSA practices based on aggregated data from the AdoptAg process. Ultimately, these CSA certified feeder calves will be marketed through the supply chain to help companies achieve their objectives to improve the sustainability in their operations and achieve their environmental goals. Buffalo Ridge will work directly with feed yards and corporations that have pledged to provide more sustainable beef products to their customers. The commitment to the adoption of CSA practices will be documented and verified through the supply chain, culminating in label presented at the retail level. For both bison and beef, a label recognized by consumers will instill confidence that their purchase dollars support U.S. farmers and ranchers who are actively working towards a more regenerative way of producing livestock by adopting climate-smart practices.

B. Plan to track CSA commodities through the supply chain. Cattle and bison will have individual electronic ear tags installed prior to leaving the farm or ranch of origin. This will allow for the tracking of the animals through the supply chain, regardless of how ownership changes. There are numerous companies in the livestock industry that provide electronic identification tags, on-ranch audits, and tracking capabilities. To date, there has been slow adoption of animal traceability, but that trend is shifting and projects like this will help drive adoption for producers of all sizes. Buffalo Ridge will provide technical assistance to all enrolled producers for the implementation of tags, software, and other processes necessary for the adoption of individual animal identification, in addition to the service provided by the supplying company. Once livestock are purchased from the ranch of origin, the information about them (e.g., place of origin, age, dates of movement) will be recorded and transmitted through the supply chain with the animals.

The feeder cattle and bison created as a product of this Climate Smart Commodities project will be at the front end of the largest sustainability effort in the history of these two respective industries. Both cattle and bison enrolled in the pilot project will be electronically identified with the ability to be tracked from birth to slaughter along with the resulting improved land use practices from the respective ranches. Because of the scope and practical application of this project, Buffalo Ridge Cattle has identified partners in the U.S. cattle feeding, packing and retail food industries.

Similarly, the National Bison Association and Cold Creek Buffalo company are partnering for this project and will be working together to identify additional bison buyers within the industry that specialize in procuring, processing, and selling of sustainably produced bison products. Carbon reductions and sequestration will be estimated and promoted to provide added value to these feeder calves, fed beef and bison entering these supply chains. Long term viability will occur due to the collective marketing efforts funded by this grant as business partners (e.g., commercial, private) are developed that put lasting value on the insets created within the parameters of the program.

C. Estimated economic benefits for participating producers. For mass adoption of CSA practices to occur, technical assistance, practice incentives, and commodity premiums are key. All three areas are addressed in this project, with no sign-up fees for program participants. Costs of data collection to complete the MMRV requirements of the program are also covered for the duration of this project. Traceability adoption is supported through this project and dedicated technical assistance is offered at no charge. Modest practice incentives are sufficient to spur the adoption of new techniques, and the premium applied to the resulting beef and bison calves should result in increased profitability for participants who are committed to improved land management practices. For example, a participant who enrolls, completes a grazing management plan, implements a CSA practice, and markets 100 beef calves per year (project estimate) for three years, would receive an average of $80/head in premiums, or a total of $24,000 for 300 qualified calves. If that producer planted in total 175 acres each of multispecies cover crop ($50/acre), forage planting ($75/acre), and range planting ($125/acre) over the 3-year period, an additional financial incentive of $43,750 would be available through this program. That payment is sufficient to compensate for implementation costs, including seed and application costs, and ensures advantages from the increased quality and quantity of forage production further enhance financial benefits. Similar examples can be drawn for bison participants.

Any reduction in GHG emissions from these CSA practices can be quantified using the COMET model and tracked at the individual farm level. We will use new technologies to measure enteric GHG emissions and thereby quantify GHG benefits associated with CSA practices. By calibrating and verifying more producer-friendly technologies, we will expand our knowledge of GHG benefits and provide producers with tools to collect the data they need to enter into carbon credit programs. Depending on a producer's situation and desired goals, participation in a carbon market could represent an additional source of income.

D. Post-project potential. A mandatory grazing management plan written by producers for their operations will ensure they understand CSA grazing practices and enable them to modify the plan and adapt to changing climate conditions and new goals. Producers will be incentivized to initiate CSA practices and will receive customized technical assistance to build confidence. Further, they will gain practical knowledge on how to successfully implement other CSA practices. A climate-smart producer network will provide the human capacity to continue recruiting and supporting new adopters into CSA. Many CSA practices will be in place far beyond the 5-year requirement of this project, as they will be integrated into a grazing plan for livestock forage.

Emerging and cost-effective technologies to verify carbon sequestration and GHG emission reductions are rapidly developing for broader deployment, enabling easier entrance into CSA beef and bison commodity markets. Carbon and GHG data collected across various CSA practices, geographic regions and climatic zones will be valuable contributions to refining the USDA's

COMET models to broaden applicability to other livestock. These tools may be calibrated in the future for small ruminant grazers (e.g., sheep and goats), expanding the climate-smart market.

Most critically, the market development led by NBA and Buffalo Ridge Cattle Company will be strengthened by offering a certification, which will be recognized as a standard in the beef and bison industries. This project establishes a comprehensive platform verifying ranchers and farmers who are committed to CSA practices that sequester carbon, add biodiversity, improve water quality, and provide wildlife and pollinator habitat, resulting in positive impact well beyond an individual producer's property. These certifications are key to lasting success of this project, and over the next five years, supply chains and consumers will be made aware of their options to purchase beef and bison products raised in a climate-friendly manner.

As the CSA commodity market expands, the AdoptAg tool will use cutting-edge artificial intelligence modeling algorithms and MMRV data to identify producers and land areas that 1) maximize CSA impact for GHG reduction and carbon sequestration, 2) determine the probability of success based on climate, social, and economic factors, and 3) have compounding landscape-scale effects for regional level improvements to enhance the environmental, economic, and cultural vibrance of rural agricultural communities. This is another means to help maximize market potential beyond the life of this project.

Industry-specific GHG assessments have put a spotlight on animal agriculture. Beef and bison have a unique symbiotic relationship with grasslands and provide an untapped resource for making substantial strides in reducing the environmental impact of animal agriculture while leveraging the biodiversity benefits of grazing. This can be accomplished through implementation of CSA practices and ultimately premium-priced markets for CSA-produced beef and bison.

Proposed Payment Schedule. *Note these are anticipated schedules but are subject to change.*

- Salaries
  - Salary funds will distributed as specified in the Budget Narrative
- Tuition Remission
  - Paid at the end of each academic semester (May, Quarter 1; August; Quarter 3; December; Quarter 4)
- Equipment
  - All equipment purchases will be made in Year 1 (Quarter 2 of 2023)
- Travel to Producer Cooperators (in-state and out-of-state) for intensive monitoring
  - Regular travel will occur annually in Quarters 2 and 3
- Travel to Cottonwood Research Station
  - Regular travel will occur annually in Quarters 2 and 3
- Travel to Annual Project Director Meeting
  - Regular travel will occur annually; timing TBD
- Travel to Scientific Conferences and Producer Meetings
  - Conference travel will occur annually in Quarters 2 and 3
- Travel to Leadership Summit
  - Regular travel will occur annually in Quarter 4
- Materials and Supplies
  - Desiccant drier kit purchase will be made in Quarter 2 of 2023
  - Alfalfa pellet purchase will be made annually in Quarter 2

    - eID tag purchase will be made annually in Quarter 1
    - Gas flux software will be purchased in Quarter 2 of Year 1
    - Bioinformatic software purchased will be made annually in Quarter 2
    - Laboratory supplies will be purchased annually, quarter(s) TBD
- Publications
    - Publication charges will occur in Years 4 and 5; quarter TBD
- Contractual
    - GreenFeed service contract will be paid annually in Quarter 2
    - Yard Stick services will be paid annually in Quarters 2 and 3
    - Soil Microbial Community analysis will be paid annually in Quarter 4
    - Biodiversity monitoring service will be paid in Year 1 (Quarter 4) and Year 5 (Quarter 4)
    - Gas analyzer installation service will be paid in Quarter 2 of Year 1; annual service contract will be paid in Quarter 2 of Years 1-4
    - Thermal camera service will be paid in Quarter 2 of Year 1
- Stipends to Producers (Intensively Monitored Ranches)
    - Payment timeline (e.g., Quarter) is dependent upon practice and geographic location
- Subawards
    - Subawards will be managed by SDSU Grants and Contracts
    - SDSU will be requesting payment on a cost reimbursable schedule
    - Cattle and bison premiums will be paid dependent upon calving season, geographic location and/or producer marketing schedules
    - Producer practice incentive payment timeline (e.g., Quarter) is dependent upon practice and geographic location
    - Personnel payments will be made monthly
    - Leases will be paid monthly
    - Workshop and continuing education timing are TBD
    - Mapping services will be paid annually

Procedure and Details for Native American Producer Enrollment: The intent is to have Native American producers participate in this grant. Tanka Fund is the primary partner working with Native American producers.

These producers could fall into one of four categories:

a. Native American producer on private land – no Tribal permissions needed.
b. Native American producer on deeded land – no Tribal jurisdiction so no permissions needed.
c. Native American producer on allotted land – Bureau of Indian Affairs permission needed – see below.
d. Native American producer on Tribal land – permissions needed – see below.

Steps and procedures outlined by Tanka Fund for Native American producers:

a. Determine which category Native American producer represents (see above)

b. Signature with approval from Tribal agricultural and natural resources committee chair; Tribal land office director or Tribal vice president or president if the practice will be on Tribal land.
c. Signature with approval from current BIA Superintendent if practice is to be on allotted lands. If land is fractionated, approval of signatures from at least 51% of allottees must sign which will denote % ownership.
d. Submit to each signatory, conservation plan outlining practice to be implemented with map(s) attached.
e. If a producer fails to get the proper signatures needed, they cannot be part of the process.

For further reference, Tanka Fund is developing a signatory document similar to the NRCS agreement form for application for financial assistance (see *Appendix 3*). Please also refer to *Appendix 4* for the MOU between the USDA/NRCS and the BIA. If a Tribal Program wishes to participate in the grant, a Tribal resolution would be required from committee or Tribal council (depending on which regulates the agricultural and natural resources practices). Only when a Tribe itself wishes to implement an NRCS contract/practice is a Tribal approval or resolution required.

Tanka Fund will be working closely with state tribal liaisons to ensure compliance with Tribal regulations. The lead PI for Tanka Fund (Ecoffey) is a former NRCS employee and familiar with Tribal regulations and procedures.

YEAR 1

QUARTER 1:

Required Quantitative Targets – Quarter 1 (Cumulative):

- Number of producers involved: Cattle – 40; Bison – 8
- Number of underserved producers involved: Cattle – 12; Bison – 5
- Number of acres involved: Cattle – 100,000; Bison – 20,000
- Number of head involved (if applicable): Cattle – 4,000; Bison – 1,600
- Dollars provided to producers: Cattle - $869,098; Bison - $266,490
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized*
  **The CO_2eq will be zero until Q4 each year because of the biological delay of sequestration after the initiation of CPS activities (e.g., prescribed grazing code 528).*
- Number of new marketing channels established: Cattle – 8; Bison – 5
- Number of marketing channels expanded: Cattle – 3; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 1:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 Extension bulletin
  - Technical assistance: Cattle – 40 producers; Bison 8 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV site selection; eIDs procured
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – development of enrollment portal
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – development and distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick – deploy soil carbon monitoring
  - C-Lock – deliver GreenFeed equipment
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18)

Project Specific Benchmarks – Quarter 1:

- Extension/Outreach
  - 1 speaking engagement; 1 Extension bulletin
- Recruitment events - 3
- Meetings
  - In-person Team Kickoff meeting
  - Partnerships Network meeting
- Project website
  - Developed and hosted by SDSU

QUARTER 2:

Required Quantitative Targets – Quarter 2 (Cumulative):

- Number of producers involved: Cattle – 40; Bison – 8
- Number of underserved producers involved: Cattle – 12; Bison – 5
- Number of acres involved: Cattle – 100,000; Bison – 20,000
- Number of head involved (if applicable): Cattle – 4,000; Bison – 1,600
- Dollars provided to producers: Cattle - $869,098; Bison - $266,490
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 8; Bison – 5
- Number of marketing channels expanded: Cattle – 3; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 2:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 news/media story; 1 Field Day
  - Technical assistance: Cattle – 40 producers; Bison 8 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection; enrollment feedback
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - C-Lock – data collection and equipment maintenance
  - Yard Stick –soil carbon monitoring
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18)

Project Specific Benchmarks – Quarter 2:

- Extension/Outreach
  - 1 speaking engagement; 1 news/media story;1 Field Day
- Recruitment events - 2
- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

QUARTER 3:

Required Quantitative Targets – Quarter 3 (Cumulative):

- Number of producers involved: Cattle – 50; Bison – 10
- Number of underserved producers involved: Cattle – 15; Bison –7
- Number of acres involved: Cattle – 125,000; Bison – 25,000
- Number of head involved (if applicable): Cattle – 5,000; Bison – 2,000
- Dollars provided to producers: Cattle - $1,086,372; Bison - $333,113

- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres - 12,695.76 CO_2e; Bison acres - 2,248.59 CO_2e
- Number of new marketing channels established: Cattle – 8; Bison – 5
- Number of marketing channels expanded: Cattle – 3; Bison – 1
- Number of measurement tools utilized: 2 (GreenFeed; cameras)

Other Required Benchmarks – Quarter 3:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 Extension bulletin; 1 speaking engagement
  - Technical assistance: Cattle – 50 producers; Bison 10 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); cameras (n = 3); soil probes

Project Specific Benchmarks – Quarter 3:

- Extension/Outreach
  - 1 Extension Bulletin; 1 speaking engagement
- Recruitment events - 1
- Meetings
  - Team – Virtual
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 4:

Required Quantitative Targets – Quarter 4 (Cumulative):

- Number of producers involved: Cattle – 50; Bison – 10
- Number of underserved producers involved: Cattle – 15; Bison –7
- Number of acres involved: Cattle – 125,000; Bison – 25,000
- Number of head involved (if applicable): Cattle – 5,000; Bison – 2,000
- Dollars provided to producers: Cattle - $1,086,372; Bison - $333,113
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 16,374 CO_2e; Bison acres – 1,469 CO_2e
- Number of new marketing channels established: Cattle – 8; Bison – 5
- Number of marketing channels expanded: Cattle – 3; Bison – 1
- Number of measurement tools utilized: 3 (GreenFeed; cameras; soil probes)

Other Required Benchmarks – Quarter 4:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 news/media story
  - Technical assistance: Cattle – 50 producers; Bison 10 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick – soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); cameras (n = 3); soil probes

Project Specific Benchmarks – Quarter 4:

- Extension/Outreach
  - 1 news/media story
- Recruitment events - 1
- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

YEAR 1 TOTALS:

- Number of producers involved: Cattle – 50; Bison – 10
- Number of underserved producers involved: Cattle – 15; Bison –7
- Number of acres involved: Cattle – 125,000; Bison – 25,000
- Number of head involved (if applicable): Cattle – 5,000; Bison – 2,000
- Dollars provided to producers: Cattle - $1,086,372; Bison - $333,113
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 16,374 CO_2e; Bison acres – 1,469 CO_2e
  - **Note:** This weighted estimated (i.e., the proportion of acres enrolled per practice or CO_2e per acre per practice) is projected CO_2eq based on COMET-Farm number coefficients for practices (CPS Activity codes: 340, 512, 550, 528, 281, 390, and 645 via 327) described in our proposal narrative.
  - **Note:** The CO_2eq of GHG emissions from cattle (5,000 head) and bison (2,000 head) is expected to result in reduction. The literature shows (as documented in the proposal) that CPS activities are likely to, directly and indirectly, impact GHG emissions from cattle and bison; however, the estimates are currently unknown relative to specific CPS, and we cannot

make a potential unbiased projection. The current literature around enteric GHG emissions estimates has not been well documented for production scenarios. After year 1, we anticipate that MMRV data will provide the needed coefficients to begin projecting GHG reductions from enteric emissions from Year 2 forward relative to specific CPS activities.

YEAR 2

QUARTER 1:

Required Quantitative Targets – Quarter 1 (Cumulative):

- Number of producers involved: Cattle – 80; Bison – 16
- Number of underserved producers involved: Cattle – 24; Bison – 10
- Number of acres involved: Cattle – 200,000; Bison – 40,000
- Number of head involved (if applicable): Cattle – 8,000; Bison – 3,200
- Dollars provided to producers: Cattle - $1,738,195; Bison - $532,980
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 4 (GreenFeed; cameras; soil probes; flux towers)

Other Required Benchmarks – Quarter 1:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 Extension Bulletin
  - Technical assistance: Cattle producers – 80; Bison producers– 16
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection and Year 1 summaries
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – update and distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Texas A&M – GHG data analysis
  - Yard Stick – continue soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 1:

- Extension/Outreach
  - 1 Extension bulletin
- Recruitment events - 3
- Meetings
  - In-person Team meeting
  - Partnerships Network meeting

- Project website – Maintained and updated by SDSU

QUARTER 2:

Required Quantitative Targets – Quarter 2 (Cumulative):

- Number of producers involved: Cattle – 80; Bison – 16
- Number of underserved producers involved: Cattle – 24; Bison – 10
- Number of acres involved: Cattle – 200,000; Bison – 40,000
- Number of head involved (if applicable): Cattle – 8,000; Bison – 3,200
- Dollars provided to producers: Cattle - $1,738,195; Bison - $532,980
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 2:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
  - Technical assistance: Cattle producers – 80; Bison producers– 16
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – distribute materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick – continue soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 2:

- Extension/Outreach
  - 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
- Recruitment events - 2
- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

QUARTER 3:

Required Quantitative Targets – Quarter 3 (Cumulative):

- Number of producers involved: Cattle – 100; Bison – 20

- Number of underserved producers involved: Cattle – 30; Bison – 13
- Number of acres involved: Cattle – 250,000; Bison – 50,000
- Number of head involved (if applicable): Cattle – 10,000; Bison – 4,000
- Dollars provided to producers: Cattle - $2,172,744; Bison - $666,225
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres - 12,695.76 CO_2e; Bison acres - 2,248.59 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 2 (GreenFeed; cameras)

Other Required Benchmarks – Quarter 3:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 Extension Bulletin; 1 speaking engagement
  - Technical assistance: Cattle – 50 producers; Bison 10 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 3:

- Extension/Outreach
  - 1 Extension Bulletin; 1 speaking engagement
- Recruitment events - 1
- Meetings
  - Team – Virtual
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 4:

Required Quantitative Targets – Quarter 4 (Cumulative):

- Number of producers involved: Cattle – 100; Bison – 20
- Number of underserved producers involved: Cattle – 30; Bison – 13
- Number of acres involved: Cattle – 250,000; Bison – 50,000
- Number of head involved (if applicable): Cattle – 10,000; Bison – 4,000
- Dollars provided to producers: Cattle - $2,172,744; Bison - $666,225

- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 32,748 CO_2e; Bison acres – 2,938 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 3 (GreenFeed; cameras; soil probes)

Other Required Benchmarks – Quarter 4:

- Outreach, training and other technical assistance:
- Extension/Outreach: 1 news/media story
    - Technical assistance: Cattle – 50 producers; Bison 10 producers
- Other MMRV and supply chain traceability attributes:
    - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
    - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
    - SDSU – project oversight; communications; reporting and auditing
    - AdoptAg – data collection
    - Yard Stick –soil carbon monitoring
    - C-Lock – data collection and equipment maintenance
    - AgSpire, Tanka Fund – producer payments
    - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
- Climate smart technologies employed (if applicable):
    - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 4:

- Extension/Outreach
    - 1 news/media story
- Recruitment events - 1
- Meetings
    - Virtual team meeting
- Project website – Maintained and updated by SDSU

YEAR 2 TOTALS:

- Number of producers involved: Cattle – 100; Bison – 20
- Number of underserved producers involved: Cattle – 30; Bison – 13
- Number of acres involved: Cattle – 250,000; Bison – 50,000
- Number of head involved (if applicable): Cattle – 10,000; Bison – 4,000
- Dollars provided to producers: Cattle - $2,172,744; Bison - $666,225
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 32,748 CO_2e; Bison acres – 2,938 CO_2e

YEAR 3

QUARTER 1:

Required Quantitative Targets – Quarter 1 (Cumulative):

- Number of producers involved: Cattle – 120; Bison – 24
- Number of underserved producers involved: Cattle – 36; Bison – 16
- Number of acres involved: Cattle – 300,000; Bison – 60,000

- Number of head involved (if applicable): Cattle – 12,000; Bison – 4,800
- Dollars provided to producers: Cattle - $2,607,293; Bison - $799,470
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 1:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 Extension bulletin
  - Technical assistance: Cattle – 120 producers; Bison 24 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection and Year 2 summary
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – update and distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick – continue soil carbon monitoring
  - Texas A&M – GHG data analysis
  - C-Lock – data collection and equipment maintenance
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 1:

- Extension/Outreach
  - 1 speaking engagement; 1 Extension bulletin
- Recruitment events - 3
- Meetings
  - In-person Team meeting
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 2:

Required Quantitative Targets – Quarter 2 (Cumulative):

- Number of producers involved: Cattle – 120; Bison – 24
- Number of underserved producers involved: Cattle – 36; Bison – 16
- Number of acres involved: Cattle – 300,000; Bison – 60,000
- Number of head involved (if applicable): Cattle – 12,000; Bison – 4,800
- Dollars provided to producers: Cattle - $2,607,293; Bison - $799,470
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1

- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 2:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
  - Technical assistance: Cattle – 120 producers; Bison 24 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 2:

- Extension/Outreach
  - 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
- Recruitment events - 2
- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

QUARTER 3:

Required Quantitative Targets – Quarter 3 (Cumulative):

- Number of producers involved: Cattle – 150; Bison – 30
- Number of underserved producers involved: Cattle – 45; Bison – 20
- Number of acres involved: Cattle – 375,000; Bison – 75,000
- Number of head involved (if applicable): Cattle – 15,000; Bison – 6,000
- Dollars provided to producers: Cattle - $3,259,116; Bison - $999,338
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres - 12,695.76 CO_2e; Bison acres - 2,248.59 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 2 (GreenFeed; cameras)

Other Required Benchmarks – Quarter 3:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 Extension bulletin; 1 speaking engagement

    - Technical assistance: Cattle – 150 producers; Bison 30 producers
- Other MMRV and supply chain traceability attributes:
    - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
    - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
    - SDSU – project oversight; communications; reporting and auditing
    - AdoptAg – data collection
    - Yard Stick –soil carbon monitoring
    - C-Lock – data collection and equipment maintenance
    - Millborn – custom seed mixes
    - AgSpire, Tanka Fund – producer payments
    - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
    - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
    - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 3:

- Extension/Outreach
    - 1 Extension bulletin; 1 speaking engagement
- Recruitment events - 1
- Meetings
    - Team – Virtual
    - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 4:

Required Quantitative Targets – Quarter 4 (Cumulative):

- Number of producers involved: Cattle – 150; Bison – 30
- Number of underserved producers involved: Cattle – 45; Bison – 20
- Number of acres involved: Cattle – 375,000; Bison – 75,000
- Number of head involved (if applicable): Cattle – 15,000; Bison – 6,000
- Dollars provided to producers: Cattle - $3,259,116; Bison - $999,338
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 49,122 CO_2e; Bison acres – 4,408 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 3 (GreenFeed; cameras; soil probe)

Other Required Benchmarks – Quarter 4:

- Outreach, training and other technical assistance:
    - Extension/Outreach: 1 news/media story
    - Technical assistance: Cattle – 150 producers; Bison 30 producers
- Other MMRV and supply chain traceability attributes:
    - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
    - Social media reach; event and # in attendance; ads placed; Google analytics

- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 4:

- Extension/Outreach
  - 1 news/media story
- Recruitment events - 1
- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

YEAR 3 TOTALS:

- Number of producers involved: Cattle – 150; Bison – 30
- Number of underserved producers involved: Cattle – 45; Bison – 20
- Number of acres involved: Cattle – 375,000; Bison – 75,000
- Number of head involved (if applicable): Cattle – 15,000; Bison – 6,000
- Dollars provided to producers: Cattle - $3,259,116; Bison - $999,338
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 49,122 CO_2e; Bison acres – 4,408 CO_2e

YEAR 4

QUARTER 1:

Required Quantitative Targets – Quarter 1 (Cumulative):

- Number of producers involved: Cattle – 200; Bison – 40
- Number of underserved producers involved: Cattle – 60; Bison – 26
- Number of acres involved: Cattle – 500,000; Bison – 100,000
- Number of head involved (if applicable): Cattle – 20,000; Bison – 5,600
- Dollars provided to producers: Cattle - $4,345,487; Bison - $1,092,450
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 1:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 Extension bulletin
  - Technical assistance: Cattle – 200 producers; Bison 40 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained

- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection; Year 3 summary
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – update and distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick –soil carbon monitoring
  - Texas A&M – GHG data analysis
  - C-Lock – data collection and equipment maintenance
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 1:

- Extension/Outreach
  - 1 speaking engagement; 1 Extension bulletin
- Recruitment events - 3
- Meetings
  - In-person Team meeting
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 2:

Required Quantitative Targets – Quarter 2 (Cumulative):

- Number of producers involved: Cattle – 200; Bison – 40
- Number of underserved producers involved: Cattle – 60; Bison – 26
- Number of acres involved: Cattle – 500,000; Bison – 100,000
- Number of head involved (if applicable): Cattle – 20,000; Bison – 5,600
- Dollars provided to producers: Cattle - $4,345,487; Bison - $1,092,450
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 2:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
  - Technical assistance: Cattle – 200 producers; Bison 40 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection

  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 2:

- Extension/Outreach
  - 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
- Recruitment events - 2
- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

QUARTER 3:

Required Quantitative Targets – Quarter 3 (Cumulative):

- Number of producers involved: Cattle – 250; Bison – 50
- Number of underserved producers involved: Cattle – 75; Bison – 33
- Number of acres involved: Cattle – 625,000; Bison – 125,000
- Number of head involved (if applicable): Cattle – 25,000; Bison – 7,000
- Dollars provided to producers: Cattle - $5,431,859; Bison - $1,365,563
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres - 12,695.76 CO_2e; Bison acres - 2,248.59 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 2 (GreenFeed; cameras)

Other Required Benchmarks – Quarter 3:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 Extension bulletin; 1 speaking engagement
  - Technical assistance: Cattle – 250 producers; Bison 50 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities

  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 3:

- Extension/Outreach
  - 1 Extension bulletin; 1 speaking engagement
- Recruitment events - 1
- Meetings
  - Team – Virtual
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 4:

Required Quantitative Targets – Quarter 4 (Cumulative):

- Number of producers involved: Cattle – 250; Bison – 50
- Number of underserved producers involved: Cattle – 75; Bison – 33
- Number of acres involved: Cattle – 625,000; Bison – 125,000
- Number of head involved (if applicable): Cattle – 25,000; Bison – 7,000
- Dollars provided to producers: Cattle - $5,431,859; Bison - $1,365,563
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 81,869 CO_2e; Bison acres – 7,346 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 3 (GreenFeed; cameras; soil probes)

Other Required Benchmarks – Quarter 4:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 news/media story
  - Technical assistance: Cattle – 250 producers; Bison 50 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 4:

- Extension/Outreach
  - 1 news/media story
- Recruitment events - 1

- Meetings
  - Virtual team meeting
- Project website – Maintained and updated by SDSU

YEAR 4 TOTALS:

- Number of producers involved: Cattle – 250; Bison – 50
- Number of underserved producers involved: Cattle – 75; Bison – 33
- Number of acres involved: Cattle – 625,000; Bison – 125,000
- Number of head involved (if applicable): Cattle – 25,000; Bison – 7,000
- Dollars provided to producers: Cattle - $5,431,859; Bison - $1,365,563
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 81,869 CO_2e; Bison acres – 7,346 CO_2e

YEAR 5

QUARTER 1:

Required Quantitative Targets – Quarter 1 (Cumulative):

- Number of producers involved: Cattle – 240; Bison – 48
- Number of underserved producers involved: Cattle – 72; Bison – 31
- Number of acres involved: Cattle – 600,000; Bison – 120,000
- Number of head involved (if applicable): Cattle – 24,000; Bison – 5,600
- Dollars provided to producers: Cattle - $5,214,585; Bison - $1,278,942
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 1:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 Extension bulletin
  - Technical assistance: Cattle – 240 producers; Bison 48 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection; Year 4 summary
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – update and distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick –soil carbon monitoring
  - Texas A&M – GHG data analysis
  - C-Lock – data collection and equipment maintenance
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 1:

- Extension/Outreach
  - 1 speaking engagement; 1 Extension bulletin
- Recruitment events - 3
- Meetings
  - In-person Team meeting
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 2:

Required Quantitative Targets – Quarter 2 (Cumulative):

- Number of producers involved: Cattle – 240; Bison – 48
- Number of underserved producers involved: Cattle – 72; Bison – 31
- Number of acres involved: Cattle – 600,000; Bison – 120,000
- Number of head involved (if applicable): Cattle – 24,000; Bison – 5,600
- Dollars provided to producers: Cattle - $5,214,585; Bison - $1,278,942
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): 0 realized
- Number of new marketing channels established: Cattle – 2; Bison – 1
- Number of marketing channels expanded: Cattle – 1; Bison – 1
- Number of measurement tools utilized: 1 (GreenFeed)

Other Required Benchmarks – Quarter 2:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
  - Technical assistance: Cattle – 240 producers; Bison 48 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - SDSU Extension, AgSpire, Tanka Fund, NBA and Center of Excellence for Bison Studies – distribution of materials to promote enrollment, provide programmatic education
  - AgSpire and Tanka Fund – producer enrollment and technical assistance
  - Yard Stick –soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 2:

- Extension/Outreach
  - 1 speaking engagement; 1 news/media story;1 Field Day; 1 training workshop
- Recruitment events - 2
- Meetings

  - Virtual team meeting
- Project website – Maintained and updated by SDSU

QUARTER 3:

Required Quantitative Targets – Quarter 3 (Cumulative):

- Number of producers involved: Cattle – 300; Bison – 60
- Number of underserved producers involved: Cattle – 90; Bison – 39
- Number of acres involved: Cattle – 750,000; Bison – 150,000
- Number of head involved (if applicable): Cattle – 30,000; Bison – 8,000
- Dollars provided to producers: Cattle - $6,518,231; Bison - $1,598,678
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres - 12,695.76 CO_2e; Bison acres - 2,248.59 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 2 (GreenFeed; cameras)

Other Required Benchmarks – Quarter 3:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 Extension bulletin; 1 speaking engagement
  - Technical assistance: Cattle – 300 producers; Bison 60 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - SDSU – project oversight; communications; reporting and auditing
  - AdoptAg – data collection
  - Yard Stick – soil carbon monitoring
  - C-Lock – data collection and equipment maintenance
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
  - Millborn – custom seed mixes
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 3:

- Extension/Outreach
  - 1 Extension bulletin; 1 speaking engagement
- Recruitment events - 0
- Meetings
  - Team – Virtual
  - Partnerships Network meeting
- Project website – Maintained and updated by SDSU

QUARTER 4:

Required Quantitative Targets – Quarter 4 (Cumulative):

- Number of producers involved: Cattle – 300; Bison – 60

- Number of underserved producers involved: Cattle – 90; Bison – 39
- Number of acres involved: Cattle – 750,000; Bison – 150,000
- Number of head involved (if applicable): Cattle – 30,000; Bison – 8,000
- Dollars provided to producers: Cattle - $6,518,231; Bison - $1,598,678
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 98,243 CO_2e; Bison acres – 8,815 CO_2e
- Number of new marketing channels established: Cattle –3; Bison – 2
- Number of marketing channels expanded: Cattle – 2; Bison – 2
- Number of measurement tools utilized: 3 (GreenFeed; cameras; soil probe)

Other Required Benchmarks – Quarter 4:

- Outreach, training and other technical assistance:
  - Extension/Outreach: 1 news/media story
  - Technical assistance: Cattle – 300 producers; Bison 60 producers
- Other MMRV and supply chain traceability attributes:
  - MMRV sites and eID data maintained
- Other measurements of work related to marketing of commodities:
  - Social media reach; event and # in attendance; ads placed; Google analytics
- Demonstrated engagement of major partners:
  - AdoptAg – data collection and Year5/Project summaries
  - AgSpire, Tanka Fund – producer payments
  - Buffalo Ridge Cattle Co., Cold Creek Buffalo Co., NBA – market/purchase commodities
  - Yard Stick –soil carbon monitoring
  - Texas A&M – GHG data analysis
  - C-Lock – data summaries and equipment close-out (final maintenance)
  - SDSU – project oversight; communications; reporting and auditing close out grant; complete publications
  - Buffalo Ridge Cattle Co. and Cold Creek Buffalo Co. – market/purchase commodities
- Climate smart technologies employed (if applicable):
  - GreenFeed (n = 18); flux towers; soil probes; cameras

Project Specific Benchmarks – Quarter 4:

- Extension/Outreach
  - 1 news/media story
- Recruitment events – 0
- Meetings
  - Final, in-person team meeting

YEAR 5 TOTALS:

- Number of producers involved: Cattle – 300; Bison – 60
- Number of underserved producers involved: Cattle – 90; Bison – 39
- Number of acres involved: Cattle – 750,000; Bison – 150,000
- Number of head involved (if applicable): Cattle – 30,000; Bison – 8,000
- Dollars provided to producers: Cattle - $6,518,231; Bison - $1,598,678
- GHG Benefits (Metric Tons of CO_2e Reduced or Sequestered): Cattle acres – 98,243 CO_2e; Bison acres – 8,815 CO_2e

Climate-Smart Practices and Limitations (SDSU)

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

NRCS Practice Code (if applicable)	Practice Name
327	Conservation Cover
338	Prescribed Burn
340	Cover Crop Planting
381	Silvopasture
390	Riparian Herbaceous Cover
512	Forage Planting
528	Prescribed Grazing
550	Range Planting
645	Upland Wildlife Habitat Management

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

N/A

Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Version 1.0

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

Table of Contents

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."

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

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

Project Summary

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

Table 1. Project Summary elements

Data element name	Description	Frequency
Commodity type	Type of commodity(ies) incentivized by the project	Quarterly
Commodity sales	Indicates sales of the commodity(ies) related to the project occurred this quarter	Quarterly
Farms enrolled	Indicates enrollment activities occurred this quarter	Quarterly
GHG calculation methods	Methods used to calculate greenhouse gas (GHG) benefits	Quarterly
GHG cumulative calculation	Method used to calculate cumulative GHG benefits	Quarterly
Cumulative GHG benefits	Whole project estimate of total GHG (CO2e) emission reductions	Quarterly
Cumulative carbon stock	Whole project estimate of total carbon sequestration	Quarterly
Cumulative CO2 benefit	Whole project estimate of total CO2 emission reductions	Quarterly
Cumulative CH4 benefit	Whole project estimate of total CH4 emission reductions	Quarterly
Cumulative N2O benefit	Whole project estimate of total N2O emission reductions	Quarterly
Offsets produced	Amount of carbon offsets produced by project	Quarterly
Offsets sale	Name of marketplace where carbon offsets were sold	Quarterly
Offsets price	Price of carbon in offset sales	Quarterly
Insets produced	Amount of carbon insets produced by project	Quarterly
Cost of on-farm TA	Cost of on-farm technical assistance (TA) provided to producers	Quarterly
MMRV cost	Cost of measurement, monitoring, reporting, and verification (MMRV) activities	Quarterly
GHG monitoring method	Methods used by project to monitor GHG benefits (up to 5)	Quarterly
GHG reporting method	Methods used by project to report on GHG benefits (up to 5)	Quarterly
GHG verification method	Methods used to verify GHG benefits (up to 5)	Quarterly

Partner Activities

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

Table 2. Partner Activities elements

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

Marketing Activities

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

Table 3. Marketing Activities elements

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

Producer Enrollment

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

Table 4. Producer Enrollment elements

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

Field Enrollment

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

Table 5. Field Enrollment elements

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

Farm Summary

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

Table 6. Farm Summary elements

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

Field Summary

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

Table 7. Field Summary elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State or territory of field	State name	
County of field	County name	
Commodity type	Type of commodity produced from field	Quarterly
Practice type	Type of practice(s) incentivized in field (up to seven)	Quarterly
Date practice complete	Date that practice implementation is certified complete	Quarterly
Contract end date	End date of contract	Quarterly
MMRV assistance provided	Indicator that MMRV assistance is provided to field	Quarterly
Marketing assistance provided	Indicator that marketing assistance provided for commodity from field	Quarterly
Incentive per acre or head	Indicator that a per acre/head incentives is provided for the CSAF practice(s) on this field	Quarterly
Field commodity value	Value of commodity produced from field	Quarterly
Field commodity volume	Volume of commodity produced from field	Quarterly
Cost of implementation	Total cost of practice implementation in field	Quarterly
Cost coverage	Percent of total cost of implementation of practice covered by project incentives	Quarterly
Field GHG monitoring	Methods used to monitor GHG benefits in field (up to 3)	Quarterly
Field GHG reporting	Methods used to report on GHG benefits for field (up to 3)	Quarterly
Field GHG verification	Methods used to verify GHG benefits for field (up to 3)	Quarterly
Field GHG calculations	Methods used to calculate GHG benefits for field	Quarterly
Field official GHG calculation	Method used to calculate official GHG benefits for field	Quarterly
Field official GHG ER	Official estimate of total GHG emission reductions for field	Quarterly
Field official carbon stock	Official estimate of total carbon sequestration for field	Quarterly
Field official CO2 ER	Official estimate of total CO2 emission reductions for field	Quarterly
Field official CH4 ER	Official estimate of total CH4 emission reductions for field	Quarterly
Field official N2O ER	Official estimate of total N2O emission reductions for field	Quarterly
Field offsets produced	Amount of carbon offsets produced in field	Quarterly
Field insets produced	Amount of carbon insets produced in field	Quarterly
Other field measurements	Indicator that field data was collected for reasons other than GHG benefit estimation	Quarterly

GHG Benefits - Alternate Modeled

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

Table 8. GHG Benefits – Alternate Modeled elements

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

GHG Benefits - Measured

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

Table 9. GHG Benefits - Measured data elements

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

Additional Environmental Benefits

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

Table 10. Additional Environmental Benefits elements

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

Supplemental Data Submission

Project MMRV Plan

Definition of MMRV elements:

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

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

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

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

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

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

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

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

Field modeled GHG benefit reports

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

Field direct measurement results

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

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

Data Descriptions

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

Unique IDs

Project ID: Unique ID at the project level – "Award Identifying Number" shown on award documentation
Partner ID: Unique ID at the partner level – use EIN; if no EIN, a unique ID will be assigned for use in these reports
State or territory of operation: State or territory name
County of operation: Physical county name
Farm ID: Unique ID at the operation level assigned by Farm Service Agency (FSA)
Tract ID: Unique ID at the tract level assigned by FSA
Field ID: Unique ID at the field level assigned by FSA

Project Summary

Commodity type	
Data element name: Commodity type	**Reporting question:** What climate-smart commodity types are produced by this project?
Description: Type of commodity incentivized by the project. These commodities include those for whom farmers are directly receiving incentives or other types of marketing support. See full list of commodity options in Appendix B. List one commodity per row.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** FSA commodity list
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly
Commodity sales	
Data element name: Commodity sales	**Reporting question:** Did project activities result in sales this quarter of the commodity(ies) produced by this project?
Description: Indicator of sales of commodity(ies) related to project activities. If sales are reported, complete the *Marketing Activities* worksheet (Table 3) as part of the quarterly performance report.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly
Farms enrolled	
Data element name: Farms enrolled	**Reporting question:** Did the project enroll any producers or fields this quarter?
Description: Indicator that the project enrolled producers or fields. If enrollment activities occurred this quarter, complete the *Producer Enrollment* and *Field Enrollment* worksheets (Tables 4 and 5) as part of the quarterly performance report.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly
GHG calculation methods	
Data element name: GHG calculation methods	**Reporting question:** What methods is the project using to calculate GHG benefits?
Description: List the way(s) that GHG benefits are being measured and calculated by the project this quarter.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Models • Direct field measurements • Both
Logic: None – all respond	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Quarterly

GHG cumulative calculation

Data element name: GHG cumulative calculation

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

Description: List the method(s) that was used to calculate the total cumulative GHG benefits reported by the project this quarter.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Models
- Direct field measurements
- Both

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative GHG benefits

Data element name: Cumulative GHG benefits

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

Description: Total cumulative estimated greenhouse gas emission reductions from practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative carbon stock

Data element name: Cumulative carbon stock

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

Description: Estimated total cumulative change in carbon stock based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative CO2 benefit

Data element name: Cumulative CO2 benefit

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

Description: Estimated total cumulative carbon dioxide emission reductions based on practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative CH4 benefit

Data element name: Cumulative CH4 benefit

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

Description: Estimated total cumulative methane reduction based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cumulative N20 benefit

Data element name: Cumulative N2O benefit

Reporting question: What are the project's estimated total N2O emission reductions to date?

Description: Estimated total cumulative nitrous oxide reduction based on practice implementation. This is updated quarterly. If there are no updated numbers enter the same number as the previous quarter. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets produced

Data element name: Offsets produced

Reporting question: How many carbon offsets have been produced in the project?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets sale

Data element name: Offsets sale

Reporting question: To what marketplace(s) were carbon offsets sold?

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

Data type: Text

Select multiple values: NA

Measurement unit: Name

Allowed values: Text

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Offsets price

Data element name: Offsets price

Reporting question: What was the average price of carbon received for offsets?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars per metric ton

Allowed values: 0-500

Logic: Respond if >0 to 'Offsets produced'

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Insets produced

Data element name: Insets produced

Reporting question: How many carbon insets have been produced in the project?

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

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Cost of on-farm TA

Data element name: Cost of on-farm TA

Reporting question: What is the total amount that has been spent to provide on-farm TA?

Description: Total cost of any field- or practice-specific technical assistance provided by the project (by recipient or partners) to any producers. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars

Allowed values: $0-$50,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

MMRV cost

Data element name: MMRV cost

Reporting question: What is the total amount that has been spent on MMRV activities?

Description: Total cost of all MMRV activities paid for by the project (recipient or partners). MMRV components are defined as measurement (calculations or estimations of GHG emissions), monitoring (ongoing review and confirmation that the climate-smart practices have been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time), reporting (documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization), and verification (independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable). This is updated quarterly. If there are no changes, enter the same number as the previous quarter.

Data type: Decimal

Select multiple values: No

Measurement unit: Dollars

Allowed values: $0-$50,000,000

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

GHG monitoring method

Data element name: GHG monitoring 1-5

Reporting question: How did the project monitor GHG benefits?

Description: Up to the five most common forms of monitoring GHG benefits used this quarter as part of MMRV requirements. Monitoring is defined as ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time. Include up to 5 methods, based on which methods are most commonly used for this project. The worksheet provides five columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 5 GHG monitoring methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG monitoring methods as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

GHG reporting method

Data element name: GHG reporting 1-5

Reporting question: How did the project track and report implementation of practices to reduce GHG emissions?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

GHG verification method

Data element name: GHG verification method 1-5

Reporting question: How did the project verify implementation of practices to reduce GHG emissions?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Partner Activities

Unique IDs	
Partner ID	Unique Project ID for each partner

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

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

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

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

Partnership start date

Data element name: Partnership start date | **Reporting question:** When did the partnership start?

Description: Date that the partner organization and the recipient began formally partnering on the project

Data type: Date | **Select multiple values**: NA

Measurement unit: MM/DD/YYYY | **Allowed values:** 01/01/2023 – 12/31/2030

Logic: No response for recipient | **Required:** Yes

Data collection level: Partner | **Data collection frequency:** Partnership initiation

Partnership end date

Data element name: Partnership end date | **Reporting question:** When did the partnership end?

Description: Date that the partner organization and the recipient stopped formally partnering on the project

Data type: Date | **Select multiple values**: NA

Measurement unit: MM/DD/YYYY | **Allowed values:** 01/01/2023 – 12/31/2030

Logic: No response for recipient | **Required:** Yes

Data collection level: Partner | **Data collection frequency:** Partnership end quarter

New partnership

Data element name: New partnership | **Reporting question:** Is this a new partnership?

Description: A new partnership means that the recipient and the partner organization have not had a formal working relationship (under contract or on a grant) prior to the start of the project.

Data type: List | **Select multiple values**: No

Measurement unit: Category | **Allowed values:**

- Yes
- No
- I don't know

Logic: No response for recipient | **Required:** Yes

Data collection level: Partner | **Data collection frequency:** Partnership initiation

Partner total requested

Data element name: Partner total requested | **Reporting question:** What is the total amount of funding the partner has requested to date from this project?

Description: Cumulative (total) amount of funds that the partner has requested reimbursement for from the recipient from the start of the partnership to the end of the reporting quarter. For each quarter's data entry, the value must be the sum of all previous entries plus the amount of funds requested in the reporting quarter. If there are no changes, report the value from the previous quarter.

Data type: Decimal | **Select multiple values**: NA

Measurement unit: Dollars | **Allowed values:** $0-$100,000,000

Logic: No response for recipient | **Required:** Yes

Data collection level: Partner | **Data collection frequency:** Quarterly

Total match contribution

Data element name: Total match contribution

Reporting question: What is the total match value the organization has contributed to the project to date?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

Allowed values: $0-$100,000,000

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Total match incentives

Data element name: Total match incentives

Reporting question: What is the total value of match provided by this organization for producer incentives?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

Allowed values: $0-$100,000,000

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Match type

Data element name: Match type 1-3

Reporting question: What types of match contributions has the organization provided to the project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Match amount

Data element name: Match amount 1-3

Reporting question: What is the value of the match contributions the organization provided to the project?

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

Allowed values: $0-$100,000,000

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Training type provided

Data element name: Training type 1-3 provided

Reporting question: What types of training has the organization provided to project partners?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Activity by partner

Data element name: Activity 1-3 by partner

Reporting question: What types of activities has the organization provided to the project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Partner

Data collection frequency: Quarterly

Activity cost

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

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

Data type: Decimal **Select multiple values**: NA

Measurement unit: Dollars **Allowed values:** $0-$100,000,000

Logic: None – all respond **Required:** Yes

Data collection level: Partner **Data collection frequency:** Quarterly

Products supplied

Data element name: Products supplied **Reporting question:** What products or supplies were provided to enrolled fields?

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

Data type: Text **Select multiple values**: NA

Measurement unit: Name **Allowed values:** Text

Logic: None – all respond **Required:** Yes

Data collection level: Partner **Data collection frequency:** Quarterly

Product source

Data element name: Product source **Reporting question:** Which companies provided the supplies?

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

Data type: Text **Select multiple values**: NA

Measurement unit: Name **Allowed values:** Text

Logic: Respond if text entered for 'Products supplied' **Required:** Yes

Data collection level: Partner **Data collection frequency:** Quarterly

Marketing Activities

Commodity type

Data element name: Commodity type

Reporting question: What type of commodity is produced by the farmers enrolled in this project?

Description: List a single commodity produced or marketed through incentives from this project. If multiple commodities are produced by the project, use additional rows of the worksheet to report each commodity. Use the FSA commodity list in Appendix B and choose the commodity from the list.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: FSA commodity list

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing channel type

Data element name: Marketing channel type

Reporting question: What type of marketing channel is used to sell this commodity?

Description: List a single type of marketing channel used to sell the commodity produced by farmers enrolled in the project. If a single commodity is marketed through multiple channels, use additional rows of the worksheet to report each combination of commodity and marketing channel. If "other" is chosen, use the additional column to enter the other marketing channel type(s) as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Agricultural marketing board
- Biorefinery
- Commodity broker
- Direct to consumer
- Direct to institution
- Direct to restaurant
- Distributor (including grain elevators)
- Food hub or cooperative
- Food processor
- Non-food byproducts processor
- Retailer
- USDA
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Number of buyers

Data element name: Number of buyers

Reporting question: How many buyers are there in this marketing channel?

Description: List the number of individual firms or buyers in this marketing channel.

Data type: Integer

Select multiple values: No

Measurement unit: Count

Allowed values: 1-500

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Names of buyers

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

Marketing channel geography

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

Value sold

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

Volume sold

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

Volume sold unit

Data element name: Volume sold unit
Reporting question: What is the unit of volume?
Description: The unit associated with the volume of the commodity sold in the marketing channel. If "other" is chosen, use the additional column to enter the appropriate unit as free text.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Bales (500 pounds)
- Bushels
- Carcass pounds
- Gallons
- Kilograms
- Linear board feet
- Liveweight pounds
- Metric tons
- Pounds
- Short tons
- Other (specify)

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

Price premium

Data element name: Price premium
Reporting question: What price premium is received for the commodity sold in this marketing channel?
Description: The price premium received for the commodity sold in this marketing channel this quarter. Price premium is the amount received above a 'business as usual' price.
Data type: Decimal
Select multiple values: No
Measurement unit: Dollars
Allowed values: $0.01-$10,000
Logic: None – all respond
Required: Yes
Data collection level: Project
Data collection frequency: Quarterly

Price premium unit

Data element name: Price premium unit
Reporting question: What is the unit for the price premium?
Description: The unit associated with the price premium for the commodity sold in the marketing channel. If "other" is chosen, use the additional column to enter the appropriate unit as free text.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Per bale (500 pounds)
- Per bushel
- Per carcass pound
- Per gallon
- Per kilogram
- Per linear board foot
- Per live pound
- Per metric ton
- Per ounce
- Per short ton
- Other (specify)

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

Price premium to producer

Data element name: Price premium to producer

Reporting question: What percent of the price premium is provided to the producer for the commodity sold in this marketing channel?

Description: The percent of the price premium provided to the producer for the commodity sold in this marketing channel this quarter. Price premium is the amount received above a 'business as usual' price.

Data type: Decimal

Select multiple values: No

Measurement unit: Percent

Allowed values: 0-100

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Product differentiation method

Data element name: Product differentiation method 1-3

Reporting question: What methods are used to differentiate climate-smart commodities in this marketing channel?

Description: Provide the methods used to differentiate the climate-smart commodity in this market channel. Product differentiation methods are ways to distinguish or differentiate the climate-smart commodity in the marketplace. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 product differentiation methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other product differentiation methods as free text.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing method

Data element name: Marketing method 1-3

Reporting question: What methods are used to market climate-smart commodities in this marketing channel?

Description: Provide the method(s) used to market this commodity in this market channel. Marketing method is the way that potential buyers of the climate-smart commodity are engaged by the project partners as the sellers or facilitators of sale. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 marketing methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other marketing methods as free text

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Marketing channel identification method

Data element name: Marketing channel identification method 1-3

Reporting question: What methods are used to generate interest in climate-smart commodities in this marketing channel?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Traceability method

Data element name: Traceability method 1-3

Reporting question: What traceability methods are used for climate-smart commodities in this channel?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Project

Data collection frequency: Quarterly

Producer Enrollment

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

Producer data change

Data element name: Producer data change

Reporting question: Is there new/updated information for a producer who is re-enrolling in the project?

Description: Indicates that there is new or updated information for a producer who had previously enrolled in the project and is re-enrolling.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Yes
- No

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Re-enrollment

Producer start date

Data element name: Producer start date

Reporting question: When did the producer enroll in the project?

Description: Date that the producer enrolled in the project by signing their first contract.

Data type: Date

Select multiple values: NA

Measurement unit: MM/DD/YYYY

Allowed values: 01/01/2023 – 12/31/2030

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

Producer name

Data element name: Producer name

Reporting question: What is the name of producer enrolled in the project?

Description: Name of the producer enrolled in the project; the name must match the name contained in the customer's Business Partner record and the Farm Operating Plan in FSA Business File for that Farm ID.

Data type: Text

Select multiple values: NA

Measurement unit: NA

Allowed values: Text

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

Underserved status

Data element name: Underserved status

Reporting question: Is this producer considered an underserved and/or a small producer?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: No

Data collection level: Producer

Data collection frequency: Initial enrollment

Total area

Data element name: Total area

Reporting question: What is the total area of the farm?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

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

Total crop area

Data element name: Total crop area	**Reporting question:** What percent of the current operation is cropland?
Description: Area of the total farm that is currently used as cropland. If a producer is enrolled in the project for multiple years, review the total crop area each time a new contract is signed and provide any necessary updates.	
Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Total livestock area

Data element name: Total livestock area	**Reporting question:** What amount of the current operation is used for livestock (by area)?
Description: Area of the total farm that is currently used for pasture, grazing, rangeland; or animal housing, feeding or milking. If a producer is enrolled in the project for multiple years, review the total livestock area each time a new contract is signed and provide any necessary updates.	
Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Total forest area

Data element name: Total forest area	**Reporting question:** What amount of the current operation is forested (by area)?
Description: Area of the total farm that is currently considered forest land use. Forest land use means that at least 10% of the land area is covered in trees that will be at least 13 feet tall when mature. If a producer is enrolled in the project for multiple years, review the total forest area each time a new contract is signed and provide any necessary updates.	
Data type: Integer	**Select multiple values:** No
Measurement unit: Acres	**Allowed values:** 0-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable

Livestock type

Data element name: Livestock type 1-3

Reporting question: What types of livestock are raised on the farm?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: Respond if 'Total livestock area' >0

Required: Yes

Data collection level: Producer

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

Livestock head

Data element name: Livestock head 1-3

Reporting question: How many livestock (by type) are on this operation?

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

Data type: Integer

Select multiple values: NA

Measurement unit: Head count

Allowed values: 1-10,000,000

Logic: Respond if 'Total livestock area' >0

Required: Yes

Data collection level: Producer

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

Organic farm

Data element name: Organic farm

Reporting question: Is any part of the farm currently USDA-certified organic or transitioning to USDA-certified organic?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: No

Data collection level: Producer

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

Organic fields

Data element name: Organic fields

Reporting question: Are any of the fields enrolled in the project currently USDA-certified organic or transitioning to USDA-certified organic?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Organic operation'

Required: No

Data collection level: Producer

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

Producer motivation

Data element name: Producer motivation

Reporting question: Which of the following was the primary reason the producer enrolled in this project?

Description: Primary operator's motivation for enrolling in the project.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

Producer outreach

Data element name: Producer outreach 1-3

Reporting question: What types of outreach were provided to producers?

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

Data type: List

Select multiple values: Yes

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF experience

Data element name: CSAF experience

Reporting question: Has the primary operator implemented CSAF practices in the last ten years anywhere on the farm?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF federal funds

Data element name: CSAF federal funds

Reporting question: Were prior CSAF practices supported by federal funds?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF state or local funds

Data element name: CSAF state or local funds

Reporting question: Were prior CSAF practices supported by state or local funds?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF nonprofit funds

Data element name: CSAF nonprofit funds

Reporting question: Were CSAF practices supported by nonprofit funds?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'

Required: Yes

Data collection level: Producer

Data collection frequency: Initial enrollment

CSAF market incentives

Data element name: CSAF market incentives	**Reporting question:** Were CSAF practices supported by market incentives?
Description: If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by market incentives? Market incentives include premiums paid by a commodity buyer or by a consumer based on branding or labeling as a climate-smart commodity.	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'CSAF experience'	**Required:** Yes
Data collection level: Producer	**Data collection frequency:** Initial enrollment

Field Enrollment

Unique IDs

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

Field data change

Data element name: Field data change

Reporting question: Has the information previously reported for this field changed?

Description: Indicator that this entry is being used to report any relevant changes, such as a new Field ID number or changes to the commodity or practice combinations, for a field that has previously been enrolled in the project.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Re-enrollment

Contract start date

Data element name: Contract start date

Reporting question: What is the start date of the contract with the producer that includes this field?

Description: Start date listed on the contract that enrolls the field in the project.

Data type: Date

Select multiple values: NA

Measurement unit: MM/DD/YYYY

Allowed values: 01/01/2023 – 12/31/2030

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Total field area

Data element name: Total field area

Reporting question: What is the total size of the enrolled field?

Description: Total size of the field enrolled with the project.

Data type: Decimal

Select multiple values: No

Measurement unit: Acres

Allowed values: .01-500

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Commodity category

Data element name: Commodity category	**Reporting question:** What category of commodity(ies) is (are) produced from this field?
Description: Category of commodity(ies) produced in field enrolled in the project	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Crops • Livestock • Trees • Crops and livestock • Crops and trees • Livestock and trees • Crops, livestock and trees
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Commodity type

Data element name: Commodity type	**Reporting question:** What type of commodity is produced from this field?
Description: Type of commodity produced in field enrolled in the project. See full list in Appendix B. The worksheet provides a drop-down list of the allowed values. Choose the appropriate value. Enter additional commodities in subsequent rows.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** FSA commodity list
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Baseline yield

Data element name: Baseline yield	**Reporting question:** What is the baseline yield of this field?
Description: Average annual yield of commodity in 3 years prior to enrollment. Provide yield for the enrolled field if possible. If not at field level, provide average annual yield for the specific commodity for the operation.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Production per acre or animal	**Allowed values:** .01-100,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Baseline yield unit

Data element name: Baseline yield unit

Reporting question: Baseline yield unit

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Baseline yield location

Data element name: Baseline yield location

Reporting question: For what portion of the operation is the baseline yield being reported?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Enrolled field
- Whole operation
- Other (specify)

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field land use

Data element name: Field land use

Reporting question: What is this field's land use history?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field irrigated

Data element name: Field irrigated	**Reporting question:** What is this field's irrigation history?
Description: Prior to enrollment, what was the most common irrigation practice on this field the past 3 years?	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • No irrigation • Center pivot • Drip-subsurface • Drip-surface • Flood/border • Furrow/ditch • Lateral/linear sprinklers • Micro-sprinklers • Seepage • Side roll • Solid set sprinklers • Supplemental • Surface • Traveling gun/towline • Wheel Line • Other
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

Field tillage

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

Practice past extent - farm

Data element name: Practice past extent - farm

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

Description: Prior to enrollment, on what portion of the whole farm had this (these) CSAF practice(s) ever been used by the primary operator? If multiple practices are planned to be implemented in this field, enter the value that best corresponds to the farm's prior experience with the planned set of practices.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Field any CSAF practice

Data element name: Field any CSAF practice

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

Description: Prior to enrollment, have any CSAF practice or practices been used in this field in the past 3 years? CSAF practices are included in a list in Appendix A.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice past use - this field

Data element name: Practice past use - this field

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

Description: Prior to enrollment, had this (these) CSAF practice(s) been used in this field in the in the past 3 years? Enter yes if all of the practices had been used previously in this field; enter some if multiple practices are being implemented and one or more, but not all of the practices had been used previously in this field; and enter no if none of the practices had been used previously in this field.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Initial enrollment

Practice type

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

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

Data type: List **Select multiple values:** No

Measurement unit: Category **Allowed values:** See list in Appendix A

Logic: None – all respond **Required:** Yes

Data collection level: Field **Data collection frequency:** Initial enrollment

Practice standard

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

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

Data type: List **Select multiple values:** No

Measurement unit: Category **Allowed values:**

- NRCS
- Other (specify)

Logic: None – all respond **Required:** Yes

Data collection level: Field **Data collection frequency:** Initial enrollment

Planned practice implementation year

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

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

Data type: Integer **Select multiple values:** No

Measurement unit: Year **Allowed values:** 2022-2030

Logic: None – all respond **Required:** Yes

Data collection level: Field **Data collection frequency:** Initial enrollment

Practice extent

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

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

Data type: Decimal **Select multiple values:** No

Measurement unit: Extent **Allowed values:** .01-100,000

Logic: None – all respond **Required:** Yes

Data collection level: Field **Data collection frequency:** Initial enrollment

Practice extent unit	
Data element name: Practice 1-7 extent unit	**Reporting question:** Unit for extent of practice implementation
Description: Unit for extent of practice implementation on the field specified by the contract. If "other" is chosen, use the additional column to enter the appropriate unit.	
Data type: List	**Select multiple values:** No
Measurement unit: Category	**Allowed values:** • Acres • Head of livestock • Linear feet • Square feet • Other (specify)
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Initial enrollment

CSAF Practice Sub-questions

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

Farm Summary

Unique IDs

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

Producer TA received

Data element name: Producer TA received 1-3

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Producer incentive amount

Data element name: Producer incentive amount

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

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

Data type: Decimal

Select multiple values: NA

Measurement unit: Dollars

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

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Incentive reason

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

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

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

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

Logic: None – all respond **Required:** Yes

Data collection level: Producer **Data collection frequency:** Quarterly

Incentive structure

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

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

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

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

Logic: None – all respond **Required:** Yes

Data collection level: Producer **Data collection frequency:** Quarterly

Incentive type

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

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

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

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

Logic: None – all respond **Required:** Yes

Data collection level: Producer **Data collection frequency:** Quarterly

Payment on enrollment

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

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

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond **Required:** Yes

Data collection level: Producer **Data collection frequency:** Quarterly

Payment on implementation

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

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

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

- Full payment
- Partial payment
- No payment

Logic: None – all respond **Required:** Yes

Data collection level: Producer **Data collection frequency:** Quarterly

Payment on harvest

Data element name: Payment on harvest

Reporting question: What portion of the financial incentive is provided to the producer upon harvest of the commodity?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on MMRV

Data element name: Payment on MMRV

Reporting question: What portion of the financial incentive is provided to the producer upon completing MMRV requirements?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Payment on sale

Data element name: Payment on sale

Reporting question: What portion of the financial incentive is provided to producer upon sale of the commodity?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Full payment
- Partial payment
- No payment

Logic: None – all respond

Required: Yes

Data collection level: Producer

Data collection frequency: Quarterly

Field Summary

Unique IDs

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

Commodity type

Data element name: Commodity type

Reporting question: What type of commodity is produced from this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: FSA commodity list

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Practice type

Data element name: Field practice type 1-7

Reporting question: What CSAF practice is being implemented in this field through the project?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: See list in Appendix A

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Date practice complete

Data element name: Date practice complete

Reporting question: When did the project certify CSAF practice implementation as complete?

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

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

Allowed values: 01/01/2023 – 12/31/2030

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Contract end date

Data element name: Contract end date
Reporting question: Contract end date
Description: End date listed on the contract that enrolls the field in the project. If contract end date changes, submit updated end date during the next quarter's reporting.
Data type: Date
Select multiple values: No
Measurement unit: MM/DD/YYYY
Allowed values: 01/01/2023 – 12/31/2030
Logic: None – all respond
Required: Yes
Data collection level: Field
Data collection frequency: Quarterly

MMRV assistance provided

Data element name: MMRV assistance provided
Reporting question: Was MMRV assistance provided?
Description: Was any MMRV assistance provided to the primary operator for this field? MMRV assistance includes in-field support for the use of technologies, consultation on data collection and input, and other support related to MMRV. MMRV is defined a measurement (calculations or estimations of GHG emissions), monitoring (ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time), reporting (documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization), and verification (independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable).
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Yes
- No
- I don't know

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

Marketing assistance provided

Data element name: Marketing assistance provided
Reporting question: Was marketing assistance provided?
Description: Was any marketing assistance provided to the primary operator for the commodity(ies) produced from this field? Marketing assistance includes guaranteeing the sale of the commodity(ies), providing a platform for the sale of the commodity(ies), providing a label, branding, or other support related to marketing.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Yes
- No
- I don't know

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

Incentive per acre or head

Data element name: Incentive per acre or head
Reporting question: Is this field receiving a per-acre or per-head incentive?
Description: Is this field receiving an incentive payment to implement a specific CSAF practice or set of practices on a per-acre or per-head (livestock) basis?
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Yes
- No
- I don't know

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

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

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

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

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

Cost unit

Data element name: Cost unit

Reporting question: What is the unit for cost?

Description: The unit associated with the cost of implementing CSAF practices in the field. If "other" is chosen, enter the appropriate value in the additional column.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Cost coverage

Data element name: Cost coverage

Reporting question: What percent of the practice cost is covered by the incentive?

Description: Estimated proportion of total annual cost of implementing the practice(s) that is covered by project incentives.

Data type: Integer

Select multiple values: No

Measurement unit: Percent

Allowed values: 0-100

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG monitoring

Data element name: Field GHG monitoring 1-3

Reporting question: How were GHG impacts monitored in this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG reporting

Data element name: Field GHG reporting 1-3

Reporting question: How were GHG benefits reported for this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG verification

Data element name: Field GHG verification 1-3

Reporting question: How was implementation of practices to reduce GHG emissions verified for this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field GHG calculations

Data element name: Field GHG calculations

Reporting question: What methods are used to calculate GHG benefits in this field?

Description: List the method(s) used to calculate GHG benefits in this field. If yes to direct physical measurements, submit result reports (see *Supplemental Data Submission – Field direct GHG measurement results*).

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Models
- Direct field measurements
- Both

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official GHG calculation

Data element name: Field official GHG calculation

Reporting question: What method was used to calculate the official GHG benefits in this field?

Description: List the method used to calculate the official GHG benefits in this field that are reported as part of the project's aggregate impact.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:
- Models
- Direct field measurements

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official GHG ER

Data element name: Field official GHG emission reductions

Reporting question: What are the estimated total GHG emission reductions (CO2eq) in this field?

Description: Estimated greenhouse gas emission reductions from practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official carbon stock

Data element name: Field official carbon stock

Reporting question: How much carbon has been sequestered in this field?

Description: Estimated total change in carbon stock based on practice implementation in this field. This data element can be reported in any quarter and is cumulative for the year. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official CO2 ER

Data element name: Field official CO2 emission reductions

Reporting question: What are the estimated total CO2 emission reductions in this field?

Description: Estimated total carbon dioxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official CH4 ER

Data element name: Field official CH4 emission reductions

Reporting question: What are the estimated total CH4 emission reductions in this field?

Description: Estimated total methane emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field official N20 ER

Data element name: Field official N2O emission reductions

Reporting question: What are the estimated total N2O emission reductions in this field?

Description: Estimated total nitrous oxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field offsets produced

Data element name: Field offsets produced

Reporting question: How many carbon offsets have been produced in this field?

Description: Total carbon offsets produced in the field during the quarter (not cumulative). Offsets are defined as having been verified and certified using an accepted standard and sold into the carbon marketplace.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Field insets produced

Data element name: Field insets produced	**Reporting question:** How many carbon insets have been produced in this field?
Description: Total carbon insets produced in the field during the quarter (not cumulative). Insets are defined as having been verified and certified using an accepted standard and accounted for within Scope 3 emissions for a firm.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

Other field measurement

Data element name: Other field measurement	**Reporting question:** Were data collected from the field for reasons other than GHG benefit estimation?
Description: Direct physical measurements or data collection taken in the field for any reason other than GHG benefits estimation. These reasons could include calibration of GHG estimation tools or models, tracking other environmental benefits (see Field environmental benefits report), and other reasons. If yes, submit corresponding reports (see *Supplemental data submission - Field direct measurement results*).	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: None – all respond	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Quarterly

GHG Benefits - Alternate Modeled

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

Commodity type

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

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

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:** FSA commodity list

Logic: None – all respond **Required:** If project calculates GHG benefits using multiple methods

Data collection level: Field **Data collection frequency:** Annual

Practice type

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

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

Data type: List **Select multiple values:** No

Measurement unit: Category **Allowed values:** See list in Appendix A

Logic: None – all respond **Required:** If project calculates GHG benefits using multiple methods

Data collection level: Field **Data collection frequency:** Annual

GHG model

Data element name: GHG model **Reporting question:** What model was used for alternate calculation of GHG benefits?

Description: Select the model used for the alternate calculation of the field's GHG benefits.

Data type: List **Select multiple values:** No

Measurement unit: Category **Allowed values:**

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

Logic: None – all respond **Required:** If project calculates GHG benefits using multiple methods

Data collection level: Field **Data collection frequency:** Annual

Model start date

Data element name: Model start date	**Reporting question:** For what time period are the GHG benefits modeled (model start date)?
Description: Date that the model parameters begin.	
Data type: Date	**Select multiple values**: NA
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/1950 – 12/31/2030
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Model end date

Data element name: Model end date	**Reporting question:** For what time period are the GHG benefits modeled (model end date)?
Description: Date that the model parameters end.	
Data type: Date	**Select multiple values**: NA
Measurement unit: MM/DD/YYYY	**Allowed values:** 01/01/2023– 12/31/2030
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total GHG benefits estimated

Data element name: Total GHG benefits estimated	**Reporting question:** What is the alternate estimate of the field's total GHG emission reductions?
Description: Total greenhouse gas emission reductions from practice implementation in the field estimated using an alternate model.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total carbon stock estimated

Data element name: Total carbon stock estimated	**Reporting question:** What is the alternate estimate of how much carbon has the field has sequestered?
Description: Total change in carbon stock based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total CO2 estimated

Data element name: Total CO2 estimated	**Reporting question:** What is the alternate estimate of the field's total CO2 emission reductions?
Description: Total carbon dioxide emission reductions based on practice implementation in the field estimated using an alternate model.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CO_2	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total CH4 estimated

Data element name: Total CH4 estimated	**Reporting question:** What is the alternate estimate of the field's total CH4 emission reductions?
Description: Total methane emission reductions based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons CH4 reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

Total field N20 estimated

Data element name: Total N2O estimated	**Reporting question:** What is the alternate estimate of the field's total N2O emission reductions?
Description: Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.	
Data type: Decimal	**Select multiple values**: No
Measurement unit: Metric tons N2O reduced in CO_2eq	**Allowed values:** 0-10,000,000
Logic: None – all respond	**Required:** If project calculates GHG benefits using multiple methods
Data collection level: Field	**Data collection frequency:** Annual

GHG Benefits - Measured

Unique IDs

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

GHG measurement method

Data element name: GHG measurement method

Reporting question: What measurement method is used to calculate GHG benefits?

Description: Field-based measurement method used to calculate GHG benefits. If "other" is chosen, enter the appropriate value as free text in the additional column.

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: None – all respond

Required: If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field

Data collection level: Field

Data collection frequency: Annual

Lab name

Data element name: Lab name

Reporting question: What is the name of the lab that processed the measurement samples?

Description: Name of entity that received data and conducted analysis of samples.

Data type: Text

Select multiple values: No

Measurement unit: NA

Allowed values: Free text

Logic: None – all respond

Required: If applicable

Data collection level: Field

Data collection frequency: Annual

Measurement start date

Data element name: Measurement start date

Reporting question: On what date did the measurement start?

Description: Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements first began.

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

Allowed values: 01/01/2023 – 12/31/2030

Logic: None – all respond

Required: If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field

Data collection level: Field

Data collection frequency: Annual

Measurement end date

Data element name: Measurement end date

Reporting question: On what date did the measurement end?

Description: Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements were completed.

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

Allowed values: 01/01/2023– 12/31/2030

Logic: None – all respond

Required: If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field

Data collection level: Field

Data collection frequency: Annual

Total CO2 reduction calculated

Data element name: Total CO2 reduction calculated

Reporting question: What are the total measured CO2 emission reductions?

Description: Total annual CO2 emission reductions based on practice implementation in the field calculated from in-field measurements.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2

Allowed values: 0-10,000,000

Logic: None – all respond

Required: If a project takes carbon stock or greenhouse gas emission measurements in this field

Data collection level: Field

Data collection frequency: Annual

Total field carbon stock measured

Data element name: Total field carbon stock measured

Reporting question: What is the total amount of carbon sequestered based on repeat measurements in this field?

Description: Change in carbon stock based on practice implementation in the field calculated from repeat soil sampling in this field. (Results for initial field soil samples should be reported in the 'Soil sample result' and 'Measurement type" columns.) Conversion rate is one ton of carbon = 3.67 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: If a project conducts soil samples or takes carbon stock measurements in this field

Data collection level: Field

Data collection frequency: Annual

Total CH4 reduction calculated

Data element name: Total CH4 reduction calculated

Reporting question: What are the total measured CH4 emission reductions?

Description: Total annual methane emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of CH_4 = 25 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CH4 reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field

Data collection level: Field

Data collection frequency: Annual

Total N20 reduction calculated

Data element name: Total N2O reduction calculated

Reporting question: What are the total measured N2O emission reductions?

Description: Total annual nitrous oxide emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of N_2O = 298 tons of CO_2eq.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons N2O reduced in CO_2eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field

Data collection level: Field

Data collection frequency: Annual

Soil sample result

Data element name: Soil sample result

Reporting question: What is the numeric result from this soil sample?

Description: Results of measurement(s) taken to determine the carbon stock of a soil (the tons of carbon found in a specified volume of soil).

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: .00001-100,000

Logic: None – all respond

Required: If a project conducts soil samples in this field

Data collection level: Field

Data collection frequency: Annual

Soil sample result unit

Data element name: Soil sample result unit **Reporting question:** What is unit for the soil sample result?

Description: Unit for the corresponding soil sample result. The worksheet provides a drop-down list of choices for this data element. If "other" is chosen, use the additional column to enter the appropriate yield unit as free text.

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

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

Logic: None – all respond **Required:** If a project conducts soil samples in this field

Data collection level: Field **Data collection frequency:** Annual

Measurement type

Data element name: Measurement type **Reporting question:** What type of analysis was conducted for this soil sample?

Description: Type of soil analysis conducted. The worksheet provides a drop-down list of choices for this data element. If "other" is chosen, use the additional column to enter the appropriate yield unit as free text.

Data type: List **Select multiple values**: No

Measurement unit: Category **Allowed values:**

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

Logic: None – all respond **Required:** If a project conducts soil samples in this field

Data collection level: Field **Data collection frequency:** Annual

Additional Environmental Benefits

Unique IDs

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

Environmental benefits

Data element name: Environmental benefits

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss

Data element name: Reduction in nitrogen loss

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss amount

Data element name: Reduction in nitrogen loss amount

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

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

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Reduction in nitrogen loss amount unit

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

Reduction in nitrogen loss purpose

Data element name: Reduction in nitrogen loss purpose	**Reporting question:** What is the purpose of tracking reduction in nitrogen losses?
Description: Purpose of tracking reduction in nitrogen losses in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Reduction in nitrogen loss'	**Required:** Yes
Data collection level: Project	**Data collection frequency:** Annual

Reduction in phosphorus loss

Data element name: Reduction in phosphorus loss	**Reporting question:** Are reductions in phosphorus losses being tracked in the field?
Description: Tracking of reductions in phosphorus losses in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in phosphorus loss amount

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

Reduction in phosphorus loss amount unit

Data element name: Reduction in phosphorus loss amount unit	**Reporting question:** What is the unit for the reduction in phosphorus losses measured in the field?
Description: Unit for the total amount of reduction in phosphorus losses that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Kilograms • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Reduction in phosphorus loss'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduction in phosphorus loss purpose

Data element name: Reduction in phosphorus loss purpose	**Reporting question:** What is the purpose of tracking reductions in phosphorus losses?
Description: Purpose of tracking reduction in phosphorus losses in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Reduction in phosphorus loss'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality

Data element name: Other water quality	**Reporting question:** Are other water quality metrics being tracked in the field?
Description: Project tracking of other water quality metrics in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality type

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

Other water quality amount

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

Other water quality amount unit

Data element name: Other water quality amount unit	**Reporting question:** What is the unit for the reduction in other water quality metrics measured in the field?
Description: Unit for the total amount of reduction in other water quality metrics that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Degrees F • Kilograms • Kilograms per liter • Metric tons • Pounds • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Other water quality purpose

Data element name: Other water quality purpose	**Reporting question:** What is the purpose of tracking other water quality benefits?
Description: Purpose of tracking other water quality benefits in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Other water quality'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Water quantity

Data element name: Water quantity	**Reporting question:** Is water conservation being tracked in the field?
Description: Tracking of water conservation or reduction in use in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Water quantity amount

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

Water quantity amount unit

Data element name: Water quantity amount unit	**Reporting question:** What is the unit for the amount of water conservation measured in the field?
Description: Unit for the total amount of water conservation or reduced use that is measured and reported in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Acre-feet • Cubic feet • Other (specify)
Logic: Respond if yes to 'Water quantity'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Water quantity purpose

Data element name: Water quantity purpose	**Reporting question:** What is the purpose of tracking water conservation?
Description: Purpose of tracking water conservation or reductions in water use in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Water quantity'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion

Data element name: Reduced erosion	**Reporting question:** Is reduced soil erosion being tracked in the field?
Description: Tracking of reduced soil erosion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Yes • No • I don't know
Logic: Respond if yes to 'Environmental benefits'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion amount

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

Reduced erosion amount unit

Data element name: Reduced erosion unit	**Reporting question:** What is the unit for the amount of erosion reduction measured?
Description: Unit for the total amount of erosion reduction from enrolled fields that is measured and reported by the project. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Tons • Other (specify)
Logic: Respond if yes to 'Reduced erosion'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

Reduced erosion purpose

Data element name: Reduced erosion purpose
Reporting question: What is the purpose of tracking reduced erosion in the field?
Description: Purpose of tracking reduced erosion the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

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

Reduced energy use

Data element name: Reduced energy use
Reporting question: Is reduced energy use being tracked in the field?
Description: Tracking of reduced energy use in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Yes
- No
- I don't know

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

Reduced energy use amount

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

Reduced energy use amount unit

Data element name: Reduced energy use unit
Reporting question: What is the unit for the energy use reduction measured in the field?
Description: Unit for the total amount of energy use reduction that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Kilowatt hours
- Other (specify)

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

Reduced energy use purpose

Data element name: Reduced energy use purpose
Reporting question: What is the purpose of tracking reduced energy use in the field?
Description: Purpose of tracking reduced energy use in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Commodity marketing
- Producing insets
- Producing offsets
- I don't know
- Other (specify)

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

Avoided land conversion

Data element name: Avoided land conversion
Reporting question: Is avoided land conversion being tracked in the field?
Description: Tracking of avoided land conversion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits. Land conservation means land use changing from agricultural uses to non-agricultural uses.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Yes
- No
- I don't know

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

Avoided land conversion amount

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

Avoided land conversion amount unit

Data element name: Avoided land conversion unit
Reporting question: What is the unit for the amount of avoided land conversion measured in the field?
Description: Unit for the total amount of avoided land conversion that is measured in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.
Data type: List
Select multiple values: No
Measurement unit: Category
Allowed values:
- Acres
- Other (specify)

Logic: Respond if yes to 'Avoided land conversion'
Required: Yes
Data collection level: Field
Data collection frequency: Annual

Avoided land conversion purpose

Data element name: Avoided land conversion purpose

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

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

Logic: Respond if yes to 'Avoided land conversion'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Improved wildlife habitat

Data element name: Improved wildlife habitat

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: Respond if yes to 'Environmental benefits'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Improved wildlife habitat amount

Data element name: Improved wildlife habitat amount

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

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

Data type: Decimal

Select multiple values: No

Measurement unit: Amount

Allowed values: 0-1,000,000

Logic: Respond if yes to 'Improved wildlife habitat'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Improved wildlife habitat amount unit

Data element name: Improved wildlife habitat unit

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Acres
- Linear feet
- Other (specify)

Logic: Respond if yes to 'Improved wildlife habitat'

Required: Yes

Data collection level: Field

Data collection frequency: Annual

Improved wildlife habitat purpose	
Data element name: Improved wildlife habitat purpose	**Reporting question:** What is the purpose of tracking improved wildlife habitat in the field?
Description: Purpose of tracking improved wildlife habitat in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.	
Data type: List	**Select multiple values**: No
Measurement unit: Category	**Allowed values:** • Commodity marketing • Producing insets • Producing offsets • I don't know • Other (specify)
Logic: Respond if yes to 'Improved wildlife habitat'	**Required:** Yes
Data collection level: Field	**Data collection frequency:** Annual

CSAF Practice Sub-questions

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

Table 11. Follow-on questions for select CSAF practices

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

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

Conservation Crop Rotation (CPS 328)	Conservation crop type	Brassica Broadleaf Cool season Grass Legume Warm season
	Change implemented	Added perennial crop Reduced fallow period Both
	Conservation crop rotation tillage type	Conventional (plow, chisel, disk) No-till, direct seed Reduced till Strip till None Other (specify)
	Total conservation crop rotation length in days	1-120
Contour Buffer Strips (CPS 332)	Strip width (feet)	1-100
	Species category	Grasses Forbs Mix
Cover Crop (CPS 340)	Species category (select most common/extensive type if using more than one)	Brassicas Forbs Grasses Legume Non-legume broadleaves
	Cover crop planned management	Grazing Haying Termination
	Cover crop termination method	Burning Herbicide application Incorporation Mowing Rolling/crimping Winter kill/frost
Critical Area Planting (CPS 342)	Species category (select most common/extensive type if using more than one)	Grass Grass legume/forb mix Herbaceous woody mix Perennial or reseeding Shrubs Trees
Feed Management (CPS 592)	Crude protein (percent)	0-100
	Fat (percent)	0-100
	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
Field Border (CPS 386)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs

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

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

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

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

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

Appendix A: Climate-smart Agriculture and Forestry Practices

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

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

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

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

Appendix B: Commodity List

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

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

LIVESTOCK
ALPACAS
BEEF COWS
BEEFALO
BUFFALO OR BISON
CHICKENS (BROILERS)
CHICKENS (LAYERS)
DAIRY COWS
DEER
DUCKS
ELK
EMUS
EQUINE
GEESE
GOATS
HONEYBEES
LLAMAS
REINDEER
SHEEP
SWINE
TURKEYS

Partnerships for Climate-Smart Commodities Additional Specific Terms and Conditions February 2023

I. Overarching Statement

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

II. Eligibility and Highly Erodible Lands and Wetlands Compliance

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

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

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

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

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

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

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

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

III. Other Environmental and Cultural Resources Reviews

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

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

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

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

IV. Producer Benefits

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

V. Producer Data Protection and Disclosure

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

VI. Other Data and Reporting Requirements

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

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

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

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

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

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

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

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

measurement/quantification, monitoring, reporting, tracking, and verification of associated greenhouse gas benefits and marketing of climate-smart commodities).
- Synthesis of outcomes; and
- Opportunities for USDA and others to inform future approaches to generating new and expanded markets for climate-smart commodities.

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

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

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

VII. Competition and Anti-Competitive Practices

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

VIII. Suspension and Disbarment

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

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

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

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

2) An audit that meets the requirements contained in 2 CFR 200 subpart F.

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

X. Non-Disparagement

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