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:
NR233A750004G019		Upon final signature - 03/30/2028	Grant Agreement

5. Agency (Name and Address)	6. Recipient Organization (Name and Address)
USDA Partnerships for Climate-Smart Commodities c/o FPAC-BC Grants and Agreements Division 1400 Independence Ave SW, Room 3236 Washington, DC 20250 Direct all correspondence to FPAC.BC.GAD@usda.gov	RODALE INSTITUTE 611 SIEGFRIEDALE RD KUTZTOWN PA 19530-9749 UEI Number / DUNS Number: C88CX91FZXM7 / 137767851 EIN: (b)(4); (b)(6)

7. NRCS Program Contact	8. NRCS Administrative Contact	9. Recipient Program Contact	10. Recipient Administrative Contact
Name: TANYA CULBERT	Name: CHARLENE WINTERS	Name: Kristie Wendelberger	Name: Stacy Glackin
(b)(6)			

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

15. Project Title/ Description: Expands markets for climate-smart vegetables in GA, NC, PA, SC and VA and supports farmer implementation and monitoring of climate-smart practices.

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

17. Select Funding Type

Select funding type:	☒ Federal	☒ Non-Federal
Original funds total	$25,000,000.00	$904,276.00
Additional funds total	$0.00	$0.00
Grand total	$25,000,000.00	$904,276.00

18. Approved Budget

Personnel	$1,727,407.63	Fringe Benefits	$556,162.83
Travel	$358,787.66	Equipment	$1,020,000.00
Supplies	$88,211.90	Contractual	$875,400.00
Construction	$0.00	Other	$20,374,029.98
Total Direct Cost	$24,316,813.00	Total Indirect Cost	$683,187.00
		Total Non-Federal Funds	$904,276.00
		Total Federal Funds Awarded	$25,000,000.00
		Total Approved Budget	$25,904,276.00

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

Name and Title of Authorized Government Representative Katina Hanson, Acting Senior Advisor for Climate-Smart Commodities	Signature KATINA HANSON Digitally signed by KATINA HANSON Date: 2023.03.31 23:41:30 -04'00'	Date
Name and Title of Authorized Recipient Representative Jeffrey W. Moyer Chief Executive Officer	Signature	Date 3/30/2023

NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, 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 Rodale Institute (Recipient), is to build markets for climate-smart commodities and invest in America's climate-smart producers to strengthen U.S. rural and agricultural communities.

Objectives

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

Budget Narrative

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

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

TOTAL BUDGET $ 25,904,276.00

PERSONNEL $1,517,133
FRINGE BENEFITS $488,462
TRAVEL $315,113
EQUIPMENT $1,020,000
SUPPLIES $77,474
CONTRACTUAL $875,400
CONSTRUCTION (usually n/a) $0
OTHER $20,023,231 (includes PRODUCER INCENTIVES $5,758,500)
TOTAL DIRECT COSTS $24,316,813
INDIRECT COSTS $683,187
Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate of 13.86 percent and a base of total direct costs less capital expenditures, passthrough funds, and the portion of subawards in excess of the first $25,000.
TOTAL FEDERAL FUNDS $25,000,000

PERSONNEL $69,694
FRINGE BENEFITS $23,696
TRAVEL $0
EQUIPMENT $0
SUPPLIES $0
CONTRACTUAL $0
CONSTRUCTION (usually n/a) $0
OTHER $789,892
PRODUCER INCENTIVES $0
TOTAL DIRECT COSTS $883,282
INDIRECT COSTS $20,994
Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate of 13.86 percent and a base of total direct costs less capital expenditures, passthrough funds, and the portion of subawards in excess of the first $25,000.
TOTAL NON-FEDERAL FUNDS $904,276

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.

Ensure that equipment purchased with Federal funds is 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.

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)
- SF429 Real Property Status Report: Due within 120 calendar days of the period of performance end date. Send as an attachment to email to FPAC.BC.GAD@usda.gov.

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

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Rodale Institute
Project Narrative
Project Title: Quantifying the Potential to Reduce Greenhouse Gas Emissions and Increase Carbon Sequestration by Growing and Marketing Climate-Smart Commodities in the Southern Piedmont

i. Executive Summary of Pilot Project

We propose to change the Southern Piedmont vegetable farming community to embrace, practice, and buy climate-smart (CS) commodities through an interdisciplinary full system approach. Designing and implementing a new large-scale system of agriculture such as CS agriculture (CSA) takes an interdisciplinary approach that includes farmer adoption, understanding economic and social barriers to adoption, market and consumer buy-in, new technology to help ease the work and burden on the farmers, and the science to back up these changes. One must integrate these approaches to successfully co-design an innovative farming system that meets farmers' needs while gaining consumer buy-in [1–4]. The broad framework of our proposed project reduces greenhouse gas (GHG) emissions, increases C-sequestration, enhances farmer economic opportunities, supports and assists farmer adoption of CSA, and educates local farmers and consumers while developing technologies that will make this work scalable across the country. **This work will *contribute to each goal* of this funding opportunity:**

1) **increased acreage of vegetable CSA** (1,000 acres from 100 on-farm trials, up to 600 farmers and their acreage from the marketing/consumer buy-in work, and more as the project scales up) while incentivizing farmers through **over $8 million in cash incentives** to explore CSA practices.
2) **assess GHG emissions, C-sequestration, and soil quality benefits** of "business as usual" compared to using cover crops in vegetable rotation in *organic and conventional* systems in southern soils that cross a temperature gradient.
3) **validate and improve COMET-Planner for southern soils** – *work that has not been done.*
4) provide an **economic assessment** of utilizing cover crops **in organic and conventional** systems resulting in recommendations to support farmers in the first 5 years of adopting CSA.
5) **assess social barriers for farmers to adopt** CSA and identify tailored strategies to break down those barriers.
6) **develop and verify a rapid, inexpensive tool**, Farm2Facts (USDA AFRI 2014-68006-21857), to evaluate how CS farms and farmers markets are and to educate farmers on how to improve their farming practices and market value-added CS commodities.
7) **increase markets for CS commodities** by evaluating consumer decision-making and buy-in around value-added CS products.
8) quantify consumer behavioral change over time during an education campaign that **leverages early adopter farmers** and consumer surveys **identifying marketing opportunities for CS commodities**.
9) **scale up using models to estimate the potential emissions impact** if the study practices were adopted in other locations with similar climates and cropping regimes.
10) ensure longevity of our project by **modeling suitability of the cropping regimes we propose under the future climate scenarios** we anticipate in each region.
11) **create an underserved farmer equipment grant.** As a part of this grant, Rodale Institute will purchase 10 no-till seed drills, 5 roller crimpers, and 5 no-till transplanters. Rodale Institute will create a competitive grant program for underserved farmers allowing them to apply to

receive one of the above pieces of farm equipment needed to transition to CSA. The grant will continue until the equipment is gone.
(e.g., no-till drills, roller crimpers, and transplanters) that will be provided for free to participating farmers during the project and post-project, rented for the cost of maintenance to farmers trying CSA practices.

A. Contact Information

Dr. Kristie Wendelberger, Rodale Institute Southeast Organic Center, 7850 Rico Road, Chattahoochee Hills, GA 30268, T: 305-281-3061, E: kristie.wendelberger@rodaleinstitute.org

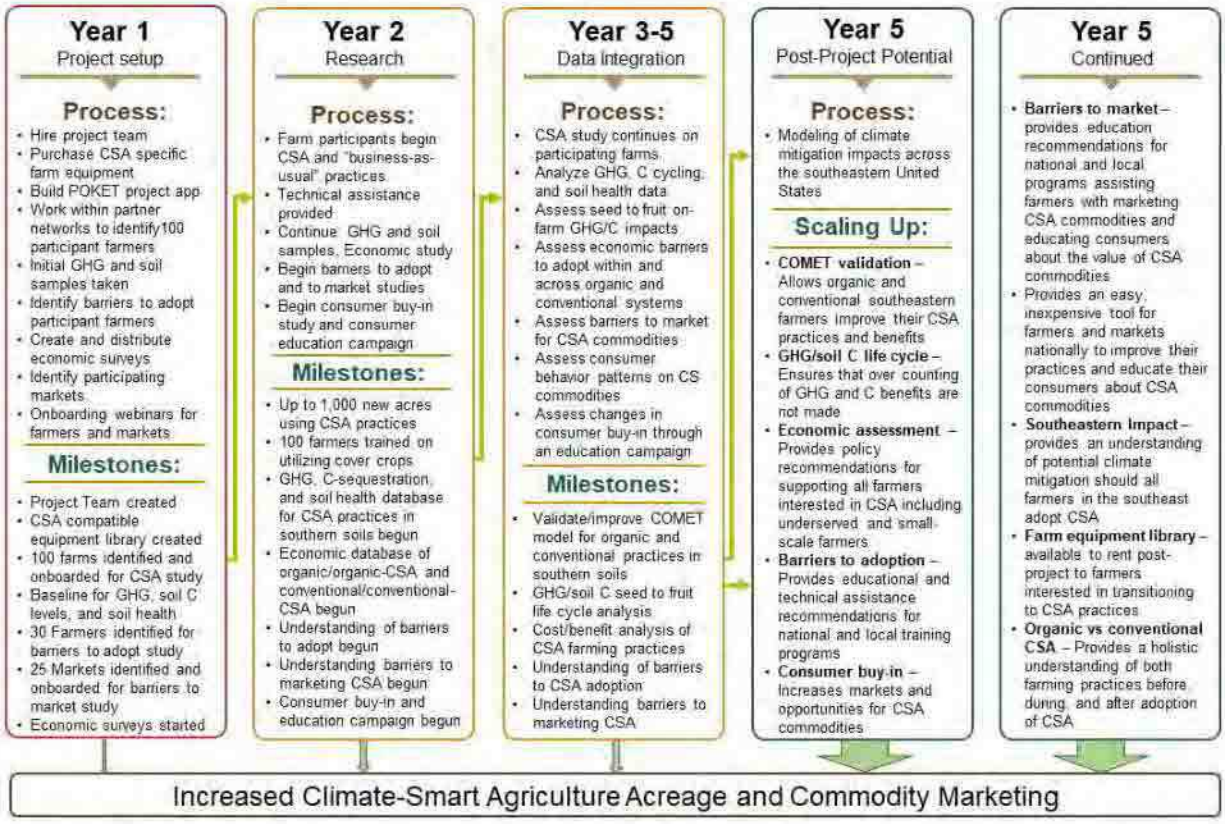

Figure 1. Timeline of project activities, milestones, deliverables, and post-project potential

B. List of Project Partners

Project PI: Dr. Kristie Wendelberger, Rodale Institute Southeast Organic Center

GHG and Soil Carbon Partners
Dr. Eri Saikawa, Emory University
Dr. Debjani Sihi, Emory University
Dr. Sudhagar Mani, University of Georgia
Dr. Cristine Morgan, Soil Health Institute
Dr. Sindhu Jagadamma, University of Tennessee

Technical Support and Extension Partners
Dr. Biswanath Dari, North Carolina Agricultural and Technical State University
Suzanne Girdner, Georgia Organics
Karen McSwain, Carolina Farm Stewardship Association
Brent Wills, Virginia Association for Biological

Dr. Rongzhong Ye, Clemson University

Economics Partner
Dr. Rod Rejesus, North Carolina State University

Marketing Partners
Dr. Alfonso Morales, University of Wisconsin - Madison
Dr. Edna Ledesma, University of Wisconsin - Madison

Farming

Social Science Partners
Dr. Jennifer Thompson, University of Georgia
Dr. Jessica Holt, University of Georgia

Scaling-Up Partner
Dr. Emily Burchfield, Emory University

C. List of Underserved/minority-focused project partners

Dr. Biswanath Dari, North Carolina Agricultural and Technical State University
Mark Dempsey, Carolina Farm Stewardship Association
Suzanne Girdner, Georgia Organics
Karen McSwain, Carolina Farm Stewardship Association
Dr. Christine Morgan, Soil Health Institute
Brent Wills, Virginia Biological Farm Association
Dr. Rongzhong Ye, Clemson University
Dr. Alfonso Morales, University of Wisconsin - Madison
Dr. Edna Ledesma, University of Wisconsin - Madison

D. Compelling need for the project

Globally, the agricultural sector is estimated to contribute approximately 23-28% of the total anthropogenic greenhouse gas (GHG) emissions (5-5.8 Gt CO_2e/yr) [5–7]. Among those, soils are a major source of GHG emissions [6,8]. Mitigating these emissions by improving farming practices is crucial to the future health and resilience of U.S. food systems.

The research on the impacts of differing agricultural practices on GHG emissions, soil quality, and C-sequestration are conflicting [5,9–14]. Cover crops are effective in preventing soil erosion, improving soil organic carbon (C), and suppressing weeds [15,16] but are still underutilized by growers across the county including in Southern Piedmont. Soil quality benefits of cover crops are well documented [17], but there are mixed results for the impact of cover cropping on GHG emissions, C-sequestration, and their comparative impacts across varying climatic scenarios [15]. Studies have found that, while cover crops can increase soil C and fertility, they are also net sources of CO_2 [13,14] and N_2O emissions [18]. Additionally, soil water content and temperature, nutrient availability, and pH largely drive soil GHG fluxes [19]. Differing farming systems (e.g. organic versus conventional), the types and amount of inputs [5,9–11], and ways that farmers terminate cover crops [20] can also influence the net GHG emission and C-sequestration. There is a need for a comprehensive study documenting net impacts of cover crops and termination method on GHG emissions in contrasting farming systems, i.e., conventional vs organic across, the U.S. southeast.

Our proposed project quantifies GHG emissions, C-sequestration, and soil quality impacts in vegetable organic and conventional systems with and without cover crops on farms growing in similar agricultural zones but crossing a thermal gradient within the Southern Piedmont. The soils in this area are composed of soil series that are known to respond largely similar to management practice but straddle a mesic to thermic gradient [21]. The mesic mean annual soil temperature is 8-15°C and the thermic mean annual soil temperature is 15-22°C. Because of

the differences in soil temperature, it is expected that GHG fluxes, soil health, and potentially C-sequestration will behave differently on either side of the thermal gradient.

The southeastern U.S. is an important piece of the U.S. farming community and can contribute to mitigating large-scale climate and soil quality issues. The Southeast is also the third largest exporter of U.S. agricultural goods and harbors over 400,000 operators within its farming community. Sixty-five percent of farmers in the region are between one and 99 acres (American Lending, 2021). There are six Major Land Resource Areas (MLRA) in the southeast. The Southern Piedmont (MLRA 136) is 64,395 square miles and has nearly 3.7 million acres of farmland most is in pasture or forage production, but organic and conventional vegetable production has grown rapidly over the last 20 years [23]. Southern Piedmont crosses four of the top 10 states with the most Black farmers in the United States (Georgia, South Carolina, North Carolina, and Virginia); there are over 9,300 Black farmers across these states. In particular, Black farmers make up 7% and 4% of South Carolina and Georgia farmers, respectively [24]. Therefore, **empowering southeastern farmers to grow CS empowers underserved farmers.**

COMET-Planner has been proposed as an easy-to-use tool for farmers to evaluate soil GHG emissions and C-sequestration potentials on their farms. However, an **intensive evaluation of the COMET model in Southern Piedmont soils has yet to be done.** ***Our proposed project will provide the data needed to validate and improve COMET-Planner for southeastern farmers.*** To support farmers to make changes to their farming practices that will result in the most benefits from COMET-Planner, we need to understand farmers' social and economic barriers to adoption and work to deconstruct those barriers.

As a part of the GHG and C-sequestration study, we will be working with organic and conventional farmers who have never utilized cover crops. A recent comprehensive review of the quantitative literature on the adoption of conservation agricultural practices identified several variables positively associated with adoption, including stewardship motivation and other environmental values, prior use of other conservation practices, and awareness of conservation programs [25,26]. **Not enough attention has focused on cultural and structural barriers to behavior change** (i.e., farmer identity in relation to community norms and social networks, federal policies and market/incentive structures that disincentivize farmers to adopt CSA). **Conservation decisions are often the result of farmers' efforts to navigate "contrasting tensions" --including economic motivations, risk perceptions, and personal/social identity** [27]. To assess farmers' motivations and barriers to change, and support farmers' efforts over the life of the project, we will conduct a longitudinal series of focus groups with a subset of participating farmers. **The information learned will be used to improve education and technical assistance to support farmers transitioning to CSA.**

The economic impact of transitioning to CSA practices, especially soil quality-related practices, is still not well understood [28] and **is often cited as one of the largest barriers to adopting CS practices** [25]. Because of lower production costs and higher market prices, organic systems have often been shown to economically outperform conventional systems [29]. To understand the economic barriers for organic and conventional farmers to transition to CSA, **we will collect economic data from farmers adopting cover crops alongside "business as usual" practices (no cover crop) on their farms.**

To obtain the holistic approach needed to successfully transform the Southern Piedmont farming community to CSA[4], **we will develop and expand markets for CS commodities throughout the region**. We developed a team of marketing partnerships within the proposal partners to investigate ways to better market CS commodities. That team consists of the University

of Wisconsin, Georgia Organics, Carolina Farm Stewardship Association, Virginia Association of Biological Farmers, one of the members of the University of Georgia team (Dr. Jessica Holt, an Agricultural Communications expert), and Rodale Institute. Each member of the CS Marketing Team has expertise in working with producers, vendors, farmers markets, agricultural communications, and marketing. This team is poised to investigate the issues Southern Piedmont farmers face in marketing CS commodities and coming up with tangible solutions farmers and the USDA can work with to increase the value-added market of CS commodities.

Between 1994 and 2019, the number of farmers markets in the U.S. grew by nearly 400% [30]. Farmers markets play an important role in shaping the community in terms of entertainment, food access, and information sharing [31]. We will use **farmers markets throughout the Southern Piedmont as vehicles to market CS commodities, increase consumer and farmer buy-in, track CS commodities from producer to consumer, and learn about ways to influence consumer behavior toward purchasing more CS commodities.**

Consumer buy-in is essential to change a farming system. Targeted communications by state governments show promise for increasing consumer buy-in of locally produced food [26]. Such work can be amplified to target CSA by assessing existing farmer and consumer habits and the constellation of attitudes contributing to those habits [26,32]. **We will embark on a consumer education campaign** that ***highlights and promotes early adopter CS farmers*** in the region **and evaluates consumer decision-making around value-added CS commodities** and quantifies changes over time.

Specifically, we will perform the below research initiatives:

1: Verify and improve upon Farm2Facts (F2F) **an inexpensive, easy to use data collection application/toolkit that provides graphic savvy printouts for farmers which can be used at market to advertise, educate, market, and track CS commodities through the supply chain.** Farm2Facts was developed by the University of Wisconsin (UW) (USDA AFRI deployed through USDA subcontracts and direct to organizations) for market managers to assess and improve integral dynamics of their markets and has helped over 100 market managers and organizations across the U.S. Recently, the **F2F creators developed and added ecosystems measures to the tool which can track the amount of CS commodities produced and sold by individual farmers at market through farmer entered data;** however this tool has never been validated in the south. To verify and improve the F2F Ecosystems Services Tool and evaluate the degree of CS farm practices occurring on participating farms with scientifically rigorous, empirical GHG emissions/soil health data, the farmers participating in the greenhouse gas and soil health portion of this proposal will also participate annually in F2F. Once the Ecosystems Services Tool is validated, farmers can fill out the questionnaire providing data on ecosystem services and amount and type of CS commodities produced and sold at market. We can then connect ecosystem services related to CSA at individual farms to farmers markets, estimate regional environmental impacts, track CS commodities moving through the supply chain, and help farmers justify the value-added costs of their CS commodities.

2: Assess the impact that F2F and other marketing strategies has on consumer decision making. **This will allow us to provide scientifically rigorous data to the USDA on ways to influence consumer decision making and increase the sales of CS commodities throughout the food chain**, not just at farmers markets. This work will be done in three parts.

2.1. We will request participating farmers and market managers to fill out and display their F2F printout at market. F2F uses a citizen science approach to research. Market managers are the PIs for their markets and manage data collection on site. The F2F team trains the

managers on how to utilize the survey instruments, and they then take that knowledge to their markets to ensure that each assessment is conducted correctly and on a timely basis. The market managers provide the CS team with data on which farmers are participating in the project, proof of participation, and ensuring that the farmers receive their participation incentives. Additionally, they coordinate with the CS marketing team on the quarterly consumer surveys, data collection, and advertising discussed below. The participation of the market managers is essential; therefore, it is needed to incentivize each manager via financial payment to ensure they participate and take their role seriously throughout the life of the project.

The Market managers and farmers will fill out F2F on the below schedule:

- Market managers: market profile completed once a year reporting on market attendance, special programing or incentives as needed.
- Market organizations: organization profile completed once a year to enable organizations to compare member markets.
- Vendors: vendor application completed once a year, sales reported periodically, bi-weekly, weekly, monthly, quarterly or annually depending on the vendor's capacity and the number of markets they attend.
- Producers: Ecosystems Services reported once a year

2.2 Create a comprehensive marketing strategy to ***highlight and promote CS farmers*** and the products they provide using a suite of communication and marketing materials, research-based messages, farmer-captured content, and data from F2F. As a component of this project and integrated into the digital media procurement app, Pocket, farmers will be asked to provide photographs and short video clips, highlighting their ***CS farming practices***. These photos and videos will provide a unique perspective from the farmers' viewpoint and provide daily insight into what farmers go through on a day-to-day basis to farm with CS practices. The grant team will gather additional media and farmer input by traveling to the farms and speaking with the farmers in person. These compiled media data will be used to create content for research and marketing campaigns on social media. The social media advertisements will be linked to the Rodale Institute CS Web Portal, the F2F website, and project partner social media channels, creating an opportunity to ***engage consumers in CS farming*** and the farmers who choose to grow products using practices to increase carbon sequestration and reduce greenhouse gas emission.

2.3. Perform periodic consumer surveys at participating farmers markets to identify potential marketing opportunities for farmers to leverage products grown with CS practices. Using a consumer panel in years 1, 3, and 5, we will test and measure consumers' knowledge, preference, and behaviors related to purchasing products grown with a greater focus on reducing greenhouse gas emission. These surveys will utilize experimental design methods to test labeling and engagement of marketing CS grown products. These surveys will be analyzed to understand consumer preference and potential market opportunities for farmers.

Marketing Strategy Research Post Project Potential: Lessons learned from this work will be relevant to communities throughout the southeast and beyond giving us the tools we need to

market and sell CS commodities at the value-added costs they deserve. This work will help us better understand the influence of each educational initiative type (social media, newsletter, farmer printout displayed on table, word of mouth, etc.), language and imagery used, and the impact they have on consumer decision making. We will translate lessons learned from this process, from both the farmer and consumer perspective, into educational materials we can deploy broadly using partner social media, the local press of a community, our CS partner communication channels, and the Rodale Institute CS web portal. This suite of communication materials will be available and shared widely with practitioners, Extension specialists, industry, and academia to highlight the benefits, opportunities, and potential for adopting CS practices that reduce greenhouse emissions and increase carbon sequestration.

The economic potential of selling CS commodities in southern markets is not known. These findings will be leveraged to identify economic impacts, potential return on investment for farmers, and identify potential markets for future farming generations. In collaboration with the economic experts within the team, these surveys will identify consumers' willingness to pay, choice analysis, and long-term marketability of CS commodities allowing us to determine the economic potential for farmers selling CS commodities in the southeast. **This work will also be used to create recommendations for the USDA and farm bill on marketing strategies to help integrate the public into understanding the value of purchasing CS commodities.** Further, **few studies have integrated COMET-Planner as a tool for *social* change;** we will cross-validate Farm2Facts with COMET-Planner to ensure farmers are obtaining the highest level of data from the application for their productions and CS commodity marketing.

To understand the potential for CSA to improve GHG emissions in the Southern Piedmont, **we will scale up our field-scale estimates from 100 farms to the entire Southern Piedmont region. We will identify** locations with similar seasonal climate, soil characteristics, and cropping regimes **and estimate the potential GHG emissions impacts if the CS practices we study were adopted in these similar regions.**

Climate change will alter the yields and resultant cultivation geographies of many major US crops [33–35]. Given that agricultural adaptation to climate change will be *necessary* and *inevitable* across much of the Southern Piedmont, our ultimate goal is to identify adaptive pathways towards future cropping regimes that are *both* climate-resilient *and* CS. **We will assess how predicted climate scenarios in our study region will affect future crop suitability to ensure the cropping regimes we are proposing are, in fact, suited to the future climate we anticipate in the region.**

Questions addressed and deliverables developed through this proposed work

QUESTION 1: What is the potential for organic versus conventional vegetable farms to lower GHG emissions, increase C-sequestration, and improve overall soil quality throughout the Southern Piedmont and across a thermal gradient using CSA practices?

DELIVERABLE 1: Quantify GHG mitigation and C-sequestration potential in organic and conventional vegetable farming practices throughout the Southern Piedmont.

QUESTION 2: What is the C and GHG life cycle from seed to fruit on organic versus conventional vegetable farms with and without cover crops in Southern Piedmont soils?

DELIVERABLE 2: Perform a life cycle assessment of farmlands that produces CS vegetable commodities from real-time farm input data, type of commodity harvested, and other resources across organic and conventional systems with and without cover crops.

QUESTION 3: Does the COMET-Planner accurately determine GHG emissions on farms in

Southern Piedmont soils and across a climatic gradient? If not, how can we improve it? **This work is novel because it will, for the first time, calibrate and validate the COMET-Planner for the Southern Piedmont** across a thermocline.

DELIVERABLE 3: Verify and improve on the COMET model in Southern Piedmont soils that cross a climatic gradient.

QUESTION 4: What are the social and cultural barriers to organic and conventional vegetable farmers transitioning to CSA?

DELIVERABLE 4: Scientifically sound recommendations to improve educational and technical assistance programs to help eliminate barriers for organic and conventional farmers in the first five years of adopting CSA.

QUESTION 5: What are the economic barriers to organic and conventional vegetable farmers adopting CSA?

DELIVERABLE 5: Scientifically sound recommendations for ways to financially support organic and conventional farmers in the first five years of adopting CSA.

QUESTION 6: Can Farm2Facts be used by farmers as an inexpensive, easy tool to help them track and market CS commodities?

DELIVERABLE 6: An easy-to-use, inexpensive tool that farmers can use to improve their CS farming practices and marketability. Farm2Facts will provide farmers with printable graphic savvy factsheets about their operation to help consumer decision making when purchasing CS commodities at market.

QUESTION 7: What are consumer preferences and knowledge related to CSA and what factors motivate them to purchase CS commodities?

DELIVERABLE 7: Research-based recommendations on methods to impact consumer behavior toward the purchase of CS commodities.

QUESTION 8: What are the potential impacts on GHG emissions should all farmers within the Southern Piedmont adopt cover crops on their farms?

DELIVERABLE 8: A GHG emissions impact model predicting the decrease in GHG emissions should all farms in the region with similar cropping regimes adopt cover crops. This model can be used in educational pieces related to farmer buy-in to CSA.

QUESTION 9: Will current locations where CSA crops are grown in the Southeastern United States continue to be suitable into the future given predictions for the changing climate?

DELIVERABLE 9: A crop occurrence model predicting where CS crops are grown in the Southeastern U.S. based on historical biophysical predictors and whether those locations will be suitable for those crops given changes in climate predicted through 2100.

E. Approach to minimize transaction costs associated with project activities

We are minimizing transaction costs in several ways: **1)** We will use POKET, https://www.poketapp.com/, application for data management, surveys, farmer communication, and an overall strategy to streamline the work for both the project team and the farmers. Farmers will use POKET to request technical assistance, set up site visits, track items accomplished, and calculate incentives owed eliminating the need for more administrative help than we are already requesting. **2)** We are requesting the purchase of a Field Day Kit that will prevent the need to repeatedly rent popup tents, tables, and chairs for 8 field days. These items can also be used at other project-related marketing and educational events. **3)** We have arranged to store the CS related farm equipment at partner locations eliminating storage fees. **4)** We are requesting funds to rent a truck for the Rodale Institute climate-smart team. The team will be required to travel frequently, renting

one vehicle will reduce car rentals and airline tickets. These offset savings are found in travel for field days, farm visits, yearly partner meetings, highlighted farmer video production, and farmer onboarding video production. **5)** Because the farmers participating in the Farm2Facts verification and consumer buy-in campaign will only be completing Farm2Facts and no other data collection activities, it is not economically sound to include them with an account in POKET, so we will pay the Market Managers a nominal fee of $500/year to track which farmer completed Farm2Facts and needs their $50 incentive.

F. Approach to reduce producer barriers to implementing CSA practices for the purpose of marketing CS commodities

To understand the social barriers to adopt CSA practices in the first five years of adoption, we will identify 50 organic and 50 conventional farmers (100 total) within the Southern Piedmont who have not used cover crops in the past or have not used cover crops on project specific lands and have them employ this CSA practice on up to 5 acres for 4 years. We will identify a subset of organic/conventional farmers (15 from each group; 30 total), representing the entire study area, to participate in annual focus groups to characterize their motivations, barriers, and experiences adopting CSA practices. Focus groups with organic growers will be held separate from conventional growers to identify issues/strategies/ opportunities unique to each group, and how they change within and across groups over time.

Economic barriers to adopting CSA practices will be assessed by collecting economic data on all 100 farms participating in the study and utilizing cover crops for the first time compared to "business as usual" (e.g., no cover crops). We will conduct partial budgeting analysis and econometric/statistical approaches to determine how revenues and costs differ between the CSA adopters vis-a-vis non-adopters in both organic and conventional production.

To address marketing and consumer buy-in barriers for farmers adopting CSA practices, we will use Farm2Facts to validate and inform efforts to support direct market sales of CS commodities at farmers' markets. Farm2Facts provides farmers with printable fact sheets that they can display at market showing what CSA practices they use and how sustainable their farms are helping consumers understand and purchase based on the value-added efforts of CSA.

Because CS is a new term, we will use a suite of communication and marketing materials, research-based messages, farmer-captured content, and data from Farm2Facts to leverage and create a comprehensive marketing strategy *highlighting and promoting CS farmers* and their commodities. As a component of this project and integrated into the digital media procurement app, POKET, farmers will be asked to provide photographs and short video clips, highlighting their CSA practices. These photos and videos will be used to create content we will share and use in social media marketing campaigns. These advertisements will be linked to the Rodale CS Web Portal and Farm2Facts website, creating an opportunity to engage consumers in CSA and the farmers who choose to employ practices to reduce GHG emissions and increase C-sequestration.

Further, we will also utilize consumer surveys to identify potential marketing opportunities for farmers to leverage CS commodities. Using a consumer panel in years 1, 3, and 5, we will test and measure consumers' knowledge, preferences, and behaviors related to purchasing products grown with a greater focus on reducing GHG emissions. **These surveys will utilize experimental design methods to test labeling and engagement of marketing CS commodities** and analyzed to understand consumer preferences and potential market opportunities for farmers. In collaboration with the economic experts within the team, these surveys will identify consumers' willingness to pay, choice analysis, and the long-term marketability of CS labeled products. The findings from these surveys will be critical to include in the educational materials created to encourage farmers within this project and beyond to recognize the market potential for their CS commodities.

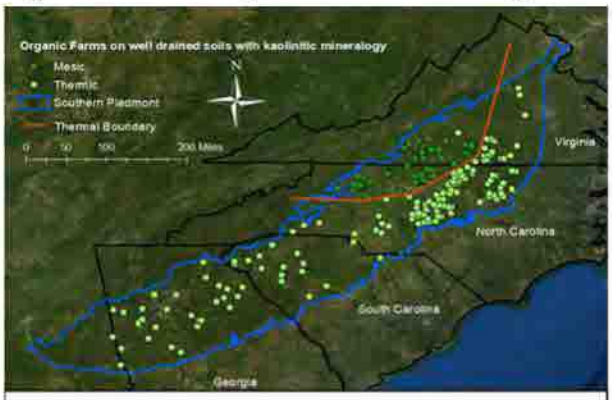

Figure 2. Map of the Southern Piedmont outlined in blue. The orange line marks the boundary between the mesic and thermic soils. Dark green points indicate organic farms on mesic soils. Light green dots indicate organic farms on thermic soils.

Marketing Strategy Research Post Project Potential: Lessons learned from this work will be relevant to communities throughout the southeast and beyond giving us the tools we need to market and sell CS commodities at the value-added costs they deserve. This work will help us better understand the influence of each educational initiative type (social media, newsletter, farmer printout displayed on table, word of mouth, etc.), language and imagery used, and the impact they have on consumer decision making. We will translate lessons learned from this process, from both the farmer and consumer perspective, into educational materials we can deploy broadly using partner social media, the local press of a community, our CS partner communication channels, and the Rodale Institute CS web portal. This suite of communication materials will be available and shared widely with practitioners, Extension specialists, industry, and academia to highlight the benefits, opportunities, and potential for adopting CS practices that reduce greenhouse emissions and increase carbon sequestration.

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G. Geographic Focus

Organic and conventional farms and farmers' markets throughout Southern Piedmont in the Southeastern United States (Fig. 2).

H. Project management capacity of partners, including a description of existing relationship with and/or prior experience working with producers or landowners, promoting CS activities and marketing CS commodities.

Project PI: Dr. Kristie Wendelberger, Rodale Institute Southeast Organic Center: has conducted ecological and conservation research for 20 years looking at small- to large-scale impacts of anthropogenic changes to ecosystems and rare species. She has managed several multi-partner projects; deliverables include peer-reviewed publications, white papers, and public education. Rodale Institute is the leader in regenerative organic farming, has worked extensively with farmers and landowners in both research and consulting capacity for 70 years, and has an organic farming consulting team that works with farmers throughout the U.S.

GHG and Soil Carbon Partners

Dr. Eri Saikawa, Emory University: has conducted research on air pollution, GHG emissions estimates and soil contamination and has over 50 peer-reviewed publications in these areas. In addition to research grants from EPA, NIH, and Syngenta (~$4.4 million), she also has an environmental education grant and communicates research results to the public.

***Dr. Debjani Sihi, Emory University*:** has >10 years of experience in research and outreach activities related to soil quality, soil carbon, GHG emission, organic farming, and CSA practices. She has published 32 peer-reviewed publications and awarded external grants as lead PI from federal agencies (NSF, DOE) and corporate partners on these topics. Her current project on evaluating the agricultural soil carbon sequestration potential in an organic vegetable system of GA is a partnership with an award-winning farmer. She has also conducted research on the environmental impacts of long-term organic and conventional farming of basmati rice in India.

Dr. Sudhagar Mani, University of Georgia: has 20 years of research experience in sustainability assessment of food, agriculture and bioenergy systems, and development of novel technologies for circular and sustainable bioeconomy systems. He has published more than 80 refereed journal articles and more than 200 conference presentations. He has recently co-lead a project, called "Drawdown Georgia" focused on evaluating climate solutions for food and agricultural systems in the state of Georgia to achieve carbon-neutral food and agricultural systems.

Dr. Cristine Morgan, Soil Health Institute: develops and implements the scientific strategy for the Soil Health Institute. She has developed, led, and successfully implemented over $30M in research projects with multi-disciplinary investigators including projects funded by the NSF, U.S. DOE, U.S. DOA, for-profit corporations, and foundations.

Dr. Sindhu Jagadamma, University of Tennessee: has ~ 20 years of research and outreach experience in building sustainable production systems in close collaboration with producers. She focuses on soil C-sequestration and soil health. She has published more than 50 peer-reviewed publications in this area. She is currently undertaking a project, funded by USDA-NIFA, to identify the most eco-friendly way to establish organic grain production systems in Tennessee.

Dr. Rongzhong Ye, Clemson University: is a soil biogeochemist with over 10 years of research experience in carbon processes and GHG emissions in agricultural soils. He closely communicates with extension specialists of Clemson University, state, and local agencies. Dr. Ye has also worked closely with local farmers through his extension services and on-farm research.

Economics Partner

Dr. Rod Rejesus, North Carolina State University: has an active research and extension program related to agricultural economics and policy. As such, he has extensive experience managing grant-funded research and extension projects. In his capacity as an extension specialist, he has worked with extension agents, farmers, landowners, and other stakeholders to provide educational materials

on crop insurance, commodity programs, and other agricultural policies.

Social Science Partners

***Dr. Jennifer Thompson, University of Georgia*:** runs the Social Sustainability of Agriculture and Food Systems lab at the University of Georgia. Dr. Thompson has extensive experience with externally funded research focused on understanding and mitigating farmer barriers to adopting CS practices, project management, recruiting farmers, conducting focus groups, and collaborating with outreach and extension personnel to translate findings into actionable strategies.

Dr. Jessica Holt, University of Georgia: specializes in creating targeted communication and marketing strategies to engage consumers in agricultural and environmental science issues. Dr. Holt has extensive experience working with farmers, legislators, and scientists to create impactful communication materials to inform consumers about farming practices, long-term policy impacts related to food and environmental issues, and complex scientific topics.

Technical Support and Extension Partners

***Dr. Biswanath Dari, North Carolina Agricultural and Technical State University*:**
has over 10 years of experience in research, extension, and outreach activities on sustainable agriculture and soil and water quality. He has published over 25 peer-reviewed and extension publications. Working with the Nation's largest land-grant HBCU (North Carolina A&T State University), Dr. Dari is assisting underserved, minority small-scale farmers, ranchers, and landowners to overcome barriers and recruit, support, and provide technical assistance to participate in CSA practices in the southeastern U.S. Through his partnership with Cooperative Extension, Small Farm Resource and Innovation Center, NCA&T, and USDA-NRCS- Eastern National Technology Support Center, he provides credibility, and equity on CS soil programs.

Suzanne Girdner, Georgia Organics: has 11 years of project management, program design and evaluation experience in community food projects. She currently serves as the Director of Programs and strategically advises eight program staff ranging from organic certification technical assistance to business development for beginning farmers to consumer marketing campaigns and farm to school and early care education programs.

Karen McSwain, Carolina Farm Stewardship Association: has over 18 years of experience implementing programs that support the needs of farmers and agripreneurs working in the local food system. She has 10 years of experience managing technical assistance programs that support farmers adoption of conservation practices and NRCS staff to increase historically underserved farmers accessing EQIP programs.

Brent Wills, Virginia Association for Biological Farming: VABF promotes, advocates for and educates about biological and organic growing in the Commonwealth of Virginia. Brent is a farmer and has an extensive farmer network of early adopter CSA farmers to work with on the marketing and consumer education campaign.

Marketing Partners

***Dr. Alfonso Morales, University of Wisconsin - Madison*:** is a Vilas Distinguished Achievement Professor, and Chair of Planning and Landscape Architecture. He is co-creator of farm2facts.org and Co-Investigator of the NSF funded icicle.ai project deploying AI/CI tools on behalf of food systems. He has authored over 100 articles and book chapters. His work has changed policy and regulations throughout the U.S., and he has been PI or CoPI of $40m of grants and contracts.

***Dr. Edna Ledesma, University of Wisconsin - Madison*:** is Assistant Professor of Planning and Landscape Architecture and is currently the director of Farm2Facts. She manages farmer and market relationships for three USDA subcontracts involving Farm2Facts. Her work bridges food systems gaps between communities and city governments to incorporate under-represented groups.

She has award-winning publications and community-based teaching experience.

Scaling-Up Partner

Dr. Emily Burchfield, Emory University: has conducted research on agricultural adaptation, agricultural land-use, and the impacts of climate change on agriculture, and has over 20 peer-reviewed publications in these areas. She uses geospatial modeling and programming to assess the ways in which climate, soil, land-use, political-economic incentives, and farmer decision making interact to shape landscapes. She is currently participating in several USDA and NSF-funded projects modeling agricultural land-use change in response to climate shifts.

ii. Plan to pilot CS agriculture on a large scale

A. A description of CSA practices to be deployed

We will deploy a cover crop mix on organic and conventional farms that historically have not used cover crops or have not used cover crops on property in the last 5 years. We will ask the farmers to plant a winter cover crop mix of triticale and crimson clover. These are common winter cover crops in the region and provide a mix of carbon and nitrogen inputs. The conventional farms will use herbicide to terminate the cover crop. The organic farms will use a roller crimper as their termination method. Termination method will be a variable in our CS analyses. We will ensure participating farmers use the cover crops meeting NRCS standards. We will provide the seed, seeding rate, time of planting, equipment for planting, and time of termination, equipment for termination or technical assistance for terminating with herbicide depending on termination method; all steps in this process will go by NRCS Cover Crop Code 340 guidelines.

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

We will recruit a total of 100 vegetable farmers within the Southern Piedmont region for the on-farm trial: 25 organic and 25 conventional farms each on the mesic and thermic side of a soil temperature gradient (Fig. 2). We will recruit underserved, Black, and small farms as a priority for the project (See section E for recruitment details). *Each farm will transition up to 5 acres to CSA practices for a total of 500 acres for this portion of the project.*

Acreage will increase exponentially with the marketing and consumer-buy-in portion of the project. We will be working with 25 farmers' markets throughout the Southern Piedmont and their participating farmers (*possibly up to 600 farms*) during the Farm2Facts and marketing strategy development portion of the project; this portion will focus on market manager, farmer, and consumer CS education.

The farmers and farmers' markets participating in this study will be identified and recruited via the Georgia Organics (GO), Carolina Farm Stewardship Association (CFSA), Virginia Association of Biological Farming (VABF), and USDA Southern Sustainable Agriculture Research and Education (SSARE) (see letter of support), and North Carolina Agricultural and Technical State University (NCAT) networks, Rodale Institute, and The Connect Group LLC (TCG) (who will also perform technical assistance for conventional farmers). The three NGOs and NCAT are partners on this project and subcontracted for technical assistance (See letters of support). Each organization has extensive experience working closely with farmers and market managers in education, technical assistance, and outreach.

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

Technical assistance, outreach, and training are vital parts of transitioning a farming community to farm, sell, and purchase CS commodities, and continue so beyond the life of the project. The Rodale Institute Website will host a web-based CS Portal where all digital pieces

generated from this project will be stored and made available to the public including educational materials, webinars, videos, pictures, presentations, publications, factsheets, newsletters, etc.
Our education plan is as follows:
1) Technical assistance for organic farmers participating in the on-farm trials will be provided by GO (GA farms), the CFSA (SC and NC farms), and the VABF (VA farms). NCAT, Rodale Institute, and TCG will provide technical assistance to the conventional farmers. All six organizations have farmer technical assistance programs embedded in the Southern Piedmont and specialize in organic or conventional farming and marketing. Outreach to farmers will be tailored and dynamic in response to findings from focus groups conducted annually with farmers throughout project.
2) In the second year of the study, Rodale Institute, GO, CFSA, NCAT, and TCG will create webinar-based training to onboard the farmers and get them started with using cover crops.
3) In the second year of the study, the CS project team will hold four farmer field days demonstrating the new equipment, holding workshops on cleaning, maintenance, and storage, and answering farm questions.
4) Participating farmers will have POKET (our study management app) with access to farmer group chats and a technical assistance group chat where they can ask questions and get set up with on-site visits when needed throughout the life of the study.
5) In the first year of the study, we will select a technologically skilled farmer to help create an instructional webinar for those farmers utilizing POKET to onboard them and simplify learning to use the app. This work will be managed by the Rodale Institute team. Rodale has a virtual campus where they have created an online educational webinar-based learning program that has reached and educated thousands of farmers.
6) Throughout the life of the project, participating farmers and market managers will be sent push notifications via POKET to remind them of field days, focus groups, training, and other outreach events associated with the project.
7) In the first year of the study, the UW, CFSA, GO, VABF, Rodale, UGA, and TCG partners will create onboarding webinars for the market managers participating in Farm2Facts. These partners have years of experience starting up these types of research and educational platforms in new market environments.
8) Farm2Facts is an educational platform within itself. Each year a farmer or market manager performs the Farm2Facts survey, they are provided with an output that shares details on how CS the farm is and market metrics, respectively. The output then provides informational links and educational pieces based on the results of their survey helping farmers become more CS.
9) Building upon previous research efforts focused on developing dynamic communication materials, the University of Georgia (UGA), UW, Rodale Institute, and NCAT teams will translate lessons learned from both the farmer and consumer perspective into educational materials and deploy broadly using partner social media, the local community press, Rodale Institute and UGA communication channels. This suite of communication materials will be available and shared widely with practitioners, extension specialists, industry, academia, and placed on the Rodale Institute CS Web Portal to highlight the benefits, opportunities, and potential for adopting CSA.
10) The Rodale Institute will hold a total of 10 Farmer Field Days (4 year 2, 2/year in years 3-5 of the project) on a participating farm and partner locations where local farmers and stakeholders will be invited to learn about the technologies being implemented on the project, hear from the farmers and a panel of invited farmers about their successes and failures at implementing CSA on their farms.
11) There will be a total of 18 webinars featured by project partners throughout the life of the project

explaining their aspect of the project, highlighting successes, and why it is important for the creation of sustainable, climate-friendly farming communities.

12) The Rodale Institute will coordinate a biannual newsletter between partners with updates, farmer stories, and news from the CS project.

13) The Rodale Institute will run a CS session at 1 regional conference per year (years 2-5) and 1 national conference in the fifth year of the study inviting all partners to present their findings and experiences during the project.

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

We will provide $6,093,500 in non-cash and cash assistance/incentives to farmers and farmer's markets participating in various portions of the project.

Assistance to those 100 farmers participating in the GHG/soil health study, $5,831,000:

Non-Cash Incentives, $2,345,000

1) free technical assistance in implementing the CS practices, over $25,000,
2) we will provide project-related roller crimpers, no-till seed drills, and no-till transplanters as needed by the farmers worth over $420,000,
3) vegetable seed for up to 10 acres valued at $1,600,000,
4) cover crop seed up to 5 acres valued at $300,000.

Cash Incentives, $3,456,000

1) we will provide cash incentives of $1500/acre for every acre that they implement CSA across the 5 years, $3,000,000,
2) $50/year for COMET-Planner surveys to be filled out and submitted to the team, $25,000,
3) $100/year will be given to each farmer who participates in the economic analysis, $50,000,
4) inputs of $200/acre up to 5 acres valued at $300,000,
5) $100/year for 30 farmers participating in farmer focus groups, $15,000,
6) $50/year for participation in the Farm2Facts surveys, $25,000,
7) $500/ field day for those farmers who allow us to use their property for the event, $5,000,
8) $50 and $100/ farmer helping to move the CS related agricultural equipment (incentive cost dependent on distance), $36,000.

Farm2Facts uses a citizen science approach to research. Market managers are the PIs for their markets and manage data collection on site. The F2F team trains the managers on how to utilize the survey instruments, and they then take that knowledge to their markets to ensure that each assessment is conducted correctly and on a timely basis. The market managers provide the CS team with data on which farmers are participating in the project, proof of participation, and ensuring that the farmers receive their participation incentives. Additionally, they coordinate with the CS marketing team on the quarterly consumer surveys, data collection, and advertising. The participation of the market managers is essential; therefore, it is needed to incentivize each manager via payment to ensure they participate and take their role seriously throughout the life of the project.

Assistance to the 25 market managers and participating up to 500 market farmers in the marketing strategy study, $292,500:

Non-Cash Incentives, $20,000

1) Each market will be provided Farm2Facts by the project and each PI will receive a market organization account to compare metrics in each market and between market. UW match value: up to $20,000.

Cash Incentives, $272,500

1) **market** managers will receive $500/year, $62,500,
2) **mark**et farmers will receive $50/year for participating in Farm2Facts surveys, $105,000,
3) **mark**et farmers will receive $50/year for COMET-Planner surveys to be filled out and submitted to the team, **$105,000**.

We are anticipating up to 5 acres/farm to implement CSA for a total of 500 acres; however, the acreage will increase substantially with our marketing strategy study. We will have 25 markets participating, with approximately 20 vendors each for a total of 500 vendors participating who will be increasing their acreage of CSA over the course of the project. We estimate that participating farmers will receive up to $58,310 in non-cash and cash incentives across the five years plus the incentives for the market study is a total of over ***$6.1 million provided mostly to underserved and disadvantaged Southern Piedmont farmers.*** Some farmers would receive less cash incentives, some more, depending on their level of involvement in the project and the number of acres they farm using cover crops.

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

GO, CFSA, VABF, NCAT, Rodale Institute, and TCG are all experienced and active in working and recruiting underserved and small producers for research, education, and outreach projects. Additionally, Mr. Brennan Washington, 1890 Land Grant Liaison and Limited-Resource/Minority Farmer Outreach Specialist for SSARE, offered his strong support (see letter of support) and help to recruit underserved farmers. This team will work with the project management team to identify and recruit potentially 100 organic and conventional underserved and small producers for this work. In addition to the incentives described in section D, GO will provide 10, $250 farmers of color scholarships to the GO Annual Conference and Expo each year of the project, $12,500 total.

To recruit farmers markets and market farmers to the project, we will leverage the CS market partners social media accounts, personal relationships, farmer listservs, and recruitment events/presentations at local farm focused conferences. We will look for markets with as many underserved and small farmer vendors as possible. Additionally, over time, word of mouth from participating markets and market farmers is expected to grow the interest in our project and desire to participate. Onboarding of market farmers will continue throughout the life of the project. Because farmers selling at farmers markets tend to be smaller scale farmers, we anticipate the majority of the estimated 500 total farmers participating in this portion of the project to be small scale and/or underserved.

iii. Measurement/quantification, monitoring, reporting, and verification plan

A. Approach to greenhouse gas benefit quantification, including methodology approach consistent with the section titles "Quantification Requirements"

We will measure CO_2, N_2O, CH_4, and NH_3 fluxes from vegetable farms using conventional and organic methods with an eddy-covariance system. We will set up eight towers in total - four in North Carolina and four in South Carolina. For each farming system (conventional vs organic), we will have farms that will apply cover crops (CSA) and "business as usual" (no cover crops). We will set up a tower to represent these four practices in a soil group that straddles a thermal gradient in North Carolina. The South Carolina farms are the most southern and represent the thermic extent of the gradient in the Southern Piedmont.

To estimate the soil fluxes and validate the eddy-covariance method, we will also install a

set of chambers per plot at ten farms during the five-year duration of the project (two per year). Samples will be taken in between the rows of vegetables and assess differences between the practices (CSA and non-CSA). Soil GHG fluxes (carbon dioxide, methane, nitrous oxide, and ammonia) will be measured using a state-of-the-art cavity ring-down spectroscopy (CRDS) system by Picarro, Inc. (Model G2508). We will take at least one measurement over 24 hours/week/farm during the growing season and at least one measurement over 24 hours/month/farm during the winter.

We will collect soil samples from all 100 farms during the fall post-harvest (0-5; 5-15; 15-30 cm deep) in years 1 - 5. We will measure soil C and several other indicators of soil quality (e.g., aggregate stability, soil fertility, bulk density) from the collected samples. Soil C concentration, bulk density, and corresponding soil depth will be used for calculating soil C pool to quantify C-sequestration potential.

The measurements of soil C, soil quality indicators, and GHG emissions from Southern Piedmont soil across a soil temperature gradient along with their history of management practices will be used to calibrate and validate the COMET-Planner tool for both organic and conventional farms. We will further evaluate the uncertainty of GHG benefits of CSA practices from both organic and conventional farms in the Southern Piedmont by coupling a Markov-Chain Monte-Carlo Analysis with the COMET decision-support tool [36,37], *something that has yet to be done*. Verification of our regional-scale GHG benefits will be conducted using a combination of data-driven approach (e.g., life-cycle analysis) and a process-based modeling approach using the DAYCENT model embedded with the COMET-tool (section C and D). This project will evaluate the GHG benefit estimates of the Southern Piedmont under current and future climate scenarios to better produce and market CS commodities.

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

We are sampling across one Southern Piedmont soil group composed of soil series that respond similarly to management methods but cross a thermal gradient. We will identify 25 farms/mesic soils and 25 farms/thermic soils/organic and conventional systems for a total of 100 farms. Depending on farm size, ***farms will perform CSA practices on 5 acres each for a possible 500 acres; however, the marketing portion of the project will extend beyond the 100 farms to up to 600 farms increasing our acreage reached exponentially.***

All 100 participants will apply "business as usual", no cover crops, alongside cover crops, participate in an economic study which will also include items needed for the GHG/carbon life cycle analysis, participate in a marketing and education application development study, and provide yield data for both "business as usual" and CS production. The farmers will enter data through a streamlined data verification process via POKET. The barriers to marketing and consumer buy-in studies data collection will be managed through Farm2Facts and POKET.

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

We will develop a life cycle assessment modeling framework separate from COMET-Planner for each CS commodity produced to estimate the C footprint from participant farms. A data-driven modeling approach will be applied to evaluate the life cycle GHG emissions at the farm level and to identify the hot-spots along with the economic impacts both at the farm and commodity levels. Our life cycle assessment will also utilize data from the Farm2Facts platform, including farmer and market sales, and ecosystems metrics.

D. Approach to verification of greenhouse gas benefits

As mentioned briefly in section A, we will verify the GHG fluxes by using the eddy covariance method, combined with flux measurements on the ground. In the twelve eddy covariance towers, we hope to assess differences in GHG fluxes between the CSA and non-CSA in either conventional or organic farms. By adding ground-based measurements using automated chambers and Picarro G2508, we will be able to further verify and quantify GHG benefits from the soil. We will conduct weekly measurements on two farms per year, covering ten farms over the duration of the project to ensure the reliability of our methodology.

We will estimate the potential GHG and C-sequestration impacts of the adoption of cover crops on all organic and conventional farms across the Southern Piedmont with similar cropping regimes. By merging high resolution historical land use data [38], climate [39,40], soils [2,41,42], topography [43], and irrigation [44] with the data that we collect in our pilot project, we will construct empirical, nonparametric models of historical crop suitability [45–48] and assess the amount of GHG emissions reductions and C-sequestration that could be accomplished should all farmers in the region adopt CSA.

E. Agreement to participate in the Partnerships Network

Dr. Kristie Wendelberger, Rodale Institute and PI on this proposal, will participate in the Partnerships Network over the course of the project.

iv. Plan to develop and expand markets for CS commodities generated as a result of project activities

A. Any partnerships designed to market resulting CS commodities

We developed a team of marketing partnerships within the proposal partners to investigate ways to better market CS commodities. That team consists of the University of Wisconsin, Georgia Organics, Carolina Farm Stewardship Association, Virginia Association of Biological Farmers, one of the members of the University of Georgia team (Dr. Jessica Holt, an Agricultural Communications expert), and Rodale Institute. Each member of the CS Marketing Team has expertise in working with producers, vendors, farmers markets, agricultural communications, and marketing. This team is poised to investigate the issues Southern Piedmont farmers face in marketing CS commodities and coming up with tangible solutions farmers and the USDA can work with to increase the value-added market of CS commodities.

Between 1994 and 2019, the number of farmers markets in the U.S. grew by nearly 400% [30]. Farmers markets play an important role in shaping the community in terms of entertainment, food access, and information sharing [31]. We will use **farmers markets throughout the Southern Piedmont as vehicles to market CS commodities, increase consumer and farmer buy-in, track CS commodities from producer to consumer, and learn about ways to influence consumer behavior toward purchasing more CS commodities.**

Consumer buy-in is essential to change a farming system. Targeted communications by state governments show promise for increasing consumer buy-in of locally produced food [26]. Such work can be amplified to target CSA by assessing existing farmer and consumer habits and the constellation of attitudes contributing to those habits [26,32]. **We will embark on a consumer education campaign** that ***highlights and promotes early adopter CS farmers*** in the region **and evaluates consumer decision-making around value-added CS commodities** and quantifies changes over time. Details of the research we will perform are described in section 1D of this document.

B. A plan to track CS commodities through the supply chain, if appropriate

We will verify and improve upon Farm2Facts (F2F) an inexpensive, easy to use data collection

application/toolkit that provides graphic savvy printouts for farmers which can be used at market to advertise, educate, market, and track CS commodities through the supply chain**.** The F2F creators developed a farmer version of the tool which includes economic, life cycle, and ecosystem metrics and **can track the amount of CS commodities produced and sold by individual farmers at market through farmer entered data;** however, this tool has never been validated in the south. To verify and improve the F2F Ecosystems Services Tool and evaluate the degree of CS farm practices occurring on participating farms with scientifically rigorous, empirical GHG emissions/soil health data, the farmers participating in the greenhouse gas and soil health portion of this proposal will also participate annually in F2F. Once the Ecosystems Services Tool is validated, farmers can fill out the questionnaire providing data on ecosystem services and, as we are performing the research needed to validate this tool, farmers will be entering the amount and type of CS commodities produced and sold at market.

C. Estimated economic benefits for participating producers including market returns

The economic potential of selling CS commodities in southern markets is not known. Depending on participation level, participating farmers will receive up to $58,310 across the 5-year study in cash and non-cash incentives. We will gather baseline economic data on the 100 farms participating in the CSA experimental portion of the project and get year over year data on CSA and no-CSA on organic and conventional farms to determine farm profitability in the first five years of adopting CSA. **Additionally, the market strategy surveys we will be implementing will identify consumers' willingness to pay, choice analysis, and long-term marketability of CS commodities allowing us to determine the economic potential for farmers selling CS commodities in the southeast.**

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

Our goal is to truly change the Southern Piedmont farming community to embrace, practice, and buy CS commodities. To do this, post-project potential, ability to scale project activities, and long-term viability is essential. We do this in several ways. First and foremost, we have an education plan that comprehends a variety of organizational scales, from farmer support and education to local food systems through farmers markets, to consumer buy-in leading to consumption of CS commodities, to farm focused NGOs and stakeholders, and researchers. **This education plan will lay the foundation for CSA in Southern Piedmont, make the concept of CSA recognized by consumers, and emphasize the value of purchasing CS commodities.**

Results from this project will provide **verification and improvements to the COMET model in Southern Piedmont soils** across a thermal gradient **in organic and conventional** systems. This allows for more accurate assessments of GHG mitigation and C sequestration across the southeast, **a farming community often neglected in model verification,** and gives southern farmers confidence that they can make a difference for the climate and **incentivizes them to adopt CSA.**

The life cycle analysis will provide scientifically rigorous evidence that will inform farmers of ways to diminish their climate impact across their farms. Additionally, many of the variables assessed in **the life cycle analysis will translate to farms across the country further expanding the scale and longevity of the project.**

We will provide the USDA with **scientifically rigorous recommendations for education and technical assistance programs** that will break down barriers for underserved and small-scale

farmers who are interested in transitioning to CS commodities. Additionally, our work will provide lawmakers with **scientifically rigorous recommendations for ways to economically support farmers including underserved and small-scale farmers transitioning to CS commodities**. *These recommendations will scale up the long-term project potential for farms across the country.* We will provide **scientifically rigorous approaches to integrating farmers, farmers' markets, and consumers** in data collection and programmatic activities that **enhance consumer willingness to pay for CS commodities.** We will **refine and validate Farm2Facts, an easy-to-use, inexpensive tool** that farmers and markets can share with consumers, educating them on why CS commodities are value-added and more sustainable for the environment. *This tool can be used by farmers and markets across the country.* Furthermore, we anticipate that the number of farmers markets we work with will grow post-grant; **we anticipate that relationships between marketplaces, Rodale Institute, and the NGO partners will continue providing data from Farm2Facts informing relationships with NSF related work on 'smart' foodsheds (ICICLE.AI) toward sharable data**.

Understanding and anticipating agricultural land-use change is a prerequisite for mitigating the effects of changing climate on rural economies, national food security, and ecological health. It is also key to helping farmers transition their cultivation practices to meet the coming climatic scenario. **We will advance methodological modeling efforts to predict climate impacts on agricultural systems** by integrating the highest geospatial data available to generate high-resolution suitability ensembles for major U.S. crops in the region.

Once the project is complete, **it is important to continue supporting farmers in the region to adopt CSA practices.** One way this proposed project will do that **is through the creation of an underserved farmer equipment grant.** As a part of this grant, Rodale Institute will purchase 10 no-till seed drills, 5 roller crimpers, and 5 no-till transplanters. Rodale Institute will create a competitive grant program for underserved farmers allowing them to apply to receive one of the above pieces of farm equipment needed to transition to CSA. The grant will continue until the equipment is gone.

Additional items addressed in the USDA's The Rodale Institute - Negotiation Meeting Letter_01.10.2023:

- **Question:** Are you proposing to implement any practices on land that is not currently used for agricultural production?
- **Response:** No
- **Question:** Will any practices involve ground disturbance below the plow zone, such as fencing?
- **Response:** No
- **Question:** Please describe any potential project activities that may involve concentrated animal feeding operations (CAFOs)?
- **Response:** None
- **Comment:** As noted in the application materials, 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.
- **Response:** We will not be working on Tribal lands.

Benchmarks/Milestones

All applicants are expected to provide quarterly benchmarks. Benchmarks will be considered interchangeably with milestones for the purposes of these discussions and the progress reports expected of grantees. We do want each project to have unique benchmarks that help track their progress in executing the innovative projects under their specific grant. We also want to make sure that all grants have the following elements covered in their benchmarks at minimum.

Project Specific Benchmarks:

- Hire project team
- Purchase CSA specific farm equipment
- Purchase 8 Eddy Covariance Towers
- Build POKET project application
- Identify 100 farmers for the GHG/soil health study
- Setup 8 Eddy Covariance Towers on 4 farms
- Calibrate Eddy Covariance gas analyzers
- Build GHG model
- Take initial soil samples
- Begin collecting economic data

Required Quantitative Targets by Quarter (Cumulative):

- Number of producers involved
- Number of underserved producers involved
- Number of acres involved
- Number of head involved (if applicable)
- Dollars provided to producers
- GHG Benefits (Metric Tons of CO2e Reduced or Sequestered)
- Number of new marketing channels* established
- Number of marketing channels* expanded
- Number of measurement tools utilized
- *Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

- Outreach, training and other technical assistance
- Other MMRV and supply chain traceability attributes
- Other measurements of work related to marketing of commodities
- Demonstrated engagement of major partners
- Climate smart technologies employed (if applicable)

Attachments:

- PDF showing the boundary of the project.

Climate-Smart Quarterly Benchmarks
2023 Q2
Rodale Institute
Project Specific Benchmarks:

Project Management
Hire project team.
*Setup subawards
*Project Partner Kick Off meeting.
*Build out CS Web Portal and routinely update.
*Professional Evaluation.
*Quarterly Partner Reports.
GHG/Soil Health Study
*Purchase Eddy Covariance towers.
*Begin Farmer recruitment.
GHG/Soil Health Study - Results
Marketing Study
*Begin Farmer and Farmer Market recruitment.
Marketing Study – Results

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 0.
Number of underserved producers involved (assuming 20% of farmers) – 0.
Number of acres involved (assuming 5 acres/farm) – 0.
Dollars provided to producers - *$0.*
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 0.
Number of marketing channels* expanded – 0.
Number of measurement tools utilized – 0.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance –

- *Project Kick-off meeting.
- *Create farmer recruitment webinar, application, and materials.
- *Create farmer's market and market farmer recruitment webinar, application, and materials.

Other MMRV and supply chain traceability attributes – 0.
Other measurements of work related to marketing of commodities – 0.
Demonstrated engagement of major partners – The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable) – N/A, yet.

2023 Q3
Project Specific Benchmarks:

Project Management

Hire project team.
*Setup subawards.
*Build POKET project application and routinely update.
*Build out CS Web Portal and routinely update.
*Professional Evaluation.
Setup and pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Purchase Eddy Covariance towers.
Purchase CSA specific farm equipment.
*Continue Farmer recruitment.

GHG/Soil Health Study - Results

Marketing Study

*Continue Farmer and Farmer Market recruitment.

Marketing Study - Results

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 50.
Number of underserved producers involved (assuming 20% of farmers participating) – 10.
Number of acres involved (assuming 5 acres/farm) – 250.
Dollars provided to producers - $0.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 0.
Number of marketing channels* expanded – 0.
Number of measurement tools utilized – 0.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Farmer, farmer's market, and market farmer recruitment.

Other MMRV and supply chain traceability attributes – 0.
Other measurements of work related to marketing of commodities – 0.
Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable) – N/A, yet.

2023 Q4

Project Specific Benchmarks:

Project Management

*Setup subawards.
*Continue to build POKET project application and routinely update.
*Continue to build out CS Web Portal and routinely update.
*Professional Evaluation.
Setup and pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Setup 8 and Calibrate Eddy Covariance Towers on 4 farms.
Purchase CSA specific farm equipment.
*Farmer Focus Groups.

GHG/Soil Health Study – Results

*Begin economic analysis.
*Begin barriers to transition to CSA analysis.

Marketing Study

*Consumer surveys.
*Begin consumer behavior and marketing strategy outreach initiative.
*Highlighted Farmer Videos 2/yr years 1-5.

Marketing Study - Results

*Begin barriers to market for CS commodities analysis.
*Consumer behavior patterns on CS commodities analysis.
*Changes in consumer buy-in to CS commodities analysis.
*Marketing strategy impact on consumer behavior analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 200.
Number of underserved producers involved (assuming 20% of farmers) – 40.
Number of acres involved (assuming 5 acres/farm) – 1,000.
Dollars provided to producers - $3,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 0.
Number of marketing channels* expanded – 0.
Number of measurement tools utilized – 8.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Updating the CS web portal with digital media and events.
- *Farmer onboarding webinars.
- *Creating 2 highlighted farmer videos.
- *Farmer's market kickoff meeting.
- *Farmer technical assistance as needed.

Other MMRV and supply chain traceability attributes

- *Consumer surveys performed at farmer's markets.
- *Farmer barriers to change focus groups.

Other measurements of work related to marketing of commodities

- *Barriers to market for CS commodities analysis.
- *Consumer behavior patterns on CS commodities analysis.
- *Changes in consumer buy-in to CS commodities analysis.
- *Marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable) – N/A, yet.

2024 Q1

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal routine updates.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Setup 8 and Calibrate Eddy Covariance Towers on 4 farms.
*Take initial soil samples.
*Collect farmer entered economic and carbon cycle data.
*Farmers fill out F2F.
Farmers fill out Comet planner.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Build GHG model from Eddy Covariance Tower data.
*Process and analyze soil samples.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.

Marketing Study

*Farmers fill out F2F.
*Farmers fill out Comet planner.
*Market managers submit farmer F2F/CP and other details.

Marketing Study - Results

*Verify and improve F2F.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved- 350.
Number of underserved producers involved (assuming 20% of farmers) – 70.
Number of acres involved (assuming 5 acres/farm) – 1,750.
Dollars provided to producers - $60,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 250.
Number of marketing channels* expanded – 0.
Number of measurement tools utilized – 19.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Participation in National and regional conferences.

- *Advertising field days through Rodale and partner networks.
- *Farmer onboarding webinars.
- *Continue farmer, farmer market, and market farmer recruitment.
- *Farmer's market kickoff meeting.
- *Farmer technical assistance as needed.

Other MMRV and supply chain traceability attributes

- Farmers enter economic data through POKET.
- *Farmers and market managers fill out F2F, Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable) – N/A, yet.

2024 Q2

Project Specific Benchmarks:

Project Management

*Annual Partner Meeting.

POKET project application routine maintenance.

*CS Web Portal routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Process and analyze initial soil samples.

*Continue to collect farmer entered economic and carbon cycle data.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue to model GHG data and soil health cycling.

Begin soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.

*Continue barriers to transition to CSA analysis.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Verify and improve F2F.

*Barriers to market for CS commodities analysis.

*Continue marketing for CS commodities analysis.

*Continue consumer behavior patterns on CS commodities analysis.

*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 350.
Number of underserved producers involved (assuming 20% of farmers) – 70.
Number of acres involved (assuming 5 acres/farm) – 1,750.
Dollars provided to producers - $61,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 250.
Number of marketing channels* expanded – 250.
Number of measurement tools utilized – 21.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Annual partner meeting.
- *Continue updating the CS web portal.
- *Participation in National and regional conferences.
- *Advertising field days through Rodale and partner networks.
- *2 Farmer field days.
- *Farmer technical assistance as needed.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Barriers to market for CS commodities analysis.
- *Consumer behavior patterns on CS commodities analysis.
- *Changes in consumer buy-in to CS commodities analysis.
- *Marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), N/A, yet.

2024 Q3

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Continue to collect farmer entered economic and carbon cycle data.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue to model GHG data and soil health cycling.
*Continue soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.
*Continue barriers to transition to CSA analysis.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 450.
Number of underserved producers involved (assuming 20% of farmers) – 90.
Number of acres involved (assuming 5 acres/farm) – 2,250.
Dollars provided to producers - $61,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 350.
Number of marketing channels* expanded – 350.
Number of measurement tools utilized – 22.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *Farmer technical assistance as needed.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), N/A, yet.

2024 Q4
Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Continue to collect farmer entered economic and carbon cycle data.
*Farmer Focus Groups.
*Plant Cover crops.
End-of-season no-till drill maintenance.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Begin seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.
*Highlighted Farmer Videos 2/yr years 1-5.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 450.
Number of underserved producers involved (assuming 20% of farmers) – 90.
Number of acres involved (assuming 5 acres/farm) – 2250.
Dollars provided to producers - $821,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 350.
Number of marketing channels* expanded – 350.
Number of measurement tools utilized – 24.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *2 Farmer field days.
- *Creating 2 highlighted farmer videos.
- *Farmer technical assistance as needed.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmer barriers to transition to CSA focus groups.
- *Begin seed to fruit on-farm GHG/Carbon cycling analysis.

- *Economic Analysis of using CSA versus business as usual in organic and conventional systems.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable), Cover crops and no-till seed drills.

2025 Q1

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.

*CS Web Portal and routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Calibrate Eddy Covariance Towers on 4 farms.

*Take annual soil samples.

*Continue to collect farmer entered economic and carbon cycle data.

*Farmers fill out F2F.

Farmers fill out Comet planner.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.

*Continue to model GHG data and soil health cycling.

Continue soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.

*Continue barriers to transition to CSA analysis.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

*Farmers fill out F2F.

*Farmers fill out Comet planner.

*Market managers submit farmer F2F/CP and other details.

Marketing Study - Results

*Continue to verify and improve F2F.

*Continue barriers to market for CS commodities analysis.

*Continue marketing for CS commodities analysis.

*Continue consumer behavior patterns on CS commodities analysis.

*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 450.
Number of underserved producers involved (assuming 20% of farmers) – 90.
Number of acres involved (assuming 5 acres/farm) – 2,250.
Dollars provided to producers - $989,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 350.
Number of marketing channels* expanded – 350.
Number of measurement tools utilized – 24.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *Farmer technical assistance as needed.
- *Participation in National and regional conferences.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmers and market managers fill out F2F, Comet Planner.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Cover crops.

2025 Q2

Project Specific Benchmarks:

Project Management

*Annual Partner Meeting.
POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Process and analyze soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Terminate cover crops and plant vegetables.
End-of-season roller crimper and no-till transplanter maintenance.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 450.
Number of underserved producers involved (assuming 20% of farmers) – 90.
Number of acres involved (assuming 5 acres/farm) – 2,250.
Dollars provided to producers - $993,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 350.
Number of marketing channels* expanded – 350.
Number of measurement tools utilized – 24.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Annual partner meeting.
- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- * 2 farmer field days.
- *Farmer technical assistance as needed.
- *Participation in National and regional conferences.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Roller crimpers and no-till transplanters.

2025 Q3
Project Specific Benchmarks:

Project Management
POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study
*Process and analyze soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results
*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.

Marketing Study
*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results
*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):
Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $993,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 24.

*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable), None specifically this quarter.

2025 Q4

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.

*CS Web Portal and routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Continue to collect farmer entered economic and carbon cycle data.

*Farmer Focus Groups.

*Plant Cover crops.

End-of-season no-till drill maintenance.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.

*Continue to model GHG data and soil health cycling.

Continue soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.

*Continue barriers to transition to CSA analysis.

*Begin to validate and improve COMET Planner model.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

*Perform consumer surveys.
*Highlighted Farmer Videos 2/yr years 1-5.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $1,752,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established -500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Farmer technical assistance as needed.
- *Creating 2 highlighted farmer videos.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmer barriers to change focus groups.
- *Consumer surveys performed at farmer's markets.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Cover crops and no-till transplanters.

2026 Q1

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Calibrate Eddy Covariance Towers on 4 farms.
*Take annual soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Farmers fill out F2F.
Farmers fill out Comet planner.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.
*Continue to validate and improve COMET Planner model.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.
*Farmers fill out F2F.
*Farmers fill out Comet planner.
*Market managers submit farmer F2F/CP and other details.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 90.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $1,934,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Farmer technical assistance as needed.
- *Participation in National and regional conferences.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmers and market managers fill out F2F, Comet Planner.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Begin validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable), Cover crops.

2026 Q2

Project Specific Benchmarks:

Project Management

*Annual Partner Meetings.

POKET project application routine maintenance.

*CS Web Portal and routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Process and analyze soil samples.

*Continue to collect farmer entered economic and carbon cycle data.

*Terminate cover crops and plant vegetables.

End-of-season roller crimper and no-till transplanter maintenance.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.

*Continue to model GHG data and soil health cycling.

Continue soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.

*Continue barriers to transition to CSA analysis.

*Continue to validate and improve COMET Planner model.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $1,937,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Annual partner meeting.
- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *Farmer technical assistance as needed.
- *Participation in National and regional conferences.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Roller crimpers and no-till transplanters.

2026 Q3

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Continue to process and analyze soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.
*Continue to validate and improve COMET Planner model.
*Begin to model climate mitigation impacts across the southeastern U.S.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $1,937,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), None specifically this quarter.

2026 Q4
Project Specific Benchmarks:

Project Management
POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study
*Continue to collect farmer entered economic and carbon cycle data.
*Farmer Focus Groups.
*Plant Cover crops.
End-of-season no-till drill maintenance.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results
*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.
*Continue to validate and improve COMET Planner model.
*Continue to model climate mitigation impacts across the southeastern U.S.

Marketing Study
*Continue consumer behavior and marketing strategy outreach.
*Highlighted Farmer Videos 2/yr years 1-5.

Marketing Study - Results
*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.

*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $2,697,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *2 farmer field days.
- *Creating 2 highlighted farmer videos.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmer barriers to change focus groups.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Cover crops and no-till seed drills.

2027 Q1

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.

*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Calibrate Eddy Covariance Towers on 4 farms.
*Take annual soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Farmers fill out F2F.
Farmers fill out Comet planner.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.
*Continue to validate and improve COMET Planner model.
*Continue to model climate mitigation impacts across the southeastern U.S.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.
*Farmers fill out F2F.
*Farmers fill out Comet planner.
*Market managers submit farmer F2F/CP and other details.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $2,880,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Participation in National and regional conferences.
- *Farmer technical assistance as needed.

- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmers and market managers fill out F2F, Comet Planner.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable), Cover crops.

2027 Q2

Project Specific Benchmarks:

Project Management

*Annual Partner Meeting.

POKET project application routine maintenance.

*CS Web Portal and routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Process and analyze soil samples.

*Continue to collect farmer entered economic and carbon cycle data.

*Terminate cover crops and plant vegetables.

End-of-season roller crimper and no-till transplanter maintenance.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.

*Continue to model GHG data and soil health cycling.

Continue soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.

*Continue barriers to transition to CSA analysis.

*Continue to validate and improve COMET Planner model.

*Continue to model climate mitigation impacts across the southeastern U.S.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Continue to verify and improve F2F.

*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $2,883,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Annual partner meeting.
- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *Participation in National and regional conferences.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Roller crimpers and no-till transplanters.

2027 Q3

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.

*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.
*Quarterly Partner Reports.

GHG/Soil Health Study

*Continue to process and analyze soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.
*Continue to validate and improve COMET Planner model.
*Continue to model climate mitigation impacts across the southeastern U.S.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $2,883,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.

- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Continue consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable), None specifically this quarter.

2027 Q4

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.

*CS Web Portal and routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Continue to collect farmer entered economic and carbon cycle data.

*Farmer Focus Groups.

*Plant Cover crops.

End-of-season no-till drill maintenance.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.

*Continue to model GHG data and soil health cycling.

Continue soil health analysis of using CSA in organic and conventional systems.

*Continue economic analysis.

*Continue barriers to transition to CSA analysis.

*Continue to validate and improve COMET Planner model.

*Continue to model climate mitigation impacts across the southeastern U.S.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.

*Highlighted Farmer Videos 2/yr years 1-5.

Marketing Study - Results

*Continue to verify and improve F2F.

*Continue barriers to market for CS commodities analysis.

*Continue marketing for CS commodities analysis.

*Continue consumer behavior patterns on CS commodities analysis.

*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.

Number of underserved producers involved (assuming 20% of farmers) – 120.

Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $3,643,000.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *2 farmer field days.
- *Participation in international conferences.
- *Creating 2 highlighted farmer videos.
- *Farmer's market wrap-up meeting.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmer barriers to change focus groups.
- *Consumer surveys performed at farmer's markets.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Cover crops and no-till seed drills.

2028 Q1

Project Specific Benchmarks:

Project Management

POKET project application routine maintenance.
*CS Web Portal and routine update.
*Professional Evaluation.
Pay farmer incentives as farmer deliverables are met.

*Quarterly Partner Reports.

GHG/Soil Health Study

*Calibrate Eddy Covariance Towers on 4 farms.
*Take final soil samples.
*Continue to collect farmer entered economic and carbon cycle data.
*Farmers fill out F2F.
Farmers fill out Comet planner.
*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Continue seed to fruit on farm GHG/C cycle analysis.
*Continue to model GHG data and soil health cycling.
Continue soil health analysis of using CSA in organic and conventional systems.
*Continue economic analysis.
*Continue barriers to transition to CSA analysis.
*Continue to validate and improve COMET Planner model.
*Continue to model climate mitigation impacts across the southeastern U.S.

Marketing Study

*Continue consumer behavior and marketing strategy outreach.
*Farmers fill out F2F.
*Farmers fill out Comet planner.
*Market managers submit farmer F2F/CP and other details.

Marketing Study - Results

*Continue to verify and improve F2F.
*Continue barriers to market for CS commodities analysis.
*Continue marketing for CS commodities analysis.
*Continue consumer behavior patterns on CS commodities analysis.
*Continue changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved – 600.
Number of underserved producers involved (assuming 20% of farmers) – 120.
Number of acres involved (assuming 5 acres/farm) – 3,000.
Dollars provided to producers - $3,725,500.
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established – 500.
Number of marketing channels* expanded – 500.
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Continue updating the CS web portal.
- *Advertising field days through Rodale and partner networks.
- *2 farmer field days.
- *Participation in regional, national, and international conferences.
- *Farmer's market wrap-up meeting.

- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Farmers continue to enter economic data through POKET.
- *Farmers and market managers fill out F2F, Comet Planner.
- *Continue seed to fruit on-farm GHG/Carbon cycling analysis.
- *Continue economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Continue validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Continue verifying and improving F2F.
- *Continue barriers to market for CS commodities analysis.
- *Consumer behavior patterns on CS commodities analysis.
- *Continue changes in consumer buy-in to CS commodities analysis.
- *Continue marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.

Climate smart technologies employed (if applicable), Cover crops.

2028 Q2

Project Specific Benchmarks:

Project Management

*Annual Partner Meetings.

POKET project application routine maintenance.

*CS Web Portal and routine update.

*Professional Evaluation.

Pay farmer incentives as farmer deliverables are met.

*Final Project Report.

GHG/Soil Health Study

*Process and analyze soil samples.

*Complete collecting farmer entered economic and carbon cycle data.

*Terminate cover crops and plant vegetables.

End-of-season roller crimper and no-till transplanter maintenance.

*Technical Assistance visits as needed.

GHG/Soil Health Study - Results

*Finalize seed to fruit on farm GHG/C cycle analysis.

*Finalize to model GHG data and soil health cycling.

*Finalize soil health analysis of using CSA in organic and conventional systems.

*Finalize economic analysis.

*Finalize barriers to transition to CSA analysis.

*Finalize to validate and improve COMET Planner model.

*Finalize to model climate mitigation impacts across the southeastern U.S.

Marketing Study

Marketing Study - Results

*Finalize verifying and improving F2F.

*Finalize barriers to market for CS commodities analysis.
*Finalize marketing for CS commodities analysis.
*Finalize consumer behavior patterns on CS commodities analysis.
*Finalize changes in consumer buy-in to CS commodities analysis.

Required Quantitative Targets by Quarter (Cumulative):

Number of producers involved - 600
Number of underserved producers involved (assuming 20% of farmers) - 120
Number of acres involved (assuming 5 acres/farm) – 3,000
Dollars provided to producers - $3,725,500
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered) – TBD: The objective of the study is to determine this. Results will provide.
Number of new marketing channels* established - 500
Number of marketing channels* expanded - 500
Number of measurement tools utilized – 25.
*Note: Marketing channels can be a wide range e.g. selling to food processors, distributers, direct to consumer.

Other Required Benchmarks that may be quantitative or qualitative:

Outreach, training and other technical assistance

- *Partner wrap-up meeting.
- *Continue updating the CS web portal.
- *Participation in regional and national conferences.
- *Farmer technical assistance as needed.
- *Peer-review publications, white papers, factsheets as appropriate.

Other MMRV and supply chain traceability attributes

- Finalize farmers continue to enter economic data through POKET.
- *Finalize seed to fruit on-farm GHG/Carbon cycling analysis.
- *Finalize economic Analysis of using CSA versus business as usual in organic and conventional systems.
- *Finalize validating and improving on Comet Planner.

Other measurements of work related to marketing of commodities

- *Finalize verifying and improving F2F.
- *Finalize barriers to market for CS commodities analysis.
- *Finalize behavior patterns on CS commodities analysis.
- *Finalize changes in consumer buy-in to CS commodities analysis.
- *Finalize marketing strategy impact on consumer behavior analysis.

Demonstrated engagement of major partners - The partners are an integral part of this work. They will be participating in every quarter. The project items partners are participating in are noted by an asterisk throughout the benchmark's descriptions.
Climate smart technologies employed (if applicable), Roller crimpers and no-till transplanters.

Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
340	Cover Crops
329	Residue and Tillage Management, No-Till

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

N/A

Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Version 1.0

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

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."

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.