



U.S. Department of Agriculture  
Natural Resources Conservation Service

NRCS-ADS-093

## NOTICE OF GRANT AND AGREEMENT AWARD

|   |   |  |   |
|---|---|--|---|
| 1. Award Identifying Number<br>NR233A750004G068   | 2. Amendment Number                             | 3. Award /Project Period<br>Date of final signature -<br>06/30/2027  | 4. Type of award instrument:<br>Grant Agreement   |
| 5. Agency (Name and Address)<br>USDA Partnerships for Climate-Smart Commodities<br>c/o FPAC-BC Grants and Agreements Division<br>1400 Independence Ave SW, Room 3236<br>Washington, DC 20250<br>Direct all correspondence to FPAC.BC.GAD@usda.gov |   | 6. Recipient Organization (Name and Address)<br>South Carolina State University<br>300 College Street NE<br>Orangeburg SC 29117-0001<br>UEI # JHM2PHX82EM7 |   |
| 7. NRCS Program Contact<br>James Denton   | 8. NRCS Administrative Contact<br>Daniel Curtis | 9. Recipient Program Contact<br>Lamin Drammeh  | 10. Recipient Administrative Contact<br>Tokmeco James   |
| (b)(6)  |   |  |   |
| 11. CFDA<br>10.937  | 12. Authority<br>15 USC 714 et seq              | 13. Type of Action<br>New Agreement  | 14. Program Director<br>Lamin Drammeh<br><div style="background-color: yellow; width: 100px; height: 20px; margin-top: 5px;">(b)(6)</div> |
| 15. Project Title/ Description: Expands markets for climate-smart greens and specialty crops in South Carolina and supports farmers with implementation and monitoring of climate-smart practices.  |   |  |   |
| 16. Entity Type: T = Historically Black Colleges and Universities   |   |  |   |
| 17. Select Funding Type   |   |  |   |
| Select funding type:  | <input checked="" type="checkbox"/> Federal     | <input type="checkbox"/> Non-Federal   |   |
| Original funds total  | \$4,542,629.00                                  | \$0.00   |   |
| Additional funds total  | \$0.00  | \$0.00   |   |
| Grand total   | \$4,542,629.00                                  | \$0.00   |   |

## 18. Approved Budget

|                   |                |                             |                |
|-------------------|----------------|-----------------------------|----------------|
| Personnel         | \$1,440,761.00 | Fringe Benefits             | \$505,057.00   |
| Travel            | \$75,770.36    | Equipment                   | \$667,000.00   |
| Supplies          | \$73,185.84    | Contractual                 | \$60,184.80    |
| Construction      | \$0.00         | Other                       | \$1,720,670.00 |
| Total Direct Cost | \$4,221,016.00 | Total Indirect Cost         | \$321,613.00   |
|                   |                | Total Non-Federal Funds     | \$0.00         |
|                   |                | Total Federal Funds Awarded | \$4,542,629.00 |
|                   |                | Total Approved Budget       | \$4,542,629.00 |

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<br><br>Katina Hanson<br>Acting Senior Advisor for Climate-Smart Commodities | Signature<br><br><b>KATINA HANSON</b><br><br>Digitally signed by KATINA HANSON<br>Date: 2023.08.30 10:16:22 -05'00' | Date                  |
| Name and Title of Authorized Recipient Representative<br><br>Mr. Elbert R. Malone<br>Assoc. Provost Sponsored Programs & Research  | Signature<br><br><i>Elbert R. Malone, Associate Provost, Sponsored Programs</i>                                     | Date<br><br>8/29/2023 |

**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 South Carolina State University, 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 \$4,542,629.00

TOTAL FEDERAL FUNDS \$4,542,629.00

PERSONNEL \$1,231,420.00

FRINGE BENEFITS \$431,673.00

TRAVEL \$64,761.00 (prime staff)

EQUIPMENT \$667,000.00

SUPPLIES \$62,552.00

CONTRACTUAL \$51,440.00

CONSTRUCTION (usually n/a) \$0.00

OTHER \$1,712,170 (include \$899,880.00 in PRODUCER INCENTIVES)

TOTAL DIRECT COSTS \$4,221,016.00

INDIRECT COSTS \$321,613.00

Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate of 17 percent of a base of \$1,891,846.00=\$321,613.82 (Voluntarily reduced to \$321,613.00)

TOTAL NON-FEDERAL FUNDS \$0.00

PERSONNEL \$0.00

FRINGE BENEFITS \$0.00

TRAVEL \$0.00

EQUIPMENT \$0.00

SUPPLIES \$0.00

CONTRACTUAL \$0.00

CONSTRUCTION (usually n/a) \$0.00

OTHER \$0.00

PRODUCER INCENTIVES \$0.00

TOTAL DIRECT COSTS \$0.00

INDIRECT COSTS \$0.00

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

**Responsibilities of the Parties:**

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

**RECIPIENT RESPONSIBILITIES**

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

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

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

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

Performance Reports: Quarterly

SF425 Financial Reports: Quarterly

Detailed Progress Report: Quarterly

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

**Expected Accomplishments and Deliverables**

See attached A3 - Benchmarks Table and associated A2 - Project Narrative.

**Resources Required**

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

**Milestones**

See attached A3 - Benchmarks Table and associated A2 - 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:**

Attachment - Budget Narrative

Attachment - Project Narrative

Attachment - Benchmarks Table

Attachment - Climate-Smart Practices List and Limitations

Attachment - Data Dictionary

Attachment - Climate-Smart Specific Terms and Conditions

| Item No | Payment Type | Expense Category | Description                             | Obligation Amount | Obligation Direct Cost | Obligation Indirect Cost | NICRA Rate |
|---------|--------------|------------------|---|-------------------|------------------------|--------------------------|------------|
| 10      | Payment      | Personnel        |   | \$ 1,440,761.00   | \$ 1,231,420.00        | \$ 209,341.00            | 17         |
| 20      | Payment      | Fringe Benefits  |   | \$ 505,057.00     | \$ 431,673.00          | \$ 73,384.00             | 17         |
| 30      | Payment      | Travel           |   | \$ 75,770.36      | \$ 64,761.00           | \$ 11,009.36             | 17         |
| 40      | Payment      | Supplies         |   | \$ 73,185.84      | \$ 62,552.00           | \$ 10,633.84             | 17         |
| 50      | Payment      | Contractual      |   | \$ 60,184.80      | \$ 51,440.00           | \$ 8,744.80              | 17         |
| 60      | Payment      | Other            | Producer Incentives                     | \$ 899,880.00     | \$ 899,880.00          | \$ -                     | 0          |
| 70      | Payment      | Other            | Participant Travel                      | \$ 112,290.00     | \$ 112,290.00          | \$ -                     | 0          |
| 80      | Payment      | Other            | Subaward 1 - Mixon Seeds                | \$ 29,250.00      | \$ 25,000.00           | \$ 4,250.00              | 17         |
| 90      | Payment      | Other            | Subaward 1 - Mixon Seeds                | \$ 475,000.00     | \$ 475,000.00          | \$ -                     | 0          |
| 100     | Payment      | Other            | Subaward 2 - SC Black Farmers Coalition | \$ 29,250.00      | \$ 25,000.00           | \$ 4,250.00              | 17         |
| 110     | Payment      | Other            | Subaward 2 - SC Black Farmers Coalition | \$ 175,000.00     | \$ 175,000.00          | \$ -                     | 0          |
| 120     | Payment      | Equipment        |   | \$ 667,000.00     | \$ 667,000.00          | \$ -                     | 0          |



Withheld pursuant to exemption

(b)(4)

of the Freedom of Information and Privacy Act

Withheld pursuant to exemption

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of the Freedom of Information and Privacy Act



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of the Freedom of Information and Privacy Act

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

| <b>NRCS Practice Code</b> | <b>Practice Name</b> |
|---------------------------|----------------------|
| 528                       | Prescribed Grazing   |

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

| <b>Practice Name</b> | <b>Alternative Practice Standards</b> |
|----------------------|---------------------------------------|
|                      |                                       |



# Partnerships for Climate-Smart Commodities

## Additional Specific Terms and Conditions

### February 2023

#### I. Overarching Statement

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

#### II. Eligibility and Highly Erodible Lands and Wetlands Compliance

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

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

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

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

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

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

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

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

### **III. Other Environmental and Cultural Resources Reviews**

A Finding of No Significant Impact (FONSI) was signed by USDA NRCS on August 26, 2022. A copy of the Programmatic Environmental Assessment for Partnerships for Climate-Smart Commodities is available at [www.usda.gov/climate-smart-commodities](http://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](http://www.usda.gov/climate-smart-commodities) or an alternative location provided to the recipient by the National Program Officer. USDA may provide updates to the PCSC Project Reporting Workbook or submission methods to streamline the data collection process and/or reduce the burden on the recipient throughout the grant period. Generally, these updates will be provided at least 3 months in advance of any required changes. The recipient must not transfer any data to foreign governments or foreign entities without prior approval from USDA.

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

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

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

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

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



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

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

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

### Overview of Reporting Requirements

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

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

- Project level:** Information about activities and impacts at a whole project/aggregate level (i.e., reflecting all activities under the grant agreement). Some project-level reporting is further subdivided by commodity type or a combination of commodity and CSAF practice(s) (commodity x practice).
- Partner level:** Information about activities related to a single organization (recipient, subrecipient, contractor, or other partner) within a project.
- Producer level:** Information about individual producers who have one or more farms enrolled in a project.
- Field level:** Information about individual fields enrolled in a project.

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

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


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

### Project Summary

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

Table 1. Project Summary elements

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


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### Partner Activities

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

Table 2. Partner Activities elements

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


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### Marketing Activities

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

Table 3. Marketing Activities elements

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



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### Producer Enrollment

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

Table 4. Producer Enrollment elements


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


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Field Enrollment

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

Table 5. Field Enrollment elements

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


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Farm Summary

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

Table 6. Farm Summary elements

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


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### Field Summary

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

Table 7. Field Summary elements

| <b>Data element name</b>       | <b>Description</b>   | <b>Frequency</b> |
|--------------------------------|--|------------------|
| 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        |




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### GHG Benefits - Alternate Modeled

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

Table 8. GHG Benefits – Alternate Modeled elements

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


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### GHG Benefits - Measured

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

Table 9. GHG Benefits - Measured data elements

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


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### Additional Environmental Benefits

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

Table 10. Additional Environmental Benefits elements

| <b>Data element name</b>     | <b>Description</b>   | <b>Frequency</b> |
|------------------------------|--|------------------|
| 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           |



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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#### Supplemental Data Submission

##### Project MMRV Plan

###### *Definition of MMRV elements:*

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

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

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

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

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

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

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

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

##### Field modeled GHG benefit reports

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

##### Field direct measurement results

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

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

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### Data Descriptions

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

### Unique IDs

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

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


**State or territory of operation:** State or territory name

**County of operation:** Physical county name

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

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

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


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### Project Summary

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#### 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

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#### 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

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#### 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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**GHG cumulative calculation**

|   |  |
|---|--|
| <b>Data element name:</b> GHG cumulative calculation  | <b>Reporting question:</b> What method(s) was used to calculate the total cumulative GHG benefits reported here?                       |
| <b>Description:</b> List the method(s) that was used to calculate the total cumulative GHG benefits reported by the project this quarter. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Models</li> <li>• Direct field measurements</li> <li>• Both</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly  |

**Cumulative GHG benefits**

|  |   |
|--|---|
| <b>Data element name:</b> Cumulative GHG benefits  | <b>Reporting question:</b> What are the project's estimated total GHG emission reductions (CO <sub>2</sub> eq) to date? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly   |

**Cumulative carbon stock**


|   |   |
|---|---|
| <b>Data element name:</b> Cumulative carbon stock   | <b>Reporting question:</b> How much carbon has the project sequestered to date? |
| <b>Description:</b> 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 <sub>2</sub> eq. |   |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly                                     |

**Cumulative CO<sub>2</sub> benefit**

|  |   |
|--|---|
| <b>Data element name:</b> Cumulative CO <sub>2</sub> benefit   | <b>Reporting question:</b> What are the project's estimated total cumulative CO <sub>2</sub> emission reductions to date? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub>   | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly   |

**Cumulative CH<sub>4</sub> benefit**

|   |  |
|---|--|
| <b>Data element name:</b> Cumulative CH <sub>4</sub> benefit  | <b>Reporting question:</b> What are the project's estimated total CH <sub>4</sub> emission reductions to date? |
| <b>Description:</b> 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 <sub>4</sub> = 25 tons of CO <sub>2</sub> eq. |  |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons CH <sub>4</sub> reduced in CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly  |


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Cumulative N2O benefit**

|   |  |
|---|--|
| <b>Data element name:</b> Cumulative N2O benefit  | <b>Reporting question:</b> What are the project's estimated total N2O emission reductions to date? |
| <b>Description:</b> 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 <sub>2</sub> O = 298 tons of CO <sub>2</sub> eq. |  |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons N2O reduced in CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly  |

**Offsets produced**

|   |   |
|---|---|
| <b>Data element name:</b> Offsets produced  | <b>Reporting question:</b> How many carbon offsets have been produced in the project? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly   |

**Offsets sale**

|  |   |
|--|---|
| <b>Data element name:</b> Offsets sale   | <b>Reporting question:</b> To what marketplace(s) were carbon offsets sold? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Text   | <b>Select multiple values:</b> NA   |
| <b>Measurement unit:</b> Name  | <b>Allowed values:</b> Text   |
| <b>Logic:</b> Respond if >0 to 'Offsets produced'  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly                                 |


**Offsets price**

|  |   |
|--|---|
| <b>Data element name:</b> Offsets price  | <b>Reporting question:</b> What was the average price of carbon received for offsets? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Dollars per metric ton  | <b>Allowed values:</b> 0-500  |
| <b>Logic:</b> Respond if >0 to 'Offsets produced'  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly   |

**Insets produced**

|  |  |
|--|--|
| <b>Data element name:</b> Insets produced  | <b>Reporting question:</b> How many carbon insets have been produced in the project? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly  |




**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Cost of on-farm TA**

|  |  |
|--|--|
| <b>Data element name:</b> Cost of on-farm TA   | <b>Reporting question:</b> What is the total amount that has been spent to provide on-farm TA? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Dollars   | <b>Allowed values:</b> \$0-\$50,000,000  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly  |

**MMRV cost**

|  |   |
|--|---|
| <b>Data element name:</b> MMRV cost  | <b>Reporting question:</b> What is the total amount that has been spent on MMRV activities? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Dollars   | <b>Allowed values:</b> \$0-\$50,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly   |

**GHG monitoring method**

|   |   |
|---|---|
| <b>Data element name:</b> GHG monitoring 1-5  | <b>Reporting question:</b> How did the project monitor GHG benefits?  |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Drones</li> <li>• Ground-level photos and videos</li> <li>• On-farm visit</li> <li>• Plot-based sampling</li> <li>• Producer records or attestation</li> <li>• Satellite monitoring or remote sensing</li> <li>• Soil metagenomics</li> <li>• Soil sensors</li> <li>• Water sensors</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly   |



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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

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

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

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

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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Partner Activities**Unique IDs**

|            |                                    |
|------------|------------------------------------|
| Partner ID | Unique Project ID for each partner |
|------------|------------------------------------|

**Partner name**

|  |  |
|--|--|
| <b>Data element name:</b> Name of partner organization | <b>Reporting question:</b> 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**

|  |   |
|--|---|
| <b>Data element name:</b> Type of partner organization | <b>Reporting question:</b> 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**

|                                       |   |
|---------------------------------------|---|
| <b>Data element name:</b> Partner POC | <b>Reporting question:</b> 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**

|   |  |
|---|--|
| <b>Data element name:</b> Partner POC email | <b>Reporting question:</b> What is the point of contact's email address? |
|---|--|

**Description:** Email of the point of contact for the recipient or partner organization

**Data type:** Text

**Select multiple values:** NA

**Measurement unit:** NA

**Allowed values:** Text

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Partner

**Data collection frequency:** Partnership initiation; update as necessary



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

**Partnership start date**

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

**Partnership end date**


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

**New partnership**

|  |   |
|--|---|
| <b>Data element name:</b> New partnership  | <b>Reporting question:</b> Is this a new partnership?   |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b>  |
|  | <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> No response for recipient  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Partner  | <b>Data collection frequency:</b> Partnership initiation                                      |

**Partner total requested**

|  |   |
|--|---|
| <b>Data element name:</b> Partner total requested  | <b>Reporting question:</b> What is the total amount of funding the partner has requested to date from this project? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> NA   |
| <b>Measurement unit:</b> Dollars   | <b>Allowed values:</b> \$0-\$100,000,000  |
| <b>Logic:</b> No response for recipient  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Partner  | <b>Data collection frequency:</b> Quarterly   |


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Total match contribution****Data element name:** Total match contribution**Reporting question:** What is the total match value the organization has contributed to the project to date?

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

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

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

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

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

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

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

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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Match amount****Data element name:** Match amount 1-3**Reporting question:** What is the value of the match contributions the organization provided to the project?

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

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

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

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

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

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

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

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

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

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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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

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


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

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

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

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

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


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

### Marketing Activities

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#### Commodity type

|   |  |
|---|--|
| <b>Data element name:</b> Commodity type  | <b>Reporting question:</b> What type of commodity is produced by the farmers enrolled in this project? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> FSA commodity list  |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly  |

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#### Marketing channel type

|   |   |
|---|---|
| <b>Data element name:</b> Marketing channel type  | <b>Reporting question:</b> What type of marketing channel is used to sell this commodity?   |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Agricultural marketing board</li> <li>• Biorefinery</li> <li>• Commodity broker</li> <li>• Direct to consumer</li> <li>• Direct to institution</li> <li>• Direct to restaurant</li> <li>• Distributor (including grain elevators)</li> <li>• Food hub or cooperative</li> <li>• Food processor</li> <li>• Non-food byproducts processor</li> <li>• Retailer</li> <li>• USDA</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly   |

---

#### Number of buyers

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

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**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Names of buyers**


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

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**Marketing channel geography**


---

|   |  |
|---|--|
| <b>Data element name:</b> Marketing channel geography   | <b>Reporting question:</b> What is the primary geography of the marketing channel?   |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Local</li> <li>• Regional</li> <li>• National</li> <li>• Global</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly  |

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**Value sold**


---

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

---

**Volume sold**


---

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

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

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

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

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

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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Price premium to producer**


|  |  |
|--|--|
| <b>Data element name:</b> Price premium to producer  | <b>Reporting question:</b> What percent of the price premium is provided to the producer for the commodity sold in this marketing channel? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Percent   | <b>Allowed values:</b> 0-100   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly  |

**Product differentiation method**

|   |  |
|---|--|
| <b>Data element name:</b> Product differentiation method 1-3  | <b>Reporting question:</b> What methods are used to differentiate climate-smart commodities in this marketing channel?   |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b>   |
|   | <ul style="list-style-type: none"> <li>• Certification/verification for internal insetting</li> <li>• Farm certification</li> <li>• Label or badge used on packaging or marketing</li> <li>• Third party certification/verification</li> <li>• Trademark</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project   | <b>Data collection frequency:</b> Quarterly  |

**Marketing method**

|  |   |
|--|---|
| <b>Data element name:</b> Marketing method 1-3   | <b>Reporting question:</b> What methods are used to market climate-smart commodities in this marketing channel?   |
| <b>Description:</b> 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 |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b>  |
|  | <ul style="list-style-type: none"> <li>• Label or badge used on packaging or marketing materials</li> <li>• Marketing partnership (e.g., promotion by buyer)</li> <li>• Print marketing campaign</li> <li>• Social media and digital marketing campaign</li> <li>• Verbal marketing campaign (e.g., radio, word of mouth)</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Quarterly   |


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Marketing channel identification method**


---

**Data element name:** Marketing channel identification method 1-3

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

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

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Project

**Data collection frequency:** Quarterly

---

**Traceability method**


---

**Data element name:** Traceability method 1-3

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

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

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Project

**Data collection frequency:** Quarterly

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## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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**

|   |  |
|---|--|
| <b>Data element name:</b> Producer data change  | <b>Reporting question:</b> Is there new/updated information for a producer who is re-enrolling in the project? |
| <b>Description:</b> Indicates that there is new or updated information for a producer who had previously enrolled in the project and is re-enrolling. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>                   |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Producer  | <b>Data collection frequency:</b> Re-enrollment  |

**Producer start date**

|   |   |
|---|---|
| <b>Data element name:</b> Producer start date   | <b>Reporting question:</b> When did the producer enroll in the project? |
| <b>Description:</b> Date that the producer enrolled in the project by signing their first contract. |   |
| <b>Data type:</b> Date  | <b>Select multiple values:</b> NA                                       |
| <b>Measurement unit:</b> MM/DD/YYYY   | <b>Allowed values:</b> 01/01/2023 – 12/31/2030                          |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Producer  | <b>Data collection frequency:</b> Initial enrollment                    |

**Producer name**

|   |  |
|---|--|
| <b>Data element name:</b> Producer name   | <b>Reporting question:</b> What is the name of producer enrolled in the project? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Text  | <b>Select multiple values:</b> NA  |
| <b>Measurement unit:</b> NA   | <b>Allowed values:</b> Text  |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Producer  | <b>Data collection frequency:</b> Initial enrollment                             |


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

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**Underserved status**


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**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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Total crop area**

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

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

**Data type:** Integer

**Select multiple values:** No

**Measurement unit:** Acres

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Producer

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

**Total livestock area**

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

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

**Data type:** Integer

**Select multiple values:** No

**Measurement unit:** Acres

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Producer

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

**Total forest area**

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

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

**Data type:** Integer

**Select multiple values:** No

**Measurement unit:** Acres


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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Producer

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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Livestock type****Data element name:** Livestock type 1-3**Reporting question:** What types of livestock are raised on the farm?

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

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

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

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

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

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




**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Organic farm****Data element name:** Organic farm**Reporting question:** Is any part of the farm currently USDA-certified organic or transitioning to USDA-certified organic?

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

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

- Yes
- No
- I don't know

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

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


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

- Yes
- No
- I don't know

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

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

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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Producer outreach**


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**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

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**CSAF experience**


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**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

---


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**CSAF federal funds**

|  |  |
|--|--|
| <b>Data element name:</b> CSAF federal funds   | <b>Reporting question:</b> Were prior CSAF practices supported by federal funds?                                     |
| <b>Description:</b> If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by federal funds? Federal funds are defined as being from programs including, but not limited to, those from the Natural Resources Conservation Service ((NRCS), including through Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Regional Conservation Partnership Program (RCP), or related programs), the Farm Service Agency Conservation Reserve Program (CRP), as well as funds from other USDA programs or other federal agencies. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> Respond if yes to 'CSAF experience'  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Producer   | <b>Data collection frequency:</b> Initial enrollment   |

**CSAF state or local funds**

|  |  |
|--|--|
| <b>Data element name:</b> CSAF state or local funds  | <b>Reporting question:</b> Were prior CSAF practices supported by state or local funds?                              |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> Respond if yes to 'CSAF experience'  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Producer   | <b>Data collection frequency:</b> Initial enrollment   |

**CSAF nonprofit funds**

|  |  |
|--|--|
| <b>Data element name:</b> CSAF nonprofit funds   | <b>Reporting question:</b> Were CSAF practices supported by nonprofit funds?   |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> Respond if yes to 'CSAF experience'  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Producer   | <b>Data collection frequency:</b> Initial enrollment   |



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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**CSAF market incentives**


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

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

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

- Yes
- No
- I don't know

**Logic:** Respond if yes to 'CSAF experience'

**Required:** Yes

**Data collection level:** Producer

**Data collection frequency:** Initial enrollment

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## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

**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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

**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




**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Practice past extent - farm**

|   |   |
|---|---|
| <p><b>Data element name:</b> Practice past extent - farm</p> <p><b>Description:</b> Prior to enrollment, on what portion of the whole farm had this (these) CSAF practice(s) ever been used by the primary operator? If multiple practices are planned to be implemented in this field, enter the value that best corresponds to the farm's prior experience with the planned set of practices.</p> <p><b>Data type:</b> List</p> <p><b>Measurement unit:</b> Category</p> <p><b>Logic:</b> None – all respond</p> <p><b>Data collection level:</b> Field</p> | <p><b>Reporting question:</b> What percent of the farm has implemented this CSAF practice (combination) previously?</p> <p><b>Select multiple values:</b> No</p> <p><b>Allowed values:</b></p> <ul style="list-style-type: none"> <li>• Never used</li> <li>• Used on less than 25% of operation</li> <li>• Used on 25-50% of operation</li> <li>• Used on 51-75% of operation</li> <li>• Used on more than 75% of operation</li> </ul> <p><b>Required:</b> Yes</p> <p><b>Data collection frequency:</b> Initial enrollment</p> |
|---|---|

**Field any CSAF practice**

|  |   |
|--|---|
| <p><b>Data element name:</b> Field any CSAF practice</p> <p><b>Description:</b> Prior to enrollment, have any CSAF practice or practices been used in this field in the past 3 years? CSAF practices are included in a list in Appendix A.</p> <p><b>Data type:</b> List</p> <p><b>Measurement unit:</b> Category</p> <p><b>Logic:</b> None – all respond</p> <p><b>Data collection level:</b> Field</p> | <p><b>Reporting question:</b> What is this field's prior experience with CSAF practices?</p> <p><b>Select multiple values:</b> No</p> <p><b>Allowed values:</b></p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> <p><b>Required:</b> Yes</p> <p><b>Data collection frequency:</b> Initial enrollment</p> |
|--|---|

**Practice past use - this field**

|  |   |
|--|---|
| <p><b>Data element name:</b> Practice past use - this field</p> <p><b>Description:</b> Prior to enrollment, had this (these) CSAF practice(s) been used in this field in the in the past 3 years? Enter yes if all of the practices had been used previously in this field; enter some if multiple practices are being implemented and one or more, but not all of the practices had been used previously in this field; and enter no if none of the practices had been used previously in this field.</p> <p><b>Data type:</b> List</p> <p><b>Measurement unit:</b> Category</p> <p><b>Logic:</b> None – all respond</p> <p><b>Data collection level:</b> Field</p> | <p><b>Reporting question:</b> Have this CSAF practice (combination) been implemented previously in this field?</p> <p><b>Select multiple values:</b> No</p> <p><b>Allowed values:</b></p> <ul style="list-style-type: none"> <li>• Yes</li> <li>• Some</li> <li>• No</li> <li>• I don't know</li> </ul> <p><b>Required:</b> Yes</p> <p><b>Data collection frequency:</b> Initial enrollment</p> |
|--|---|


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Practice type**

|  |   |
|--|---|
| <b>Data element name:</b> Practice type 1-7  | <b>Reporting question:</b> What CSAF practice is being implemented in this field through the project? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> See list in Appendix A   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Initial enrollment  |

**Practice standard**

|   |  |
|---|--|
| <b>Data element name:</b> Practice standard 1-7   | <b>Reporting question:</b> What standard does the CSAF practice follow?                                    |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• NRCS</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Initial enrollment   |

**Planned practice implementation year**

|  |  |
|--|--|
| <b>Data element name:</b> Practice 1-7 implementation year   | <b>Reporting question:</b> What year is the CSAF practice planned to be implemented? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Integer  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Year  | <b>Allowed values:</b> 2022-2030   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Initial enrollment                                 |

**Practice extent**

|   |  |
|---|--|
| <b>Data element name:</b> Practice 1-7 extent   | <b>Reporting question:</b> To what extent is the practice implemented? |
| <b>Description:</b> Total area, length, or head where the practice is being implemented in the field specified by the contract. |  |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No                                      |
| <b>Measurement unit:</b> Extent   | <b>Allowed values:</b> .01-100,000                                     |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Initial enrollment                   |



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**Practice extent unit**

**Data element name:** Practice 1-7 extent unit      **Reporting question:** Unit for extent of practice implementation

**Description:** Unit for extent of practice implementation on the field specified by the contract. If “other” is chosen, use the additional column to enter the appropriate unit.

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Field

**Data collection frequency:** Initial enrollment

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CSAF Practice Sub-questions

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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
Farm Summary**Unique IDs**

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

**Producer TA received**

**Data element name:** Producer TA received 1-3  
**Reporting question:** What types of technical assistance were provided to this producer?

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

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Producer

**Data collection frequency:** Quarterly

**Producer incentive amount**

**Data element name:** Producer incentive amount  
**Reporting question:** What is the total value of financial incentives provided to this producer?

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

**Data type:** Decimal

**Select multiple values:** NA

**Measurement unit:** Dollars

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

**Logic:** None – all respond

**Required:** Yes

**Data collection level:** Producer

**Data collection frequency:** Quarterly


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


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


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


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

|   |  |
|---|--|
| <b>Data element name:</b> Commodity type  | <b>Reporting question:</b> What type of commodity is produced from this field? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> FSA commodity list                                      |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Quarterly                                    |

**Practice type**

|   |   |
|---|---|
| <b>Data element name:</b> Field practice type 1-7   | <b>Reporting question:</b> What CSAF practice is being implemented in this field through the project? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> See list in Appendix A   |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Quarterly   |

**Date practice complete**

|  |   |
|--|---|
| <b>Data element name:</b> Date practice complete   | <b>Reporting question:</b> When did the project certify CSAF practice implementation as complete? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Date   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> MM/DD/YYYY  | <b>Allowed values:</b> 01/01/2023 – 12/31/2030  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly   |




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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

**Field commodity value**

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

**Field commodity volume**

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

**Field commodity volume unit**

|  |   |
|--|---|
| <b>Data element name:</b> Field commodity volume unit  | <b>Reporting question:</b> What is the unit of volume?  |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Bushels</li> <li>• Carcass weight pounds</li> <li>• Gallons</li> <li>• Head</li> <li>• Linear feet</li> <li>• Liveweight pounds</li> <li>• Pounds</li> <li>• Tons</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly   |

**Cost of implementation**

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


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

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

**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Cost coverage****Data element name:** Cost coverage**Reporting question:** What percent of the practice cost is covered by the incentive?**Description:** Estimated proportion of total annual cost of implementing the practice(s) that is covered by project incentives.**Data type:** Integer**Select multiple values:** No**Measurement unit:** Percent**Allowed values:** 0-100**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field GHG monitoring****Data element name:** Field GHG monitoring 1-3**Reporting question:** How were GHG impacts monitored in this field?**Description:** Up to the top three forms of monitoring GHG benefits as part of MMRV requirements. Monitoring is defined as ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time. Include up to 3 methods, based on which methods are most commonly used for this field. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 GHG monitoring methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other GHG monitoring methods as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

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


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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Field GHG calculations**

|   |  |
|---|--|
| <b>Data element name:</b> Field GHG calculations  | <b>Reporting question:</b> What methods are used to calculate GHG benefits in this field?  |
| <b>Description:</b> List the method(s) used to calculate GHG benefits in this field. If yes to direct physical measurements, submit result reports (see <i>Supplemental Data Submission – Field direct GHG measurement results</i> ). |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Models</li> <li>• Direct field measurements</li> <li>• Both</li> </ul> |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Quarterly  |

**Field official GHG calculation**

|  |  |
|--|--|
| <b>Data element name:</b> Field official GHG calculation   | <b>Reporting question:</b> What method was used to calculate the official GHG benefits in this field?                  |
| <b>Description:</b> List the method used to calculate the official GHG benefits in this field that are reported as part of the project's aggregate impact. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Models</li> <li>• Direct field measurements</li> </ul> |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly  |

**Field official GHG ER**

|  |   |
|--|---|
| <b>Data element name:</b> Field official GHG emission reductions   | <b>Reporting question:</b> What are the estimated total GHG emission reductions (CO <sub>2</sub> eq) in this field? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly   |

**Field official carbon stock**

|   |  |
|---|--|
| <b>Data element name:</b> Field official carbon stock   | <b>Reporting question:</b> How much carbon has been sequestered in this field? |
| <b>Description:</b> 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 <sub>2</sub> eq. |  |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Quarterly                                    |

**USDA** Partnerships for Climate-Smart Commodities Data Dictionary for Recipients  
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**Field official CO2 ER**

|  |  |
|--|--|
| <b>Data element name:</b> Field official CO2 emission reductions   | <b>Reporting question:</b> What are the estimated total CO2 emission reductions in this field? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub>   | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly  |

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**Field official CH4 ER**

|  |  |
|--|--|
| <b>Data element name:</b> Field official CH4 emission reductions   | <b>Reporting question:</b> What are the estimated total CH4 emission reductions in this field? |
| <b>Description:</b> 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 <sub>4</sub> = 25 tons of CO <sub>2</sub> eq. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons CH4 reduced in CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly  |

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**Field official N2O ER**

|  |  |
|--|--|
| <b>Data element name:</b> Field official N2O emission reductions   | <b>Reporting question:</b> What are the estimated total N2O emission reductions in this field? |
| <b>Description:</b> 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 <sub>2</sub> O = 298 tons of CO <sub>2</sub> eq. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons N2O reduced in CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly  |

---

**Field offsets produced**

|  |  |
|--|--|
| <b>Data element name:</b> Field offsets produced   | <b>Reporting question:</b> How many carbon offsets have been produced in this field? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000  |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Quarterly  |

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## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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**Field insets produced**


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**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<sub>2</sub>eq

**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

---


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

|   |   |
|---|---|
| <b>Data element name:</b> Commodity type 1-6  | <b>Reporting question:</b> What type of commodity(ies) is produced from this field? |
| <b>Description:</b> 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 |   |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> FSA commodity list   |
| <b>Logic:</b> None – all respond  | <b>Required:</b> If project calculates GHG benefits using multiple methods          |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual  |

**Practice type**

|  |   |
|--|---|
| <b>Data element name:</b> Practice type 1-7  | <b>Reporting question:</b> What CSAF practice is being implemented by this project? |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> See list in Appendix A                                       |
| <b>Logic:</b> None – all respond   | <b>Required:</b> If project calculates GHG benefits using multiple methods          |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |




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


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
**Model start date**

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

**Model end date**

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

**Total GHG benefits estimated**

|  |   |
|--|---|
| <b>Data element name:</b> Total GHG benefits estimated   | <b>Reporting question:</b> What is the alternate estimate of the field's total GHG emission reductions? |
| <b>Description:</b> Total greenhouse gas emission reductions from practice implementation in the field estimated using an alternate model. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> If project calculates GHG benefits using multiple methods                              |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |

**Total carbon stock estimated**

|  |   |
|--|---|
| <b>Data element name:</b> Total carbon stock estimated   | <b>Reporting question:</b> What is the alternate estimate of how much carbon has the field has sequestered? |
| <b>Description:</b> 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 <sub>2</sub> eq. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub> eq  | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> If project calculates GHG benefits using multiple methods                                  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |

**Total CO<sub>2</sub> estimated**

|  |   |
|--|---|
| <b>Data element name:</b> Total CO <sub>2</sub> estimated  | <b>Reporting question:</b> What is the alternate estimate of the field's total CO <sub>2</sub> emission reductions? |
| <b>Description:</b> Total carbon dioxide emission reductions based on practice implementation in the field estimated using an alternate model. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CO <sub>2</sub>   | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> If project calculates GHG benefits using multiple methods  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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**Total CH4 estimated**

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**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<sub>4</sub> = 25 tons of CO<sub>2</sub>eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO<sub>2</sub>eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual


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**Total field N2O estimated**

---

**Data element name:** Total N2O estimated**Reporting question:** What is the alternate estimate of the field's total N2O emission reductions?**Description:** Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N<sub>2</sub>O = 298 tons of CO<sub>2</sub>eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO<sub>2</sub>eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual

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**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
 February 2023
GHG Benefits - Measured**Unique IDs**

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

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

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

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

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**Measurement start date**

**Data element name:** Measurement start date

**Reporting question:** On what date did the measurement start?

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

**Data type:** Date

**Select multiple values:** No

**Measurement unit:** MM/DD/YYYY

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

**Logic:** None – all respond

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

**Data collection level:** Field

**Data collection frequency:** Annual

---

**Measurement end date**

**Data element name:** Measurement end date

**Reporting question:** On what date did the measurement end?

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

**Data type:** Date

**Select multiple values:** No

**Measurement unit:** MM/DD/YYYY

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

**Logic:** None – all respond

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

**Data collection level:** Field

**Data collection frequency:** Annual

---

**Total CO2 reduction calculated**

**Data element name:** Total CO2 reduction calculated

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

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

**Data type:** Decimal

**Select multiple values:** No

**Measurement unit:** Metric tons CO<sub>2</sub>

**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<sub>2</sub>eq.

**Data type:** Decimal

**Select multiple values:** No

**Measurement unit:** Metric tons CO<sub>2</sub>eq

**Allowed values:** 0-10,000,000

**Logic:** None – all respond

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

**Data collection level:** Field

**Data collection frequency:** Annual



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**Total CH4 reduction calculated**

|  |   |
|--|---|
| <b>Data element name:</b> Total CH4 reduction calculated   | <b>Reporting question:</b> What are the total measured CH4 emission reductions?   |
| <b>Description:</b> Total annual methane emission reductions based on practice implementation in the field calculated from in-field measurements. Conversion rate is one ton of CH <sub>4</sub> = 25 tons of CO <sub>2</sub> eq. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons CH4 reduced in CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |

**Total N2O reduction calculated**

|  |   |
|--|---|
| <b>Data element name:</b> Total N2O reduction calculated   | <b>Reporting question:</b> What are the total measured N2O emission reductions?   |
| <b>Description:</b> 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 <sub>2</sub> O = 298 tons of CO <sub>2</sub> eq. |   |
| <b>Data type:</b> Decimal  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Metric tons N2O reduced in CO <sub>2</sub> eq   | <b>Allowed values:</b> 0-10,000,000   |
| <b>Logic:</b> None – all respond   | <b>Required:</b> If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |

**Soil sample result**

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



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**Soil sample result unit**

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

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

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

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

**Logic:** None – all respond

**Required:** If a project conducts soil samples in this field

**Data collection level:** Field

**Data collection frequency:** Annual

---

**Measurement type**

**Data element name:** Measurement type

**Reporting question:** What type of analysis was conducted for this soil sample?

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

**Data type:** List

**Select multiple values:** No

**Measurement unit:** Category

**Allowed values:**

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

**Logic:** None – all respond

**Required:** If a project conducts soil samples in this field

**Data collection level:** Field

**Data collection frequency:** Annual

---


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### Additional Environmental Benefits

#### **Unique IDs**

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

#### **Environmental benefits**

|  |  |
|--|--|
| <b>Data element name:</b> Environmental benefits   | <b>Reporting question:</b> Are environmental benefits other than GHGs being tracked in the field?                    |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> None – all respond   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual   |

#### **Reduction in nitrogen loss**

|   |  |
|---|--|
| <b>Data element name:</b> Reduction in nitrogen loss  | <b>Reporting question:</b> Are reductions in nitrogen losses being tracked in the field?                             |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> Respond if yes to 'Environmental benefits'  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual   |

#### **Reduction in nitrogen loss amount**

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




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**Reduction in nitrogen loss amount unit**

|   |  |
|---|--|
| <b>Data element name:</b> Reduction in nitrogen loss amount unit  | <b>Reporting question:</b> What is the unit for how much reduction in nitrogen losses have been measured in the field?                                   |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Kilograms</li> <li>• Metric tons</li> <li>• Pounds</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> Respond if yes to 'Reduction in nitrogen loss'  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual   |

**Reduction in nitrogen loss purpose**

|  |  |
|--|--|
| <b>Data element name:</b> Reduction in nitrogen loss purpose   | <b>Reporting question:</b> What is the purpose of tracking reduction in nitrogen losses?   |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Commodity marketing</li> <li>• Producing insets</li> <li>• Producing offsets</li> <li>• I don't know</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> Respond if yes to 'Reduction in nitrogen loss'   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Project  | <b>Data collection frequency:</b> Annual   |

**Reduction in phosphorus loss**

|  |  |
|--|--|
| <b>Data element name:</b> Reduction in phosphorus loss   | <b>Reporting question:</b> Are reductions in phosphorus losses being tracked in the field?                           |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul> |
| <b>Logic:</b> Respond if yes to 'Environmental benefits'   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual   |

**Reduction in phosphorus loss amount**

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


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**Reduction in phosphorus loss amount unit**


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**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

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**Other water quality**


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**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

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**Other water quality type**

|   |   |
|---|---|
| <b>Data element name:</b> Other water quality type  | <b>Reporting question:</b> What type of other water quality metric have been measured in the field?                           |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b>  |
|   | <ul style="list-style-type: none"> <li>• Sediment load reduction</li> <li>• Temperature</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> Respond if yes to 'Other water quality'   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual  |

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**Other water quality amount**

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

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**Other water quality amount unit**

|  |   |
|--|---|
| <b>Data element name:</b> Other water quality amount unit  | <b>Reporting question:</b> What is the unit for the reduction in other water quality metrics measured in the field?   |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b>  |
|  | <ul style="list-style-type: none"> <li>• Degrees F</li> <li>• Kilograms</li> <li>• Kilograms per liter</li> <li>• Metric tons</li> <li>• Pounds</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> Respond if yes to 'Other water quality'  | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |

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**Other water quality purpose**

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

**Water quantity**

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

**Water quantity amount**

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

**Water quantity amount unit**

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


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**Water quantity purpose**

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

**Reduced erosion**

|   |  |
|---|--|
| <b>Data element name:</b> Reduced erosion   | <b>Reporting question:</b> Is reduced soil erosion being tracked in the field?                                       |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don’t know</li> </ul> |
| <b>Logic:</b> Respond if yes to ‘Environmental benefits’  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual   |

**Reduced erosion amount**

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

**Reduced erosion amount unit**

|  |  |
|--|--|
| <b>Data element name:</b> Reduced erosion unit   | <b>Reporting question:</b> What is the unit for the amount of erosion reduction measured?                  |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b> <ul style="list-style-type: none"> <li>• Tons</li> <li>• Other (specify)</li> </ul> |
| <b>Logic:</b> Respond if yes to ‘Reduced erosion’  | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual   |



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

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


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

- Yes
- No
- I don't know

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

- Kilowatt hours
- Other (specify)

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


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**Reduced energy use purpose**

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

**Avoided land conversion**


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

**Avoided land conversion amount**

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

**Avoided land conversion amount unit**

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


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**Avoided land conversion purpose**

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

**Improved wildlife habitat**

|  |   |
|--|---|
| <b>Data element name:</b> Improved wildlife habitat  | <b>Reporting question:</b> Are improvements to wildlife habitat being tracked in the field?   |
| <b>Description:</b> 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. |   |
| <b>Data type:</b> List   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Category  | <b>Allowed values:</b>  |
|  | <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don’t know</li> </ul> |
| <b>Logic:</b> Respond if yes to ‘Environmental benefits’   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field  | <b>Data collection frequency:</b> Annual  |

**Improved wildlife habitat amount**

|   |   |
|---|---|
| <b>Data element name:</b> Improved wildlife habitat amount  | <b>Reporting question:</b> How much improved wildlife habitat has been measured in the field? |
| <b>Description:</b> Total amount of improved wildlife habitat that is measured in and around the enrolled fields. |   |
| <b>Data type:</b> Decimal   | <b>Select multiple values:</b> No   |
| <b>Measurement unit:</b> Amount   | <b>Allowed values:</b> 0-1,000,000  |
| <b>Logic:</b> Respond if yes to ‘Improved wildlife habitat’   | <b>Required:</b> Yes  |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual  |

**Improved wildlife habitat amount unit**

|   |  |
|---|--|
| <b>Data element name:</b> Improved wildlife habitat unit  | <b>Reporting question:</b> What is the unit for the amount of improved wildlife habitat measured in the field? |
| <b>Description:</b> 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. |  |
| <b>Data type:</b> List  | <b>Select multiple values:</b> No  |
| <b>Measurement unit:</b> Category   | <b>Allowed values:</b>   |
|   | <ul style="list-style-type: none"> <li>• Acres</li> <li>• Linear feet</li> <li>• Other (specify)</li> </ul>    |
| <b>Logic:</b> Respond if yes to ‘Improved wildlife habitat’   | <b>Required:</b> Yes   |
| <b>Data collection level:</b> Field   | <b>Data collection frequency:</b> Annual   |




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**Improved wildlife habitat purpose**


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**Data element name:** Improved wildlife habitat purpose

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

**Data type:** List

**Measurement unit:** Category

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

**Select multiple values:** No

**Allowed values:**

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

**Logic:** Respond if yes to 'Improved wildlife habitat'

**Required:** Yes

**Data collection level:** Field

**Data collection frequency:** Annual

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**CSAF Practice Sub-questions**

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

Table 11. Follow-on questions for select CSAF practices

| Practice name and code  | Follow-up question  | Options (select one)                                    |
|---|---|---|
| Alley Cropping (CPS 311)  | Species category (select most common/extensive type if using more than one) | Coniferous trees<br>Deciduous trees<br>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                                       |
| Digester type   | Digester type   | Deep pit  |
|   |   | Dry lot   |
|   |   | Dry stacking/solid storage                              |
|   |   | Pasture/range/paddock                                   |
|   |   | Poultry with bedding                                    |
|   |   | Poultry without bedding (e.g., high rise)               |
|   |   | Slurry tank/basin                                       |
|   |   | Covered lagoon with energy generation                   |
|   |   | Covered lagoon with flaring                             |
|   |   | Covered lagoon (no energy generation or flaring)        |
| Additional feedstock source (select most common if using more than one) | Additional feedstock source (select most common if using more than one)     | Complex mix with energy generation                      |
|   |   | Plug flow with energy generation                        |
|   |   | Other (specify)   |
|   |   | Food waste  |
|   |   | Straw or bedding  |
|   |   | Wastewater  |
|   |   | Other (specify)   |


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


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


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


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


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|   |   |  |
|---|---|--|
| Range Planting (CPS 550)                                | Species category (select most common/extensive type if using more than one) | Forbs<br>Grasses<br>Legumes<br>Shrubs<br>Trees   |
| Residue and Tillage Management – No-till (CPS 329)      | Surface disturbance   | None<br>Seed row only  |
| Residue and Tillage Management – Reduced Till (CPS 345) | Surface disturbance   | None<br>Seed row/ridge tillage for planting<br>Shallow across most of the soil surface<br>Vertical/mulch |
| Riparian Forest Buffer (CPS 391)                        | Species category (select most common/extensive type if using more than one) | Coniferous trees<br>Deciduous trees<br>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<br>Forbs<br>Grasses<br>Legumes<br>Rushes<br>Sedges   |
| Roofs and Covers (CPS 367)                              | Roof/cover type   | Concrete<br>Flexible geomembrane<br>Metal<br>Timber<br>Other (specify)                                   |
| Silvopasture (CPS 381)                                  | Species category (select most common/extensive type if using more than one) | Coniferous trees<br>Deciduous trees<br>Forage<br>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<br>Fallow<br>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<br>Deciduous trees<br>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<br>Grass forb mix<br>Grass legume mix  |
|   | Barrier width (feet)  | 3-1,000  |


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



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

## Appendix A: Climate-smart Agriculture and Forestry Practices

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

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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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

 Partnerships for Climate-Smart Commodities Data Dictionary for Recipients  
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Other CSAF Practices

Traditional or cultural practices

Microbial products

Solar power generation

Grain bin construction

Pre-season drainage


**Partnerships for Climate-Smart Commodities Data Dictionary for Recipients**  
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**Appendix B: Commodity List****CROPS**

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



## Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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

**South Carolina State University- 1890 Research and Extension**  
**Regenerative Agriculture and its Potential in Climate Smart Commodities to enhance the**  
**Sustainability of Underserved and Limited Resources Farmers in South Carolina (SC)**

**Project Narrative**

**1. Executive Summary of Pilot Project**

SC State University 1890 and its collaborative partners Mixon Seed and the South Carolina Black Farmers Coalition propose to develop an innovative and strategic project to recruit and enhance the capacity of limited resource and historically underserved farmers in South Carolina. The farmers will participate in a pilot demonstration project focusing on leafy greens (vegetables/crops) cultivated as economically and nutritionally important cash crops. The project's goal is to recruit farmers to adopt emission reduction, climate smart practices, and agriculture conservation practices, such as cover crop, reduced tillage, and mulching. The learned skills will help to maximize soil health and carbon sequestration. The proposed project entitled "Regenerative Agriculture and its Potential in Climate Smart Commodities to enhance the Sustainability of Underserved and Limited Resources Farmers," will be a four-year endeavor with the farmer advocacy organization (South Carolina Black Farmers Coalition), a private seed company (Mixon Seed) and higher education institution (SC State University). It will deliver innovative applied research and extension programming to underserved communities, especially, socially disadvantaged, and limited resources farmers and farm businesses.

The project will be conducted across all 46 counties of South Carolina. It will be implemented through seven of the 1890 Research and Extension Regional Offices /Centers which serves 32 of the 46 counties in South Carolina. The counties will hereafter be referred to as "Growing Regions." The project will examine the quantification of soil greenhouse emission where edible cover crops such as leafy greens grains and non-edible cover crops classified as climate smart resilience crops, are cultivated by underserved farmers. The proposed project will involve crops with dual purpose and benefits. The leafy green crops will serve as a cash crop with potential to generate residual income for the farmers. The cover crop will serve as climate smart mitigating crops and greenhouse gas reducers.

Research reveals cover crops can improve soil health by sequestering carbon into the soil, creating a favorable microbial environment, and improving soil water holding capacity, thereby, making soil more adaptable and resilient to severe climate change related disasters. The dual-purpose cover crops will be cultivated by farmers who live within the seven growing regions of SC. The proposed project will help boost the local economy and provide sources of income for the farmers through the development of markets for climate-smart commodities. Additional anticipated benefits of this innovative dual-purpose project are to strengthen a community/ regional based food system, help reduce carbon emissions associated with long distance transportation of fresh produce, promote food sovereignty, and create a sustainable and climate resilient food system and supply chain. Farmers will be incentivized financially for the adoption and implementation of selected climate-smart (CS) production practices (cover crops, reduced tillage and mulching) identified by research as best practices. The project will measure and verify the carbon and greenhouse gas (GHG) benefits associated with the CS practices and will support the development of markets for the resulting climate-smart commodities (CSC).

## **Introduction**

In South Carolina, historically underserved, socially disadvantaged, and limited resources farmers need a program that will boost their production potential and improve the quality of their farmlands and soils. The proposed regenerative agriculture project envisions an agricultural practice that possesses an immense potential to remove carbon from the atmosphere and puts it back in the soil; and ability to provide significant economic and environmental benefits to the targeted audience and the climate<sup>1</sup>. The literature has indicated there is no singular solution to rebalancing the global climate system. The solution will require multifaceted methods and practices, which is the basis of this critical dual-purpose project. Informed by data, it is universally accepted that many solution's 'wedges' are required to reduce greenhouse gas emissions and remove carbon from the atmosphere, and regenerative agriculture is one of them. The socio-economic and political barriers against climate change are beginning to lessen or fall as governments, agricultural companies, financial institutions, consumers, and farmers are recognizing the immense potential of building healthy soil to cool the planet<sup>1</sup>.



According to Teal and Burkart (2021), since the beginning of agriculture, approximately 133 gigatons of carbon have been lost from soil globally, the equivalent of 480 GtCO<sub>2</sub> emissions. Much of the loss has occurred since the 19th century due to deforestation, overgrazing, plow-out of prairies, and drainage of wetlands in order to grow crops, as well as degradative practices, such as intensive soil tillage, monoculture cropping, bare fallowing, and heavy reliance on the use of chemical fertilizers and biocides. These agricultural practices damage the microorganisms upon which fertile, carbon-rich soils depend<sup>2</sup>.

The proposed regenerative agriculture project can significantly increase the potential for carbon removal on agricultural land. According to Sanderman (2017), regenerative agriculture, as a diverse portfolio of practices can be adapted to specific regions and crop types. They can also play a leading role in tackling climate change with the potential to remove 100-200 GtCO<sub>2</sub> by the end of the century.

Research also indicated excess nitrogen fertilizer applied in conventional production degrades into nitrous oxide, which increases greenhouse warming. Nitrous oxide is 300 times more potent than CO<sub>2</sub>, as a greenhouse gas, contributing 2.8 Gt CO<sub>2</sub>e/year (5.6% of total warming). Excess synthetic fertilizer also accelerates carbon dioxide release from the soil. The problem is exacerbated by GMO herbicide resistant crops that require increased applications of pesticides and 50-70% more synthetic fertilizer to maintain yields compared to conventional crops<sup>3</sup>. Carbon is often used as the measuring stick for CO<sub>2</sub> emissions. One ton of carbon is equal to about 3.7 tons of carbon dioxide.

Thus, it is a reality that soil feeds plants, and plants feed the soil. Healthy soil increases root mass and makes the plants more efficient in nutrient/water uptake and retention. The roots exudates from healthy plant roots influence the microbial distribution in the rhizosphere. The symbiotic association between plant roots and soil rhizomicrobiome can promote plant growth, and trigger systemic resistance in plants, protecting against diseases and insects. This results in a reduced need for synthetic fertilizers and pesticides and a more sustainable agricultural production system<sup>4</sup>.

Cover crops remove carbon dioxide from the atmosphere as they grow. When the legume crops or grasses are turned under after termination, they increase soil carbon and nitrogen. Cover crops can

truly mitigate climate change, as the carbon dioxide they absorb is stored in the soil as carbonaceous plant material. Soil microbiome changes induced by soil incorporation improve soil structure, reducing carbon loss by oxidation. Furthermore, cover crops can reduce needed fertilizer through nitrogen fixation, reducing nitrous oxide emissions<sup>5</sup>. Some of the edible cover crops classified as leafy green have deep tap root system that help loosen compacted soil and encourage more efficient water filtration and nutrient acquisition. Based on research findings, it is strongly believed that the proposed project at SC State University is most timely and innovative.

According to Quarles (2018), adoption and successful implementation of climate smart/regenerative agriculture techniques could reduce greenhouse gases by at least 17% each year. Quarles (2018) emphasizes the reductions are possible and measurable. The intent of the innovative project is to develop strategies to incentivize and enhance the interest of limited resource and socially disadvantaged farmers in adapting climate smart agricultural practices through adoption, implementation, and reporting of commodity-based carbon credits, using the following objectives:

- 1) Identify and select targeted underserved and limited resource farmers in South Carolina, especially, the seven regions interested in adopting regenerative agriculture to mitigate climate change. The SC State 1890 Research and Extension Growing Regions will include: Midlands, Coastal, Low Country, Upstate, Santee Wateree, Piedmont, and Pee Dee regions. Moreover, interested underserved farmers from counties not currently served by SC State 1890 will also be targeted, recruited, and enrolled into the project.
- 2) Foster and support communities to practice peer-to-peer learning and train the trainer model on the production of leafy greens/grain cover crops as climate smart commodities of choice for the project. The project will place a high premium in a rooted honor and belief system that limited resources farmers have more faith in what they are being told if they are told by a fellow farmer. The “go and see it happening locally philosophy” is a tremendous concept, if someone is doing it locally and they can see that it works then it will spread much faster.
- 3) Develop a sustainable assessment protocol and method with limited resource farmers, businesses, communities, investors, and the government on the importance of regenerative agriculture and climate smart farming.

**a) Contact Information**

The leadership and day-to-day management and operations team will consist of experienced applied researchers and extension/outreach service specialists. Together, the team brings more than 70 years of administrative, management, project implementation, and agriculture expertise.

Dr Lamin E. Drammeh- PI (Principal Investigator) ([ldrammeh@scsu.edu](mailto:ldrammeh@scsu.edu))

Dr. Florence Anoruo- Co-PI ([fanoruo@scsu.edu](mailto:fanoruo@scsu.edu))

Dr. Joshua Idassi- Co-PI ([jidassi@scsu.edu](mailto:jidassi@scsu.edu))

SC State University 1890 Research and Extension

P. O. Box 8103

300 College Street N.E.

Orangeburg, SC 29117

**b) List of Significant Project Partners**

- |   |
|---|
| 1. Mixon Seed Company – Private Seed Company                            |
| 2. South Carolina Black Farmers Coalition – Not-for-Profit Organization |

**c) List of underserved/minority-focused project partners**

South Carolina Black Farmers Coalition (SCBFC)

**d) Compelling need for the project**

According to National Agricultural Statistics Service (NASS) Census of Agriculture, 2017, only 6% and 23% of South Carolinian farmers have adopted cover crops and reduced till as climate-smart (CS) practices, respectively. Economic and practicality of adoption and implementation of cover crops as a CS commodity and conservation practice remain an obstacle for farmers to appreciate the environmental advantages of incorporating CS practices into their production of crop production systems. Increasing the interest and knowledge of farmers in the importance of integrating CS practices into their respective crop production systems through research, education, and outreach is paramount, especially with the frequency and intensity of climate related disasters increasing at an alarming rate. Similarly, research and education on measurement of Greenhouse Gas (GHG)

emissions and carbon sequestration associated with land use decisions and crop production systems are relatively uncommon in SC (NASS Census of Agriculture, 2017).

Cover crops are plants used primarily to slow erosion, improve soil health, enhance water availability, smother weeds, help control pests and diseases and increase biodiversity on the farm. They can be planted in advance of other cash crops or post-harvest, and typically are not harvested as a crop. However, some cover crops can be cultivated as edible and economically important cash crops, while still performing their ecosystem services as stipulated above. These include leafy greens (mustards, collards, turnips), radishes, and grains (rye, wheat, oat, barley).

Cover crops can capture atmospheric carbon dioxide into soils according to USDA (United States Department of Agriculture). Cover crops like peas can be used as a nitrogen source to the soil, whereas non-leguminous cover crops can trap nitrogen in the soil, thereby preventing it from leaching into groundwater or running off into surface water. There is a vital environmental need to adapt conservation practice of cover cropping to improve soil health and crop productivity in the Southeastern United States. Soils in certain regions across South Carolina are poor with limited organic matter content (<1%) (McNulty *et al.*, 2015). A sizable portion of Southeastern soils are plagued with subsurface compacted zone, known as hardpan, which restricts root penetration and make the crops vulnerable to drought stress, reduces yields, and limits adaptation of cropping systems to climate change. Widespread droughts and elevated temperatures are also contributing factors to soil degradation, and conventional crop land tillage systems intensify the problem (Thaler *et al.*, 2021). To manage soil compaction, farmers practice tillage, which adds to production costs, depletes organic matter, and leaves the soil prone to re-compaction. Given these challenges, it is imperative that CS practices are used to increase soil organic carbon, soil health, crop productivity, and climate resilience.

Despite the benefits of cover crops, farmers continue to face many challenges when attempting to integrate cover crops within their production systems. Cover crops are an additional expense that sometimes has little to no short-term financial benefit. It is understandably difficult for farmers to justify the use of sustainable farming measures such as cover crops when profit is minimal each year.

Using leafy greens as cover crop and planting other non-edible cover crops which can be ploughed into the soil as green manure, will help improve the soil organic matter and overall nutrient content. Therefore, the soil ability to sequester carbon, which will improve microbial activity, and increase crop productivity will be enhanced. Cover crops will reduce the use of machinery for weed control and other activities which increase soil compaction.

SC State 1890 Research and Extension Program currently conducts education activities for SC farmers on the importance of cover cropping and incorporating it into the crop production systems. With incorporation of climate smart agricultural technologies into the training programs, farmers will be well equipped to increase their overall productivity, through processes such as integrated soil fertility management that will boost their incomes and productivity. According to the United Nation's report titled State of Food and Agriculture (2016), the adoption of climate smart practices by farmers will help reduce hunger and poverty. Climate smart practices will also enhance the quality and shelf life of agricultural produce.

SC State will provide technical support and training services to the enrolled farmers. The SC State Project Leadership Team (PLT), Project Management Team (PMT), in concert with the Extension staff, will assist with developing training courses, conservation practices, marketing climate-Smart commodities, workshops, planning of annual meetings, and the implementation of the web-based interface. The Project Management Team and Extension staff will institute a train-the-trainer model which will involve preparation of the Mentor Farmers on the adoption and implementation of climate smart commodities practices in their training of novice farmers. Seven (one in each region) training sessions are required to ensure proper coverage and representation of the geographic areas and adequate time to conduct visits and training workshops. Cover crop practice will be used for training, testing blend, and for demonstrations for potential leafy green participants at their farms.

Public-private partnership is vital to delivering a strategic cost reduction plan and sustainable capacity for lasting success to participating farmers through the project. To address the costs of implementing cover crops into climate smart agriculture practices, we will provide a special blend of CS commodities such as edible cover crop species and specialty crops which include cruciferous

crop collards, forbes, radishes, turnips, and mustards, cabbage, kale, spinach, and others to farmers. The farmers will selectively harvest and consume and/or sell a portion of their cover crops. This service will be provided by Mixon Seed and other partners. Mixon Seed Service is a wholesale seed company based in Orangeburg, SC. It serves the entire Southeast from Florida to Virginia. Mixon Seed is a private company and offers a variety of services including seed production, seed sales, custom blending, seed treating, seed storage and seed distribution to farm businesses. Its mission of making it easier for their clients and business partners to run their businesses complements this unique project.

**e) Approach to minimize transaction costs associated with the project activities.**

All SC State Climate-Smart Regenerative Agriculture Project soil testing transactions will be conducted with the state. SC State University will utilize soil testing laboratories for soil testing services and other technical assistance where possible. Further, SC State University will build budget analysis systems for the various commodities. SC State University extension agents will visit farmers on a regular basis to ensure they are practicing the CS technologies. Webinars, virtual, and in person training sessions will be conducted for the farmers.

**f) Approach to reduce barriers to implementing Climate Smart (CS) practices for the purpose of marketing Climate Smart Commodities (CSC's)**

SC State proposes to conduct a short survey (about 6 questions) on farmers' knowledge of climate change, effect on farming, and their desire to adopt CS practices. This important service will be facilitated and conducted through the county extension agents with assistance from post-docs. The education outreach on cover crops and regeneration will be tailored to address the data collected from the surveys. The commodities marketing activities will be facilitated by a Market Development Consultant (faculty of Marketing in the College of Business and Information Systems). Mixon Seed and South Carolina Black Farmers Coalition will also provide additional technical support for the recruited farmers to understand the advantages of adapting cover crop conservation practices.

**Study locations (7 regions)**

The study will target and focus on underserved farmers living within the seven regional extension office areas and across the State of South Carolina. SC State 1890 Research and Extension

centers/regions are Coastal, Low Country, Midlands, Pee Dee, Piedmont, Santee Wateree, and Upstate. Farmers from regions not currently being served by any of the seven regions would also be targeted for enrollment. The estimated percentage of growers considered to be historically underserved, limited resource, socially disadvantaged, beginning farmers, veterans, and women will be 100 percent of the project participants. The growers will certify they earn less than \$350,000/year.

### **1. Project management capacity of partners**

The project has solicited and secured collaborative engagements from two strategic partners and influential players in the agriculture sector in South Carolina namely: Mixon Seed and South Carolina Black Farmers Coalition.

#### **a) Mixon Seed: Sub-Award I**

Mixon Seed is a leading supplier of a full range of field crop offerings including our own top rated AG South Genetics to regional and national brands line pioneer. Mixon Seed will work with the SC State University team in capacities as a service provider focused on limited resource, underserved smallholder farmers in 32 counties in South Carolina. These include:

- Prepare and provide appropriate cover crop seed blends that include edible species in some mixes,
- Distribution and logistics services to get the seed to farmers in time for planting,
- Agronomic expertise to assist with on-farm plot implementation,
- Marketing expertise to assist in technology transfer and training, and
- Production of educational pamphlets for farmers to cover crops.

#### **Sub-Award Deliverables**

Mixon Seeds will provide cover crop seed varieties for all recruited farmers as well as the SC State 1890 Research and Demonstration Farm in Olar, SC

#### **Seed Supply**

Mixon Seed will provide cover crop choices that are multi-species blends and are project specific blends including small grains (wheat, rye, oats, or triticale) plus a legume (winter peas, vetch,

clover) and leafy green and specialty crops, forbe or brassica (radish, turnip, mustard, collard, kale, spinach, cabbage, etc).

- Mixon Seed will include project specific edible plants (turnip, collard, mustard, etc.) in some blends while others will not. The seeds will be certified to ensure the highest quality and best outcomes.
- Mixon Seed will supply seeds to cover 1596 acres targeted for enrolled farmers and 546 acres at the SC State 1890 Demonstration Research Farm for cumulative total of 2142 over 3 years.
- Mixon seed will provide both edible (cash cover crop) and non-edible (non-cash crop) to all enrolled farmers.

Over the duration of the project, 133 growers are targeted to enroll in the project with cap of 12 acres per conservation practice totaling 1596 acres. The Climate-Smart commodities for the project are all cash crop cover crops. That means that irrespective of the conservation practice selected, all enrollees would be growing cash cover crops with potential opportunity to interplant with non-cash crop cover crops during the active growing seasons, and post-harvest of their cash cover crop.

Furthermore, all enrolled participants will grow cash cover crop as the sole commodity for all three conservation practices.

Year 1-3 - Cover Crop (CPS 340): 38 farmers x max of 12 acres =456 acres

Year 1-3- Reduced Till (CPS 345): 55 farmers x max of 12 acres =660 acres

Year 1-3 Mulching (CPS 484): 40 farmers x max of 12 acres =480 acres

Maximum number of acres over 3 years (enrolled farmers) is 1596. However, the enrolled farmers are encouraged to adopt combine practices which may impact the total number of acreages.

In addition, approximately 182 acres/year x 3 years (546 acres) will be planted with cover crops at the SC State 1890 Demonstration Research Farm, in Olar SC, bringing the cumulative total number of acres that will be planted with cover crop to 2,142.

Therefore, cumulative number of acreages will be 1596 (enrolled farmers) + 546 (SC State 1890 Demonstration Research Farm acreage) = 2142 acres. Total # of acres over 3-year period = 2142



With an average cost of special blend of cover crop seeds per acre at \$70, the total cost for year 1= (456 acres x70= \$31,920) +Year 2 (660 acres x \$70 = \$46,200) + Year 3 (480 acres x \$70= \$33,600) + 546 acres (SC State 1890 Research Farm) x \$70 = \$38,220. = \$149,940

**Total Cost cover crop seeds (edible (cash cover crop) and non-edible (non-cash crop) over 3-year period = \$149,940**

### **Logistics**

Mixon will make the blends in advance of the fall planting season in order to distribute them in time for optimal planting (September – October) and keep them in cold storage to maintain high seed quality. Prior to planting, Mixon Seed will distribute the blends to focal points (1890 Regional Centers/Offices) geographically located with the communities where the local growers and co-operatives reside across the state.

### **On-farm Plot Implementation:**

The goals are to ensure proper blends are identified for a minimum of 133 farmers across the state of South Carolina considering their geography, soil type, climate, and have the needed management plans described so growers are successful in their planting efforts.

Mixon Seed will provide agronomy resources (2 in-house agronomists) who will conduct and provide a minimum of 6 regional workshops focused on technology transfer and demonstration efforts regarding how to implement cover crops properly. The two in-house agronomy resources are:

- a) A small grains breeder and expert in southern adapted cover crops including native species.
- b) A trained agronomist with expertise in crop production in the southeast.

### **Technology Transfer and Training**

Mixon Seed will design and develop educational material prepared in a variety of formats (hard copy, digital), which will be shared with farmers to help them understand the benefits of cover crops and the necessary management practices for best results. This task will be performed by a trained market specialist with a thorough knowledge of agriculture.

**b) South Carolina Black Farmers Coalition (SCBFC): Sub-Award II**

The SC Black Farmers Coalition is a non-profit minority farmer association with 100 underserved farmers as members. The South Carolina Black Farmers Coalition (SCBFC) in partnership with SC State 1890 Research and Extension will concentrate on three key focus areas: Outreach & Awareness, Recruitment, and Mentoring in support of the SC State Climate-Smart Commodities Regenerative Agriculture grant. The SCBFC will utilize master farmers to achieve the focus areas of outreach and awareness, recruitment, and mentoring. The SCBFC will organize and facilitate the enrolled farmers through structured peer-to-peer mentoring and adoptive coaching by master farmers.

The three sections below highlight the key strategies, activities, and projected target population to be reached for each focus area.

**Outreach & Awareness**

The SC Black Farmers Coalition will collaborate with SC State Climate-Smart Project Leadership and Management Teams including regional extension agents as well as the Climate-Smart agent in the recruitment and outreach activities of the Climate-Smart Commodities Regenerative Agriculture Project. The SCBFC will implement a strategic campaign of outreach and awareness designed to recruit and enroll farmers into the Climate-Smart Commodities Regenerative Agriculture grant as well as offer mentoring support to farmers. The recruitment activities will include development and distribution of branded infographics, monthly e-blasts, and bi-weekly posts with photos and/or video content on all SCBFC social media platforms (Facebook and Instagram). The expected reach within the target population of socially disadvantaged farmers in South Carolina is 150-200 per month.

**Recruitment**

SCBFC will identify and designate two Climate Smart consultants to help coordinate activities with each of the SC State 1890 Regional Offices. The consultants will work closely with SC State to recruit farmers into the Climate-Smart Project. The individuals will actively facilitate, and coordinate SCBFC recruitment strategies as stipulated in the sub-award. The current membership of one hundred farmers will also be actively involved in recruitment of farmers who are eligible

for the project and are already growing leafy green vegetables. All recruitment efforts will be coordinated with SC State Climate-Smart Commodities Regenerative Agriculture Project director and Climate-Smart Extension agent as well as Regional Extension agents servicing the communities in which SCBFC will target their recruitment strategy.

### **Mentoring**

SCBFC will organize and conduct mentoring activities that support the sustainability of Climate-Smart commodities adopting practices. The Master farmers recruited by the SCBFC will be paired with beginning farmers on a one-to-one basis. The master mentor farmers will be individuals with fifteen (15) or more years of experience in farming, particularly in the leafy green and/or row crop production. Master farmers will provide demonstration sessions and educational presentations on the three primary Climate-Smart practices stipulated in the project.

## **2. A plan to pilot climate smart agriculture on a large scale.**

### **Description of CS practices to be deployed.**

The project proposes to evaluate cover crops as blended or mixed species on reduced tillage and mulching conservation practice in leafy green cropping systems. The effect on soil microbial organism population and their activity will be determined. The proposed project will measure other parameters such as soil compaction, bulk density, water holding capacity, soil carbon, and overall nutrient content. Soils will be sampled before planting and after harvesting of cover crops to determine nutrient content and nutrient contribution of cover crops to soil. Cover crop tissue will be digested and analyzed for nutrient content at soil/tissue testing laboratory. The project will compare crop yields between control plots and cover crop treated plots. Weed pressure in the cover crop will be sampled using a quadrat three times during the growing season.

**Green House Gas (GHG)** measurements will involve visits to fields and measuring data using Gasmeter greenhouse gas analyzer. This is an in-situ method that gives instantaneous results. Soil carbon will be measured using the loss on ignition method. Model greenhouse gas emissions using cool-farm-tool ([coolfarmtool.com](http://coolfarmtool.com)) and COMET-Farm ([comet-farm.com](http://comet-farm.com)) will be compared to the on-farm and in-situ results. The cool-farm-tool, just as COMET-farm, is an online greenhouse gas, water, and biodiversity calculator for farmers.

**Leafy Greens:** Through the project, farmers will grow leafy greens including collard greens, turnip greens, radishes, mustard greens or kale as cover crops and edible leafy greens. It will be done during the cool season (August through October) and (February through May). The harvested produce will be sent to markets directly. Consumers will be surveyed for their comments on the quality and cost of the produce.

1. Recruiting small-scale and underserved farmers with acreages ranging from 1-20 acres for adoption of Climate Smart Agricultural/Conservation practices in cover crops and leafy greens. Every recruited farmer must complete a Climate-Smart Interest Form before enrollment into the program. The form requires interested farmers to certify (check off a box) whether they are enrolled in any other USDA-NRCS program (e.g., EQUIP) and if they have a Farm track number. Additionally, each farmer farm track number information will be cross-referenced against the Farm Service Agency's (FSA) data base for verification. Therefore, no enrolled farmers will receive duplicate financial incentive payment or cover crop supplies through the project.

Also, in the interest form that must be completed by all recruited and enrolled participants, they are required to indicate whether currently enrolled/ participating and receiving incentive payments from other USDA conservation programs. Their responses will be verified using Farm numbers issued by respective FSA offices for any land designated for use in the Climate-Smart Commodities project, before formal enrollment into the program.

**Table 1.** Summary of Climate-smart practices being deployed in the pilot project.

| <b>Climate-Smart Practice</b> | <b>NRCS Conservation Practice Standard</b> | <b>Climate-Smart Commodity</b> | <b>Benefits</b> |
|-------------------------------|--|--------------------------------|-----------------|
|                               |  |                                |                 |

|              |         |   |  |  |
|--------------|---------|---|--|--|
| Cover Crops  | CPS 340 | Leafy Green Cover Crops and Specialty Crop (Turnip, Radish, etc.)   | <ul style="list-style-type: none"> <li>- increase soil organic matter</li> <li>- improve soil aggregate stability</li> <li>- improve water quality</li> <li>- reduce weed &amp; pest pressure</li> </ul> | <ul style="list-style-type: none"> <li>- improve moisture management</li> <li>- reduce soil compaction</li> <li>- supply N to the next crop</li> <li>- improve habitat for pollinators &amp; beneficial organisms</li> </ul> |
| Reduced Till | CPS 345 | Leafy Green and Specialty Crop (kale, mustard, turnip, radish)      | <ul style="list-style-type: none"> <li>- increase soil organic matter</li> <li>- improve soil tilth</li> </ul>   | <ul style="list-style-type: none"> <li>- reduce erosion</li> <li>- increase crop productivity</li> </ul>   |
| Mulching     | CPS 484 | Leafy Green and Specialty Crops (kale, mustard, and turnip, radish) | <ul style="list-style-type: none"> <li>-improve moisture management</li> <li>- reduce irrigation energy use</li> <li>- reduce soil erosion</li> </ul>  | <ul style="list-style-type: none"> <li>- improve crop yield and health</li> <li>- increase organic matter</li> <li>- reduce particulate emissions</li> </ul>   |

Small scale farmers are historically underserved by the available Local, State, and Federal Cost Share Programs. To implement the above objectives, the project management team using the Regional Extension Centers and County Extension agents will recruit small scale and underserved farmers interested in adopting and implementing best management practices in growing climate smart commodities such as leafy greens and cover crops. SC State University-1890 Research and Extension County extension agents across South Carolina will identify and select a sample of farmers who will collaborate in the establishment of the demonstration sites to be used in data collection and assessments of carbon sequestration and emissions stemming from adoption and implementation of climate smart agricultural practices in production of the selected commodities. A team of post-doctoral research associates, research assistants, and students will assist the selected farmers in the deployment of research equipment collection and assessment of data needed for measuring carbon sequestration and emissions, and potential future carbon market opportunities for the selected commodities. A continuous evaluation of the project will be conducted to capture

changes in knowledge and skills gained as well as the actions, and conditions of the enrolled farmers over the project's life.

- a) Plan to recruit underserved producers/farmers.
- b) Plan to provide technical assistance, outreach, and training, including who will be conducting these activities, qualifications, and projected timeline.
- c) Plan to provide financial assistance for producers to implement CSAF (Climate Smart Agriculture Farming) practices.

The project will enroll underserved and small producers. The project estimated 133 underserved, socially disadvantaged, small-scale producers will be enrolled and provided financial assistance for adopting climate-smart practices. Farmer compensation will be based on modified NRCS Climate Smart Conservation Standard Practice Farmer Incentives.

### **3. A measurement/quantification, monitoring, reporting, and verification plan**

SC State proposes the utilization of a variety of methods, approaches, and tools to measure, monitor, verify, and report the activities and findings of the climate-smart commodities project. The combination of tools and strategies to effect successful gathering of information to generate knowledge and education data include but are not limited to the following:

- a) The project will use portable GHG measuring equipment deployed at the growing regions to collect and analyze greenhouse gas emission and carbon sequestration. The approach will include methodology consistent with the section titled "Quantification Requirements."
- b) The project will require post-doctoral fellows, research technicians, and students to work with recruited farmers using COMET system to monitor and report the adapted practices and acreage. Monitoring of implemented practices including anticipated number of farms and acres will be vital to the sustainability of climate smart practices amongst farmers.
- c) Verification of GHG will be provided and performed by post-docs, research technicians, and students involved in the project. Real time verification of the collected and analyzed data is an essential step to ensuring proper reporting and tracking of GHG benefits.

### **4. Plan to develop and expand markets.**

The project's marketing plan will be coordinated by a faculty from the Department of Marketing in SC State College of Business and Information Systems and a Climate Smart Marketing Specialist to develop and implement market development activities, with a primary goal of increasing supply and demand for Climate Smart Commodities (CSC).

**Partnerships designed to market climate-smart commodities:**

- a) Market development strategies will involve assessment of the supply chain issues and developing new market prospects to guarantee lasting viability of Climate-Smart commodities post project completion. Efforts will be geared towards fostering partnerships with small- and large-scale local businesses, and restaurants, via in-person and online surveys, and focus groups; to evaluate prospective markets and distribution opportunities. The unique partnerships between an academic institution (SC State University), private business (Mixon Seeds), and non-profit organization (Black Farmers Coalition) fostered through this project will play a pivotal role in promoting the marketing of the Climate-Smart commodities.
- b) Lastly, we would work with SC Department of Agriculture, SC Farmers' Market Association, and other agricultural product boards to assist with the expansion of the Climate-Smart Commodities market.
- c) The Project Management Team will coordinate with local and regional small farmer cooperatives throughout the state and market climate smart cash crop commodity growers at workshops and scheduled activities.
- d) The Marketing Development Consultant and Climate-Smart Marketing Specialist will assist with the preparation and deployment of surveys and market development activities. A Qualtrics survey platform will be utilized in developing the survey questionnaire. Surveys will be administered to 500 consumers and producers annually (during the harvest and planning seasons)

**Plan to track CS commodities through the supply chain.**

- a) The Climate Smart commodities selected for this project will be branded as "Climate-Smart Commodities SC Grown." The branding of the Climate-Smart commodities will involve creation of a label (Climate-Smart SC Grown) and certification process that will

enable companies and businesses associated with packaging and produce retail to affix labels that denote use of Climate-Smart (CS) practices in the production of the respective commodities.

- b) Development of the labeling and certification for each climate-smart commodity will entail educating the public about the production protocol and the environmental, human, and societal benefits of adoption of CS practices. We will partner with Clemson University to develop the CS certification.
- c) The CSC can then be tracked through the supply chain by the CS label and certification procedure. Results and Best Practices gleaned from this endeavor will become a national model for forthcoming USDA projects focusing on Climate-Smart Commodities.

#### **Estimated economic benefits for participating producers including market returns.**

- a) In order to evaluate the economic benefits for enrolled farmers a market analysis will be conducted to appraise the economic impact of the Climate-Smart practices, monetary value of the environmental benefits, potential regional expansion, and continued adoption of the CS practices.
- b) Surveys will be disseminated to enrolled farmers to determine the CS practices adopted, challenges encountered, and factors that inspire their adoption of the CS practices. The surveys will be given in the second and third year of the project. Additionally, an enterprise budget analyses will be developed for the respective CS commodities and practices in order to evaluate enrolled farmer's profit potential.
- c) Estimated economic benefits for the participating farmers include increased market returns. The marketing specialists will facilitate protocols including measurement of consumer attitude toward climate-smart commodities. The assessment of benefits for participating farmers will be conducted through surveys and interviews, and other climate smart project data.

#### **Post-project potential, scalability**

- a) Information gleaned from enrolled farmers' survey responses to challenges associated with adoption of CS practices and probability of continued adoption of CS practices will allow for the evaluation of post-project potential and scalability of CSC production and marketing.



- b) Modeling of profitability risks using tools such as enterprise budgets will enable projection of post-project potential and scalability under different market conditions and situations. Knowledge of challenges for adoption of CS practices will also facilitate assessment of the probability of enrolled farmers' continued adoption of the CS practices after the project ends. Also, information obtained from marketability and prospective market opportunities, and market prices will permit assessment of post-project potential.
- c) In order to assess scalability, surveys will be distributed to enrolled farmers to determine the lowest price that they are willing to receive per commodity/adopted CS practice (WTA) in order to adopt a CS practice, and to prospective consumers to evaluate the minimum price they are willing to pay (WTP) for respective CSC and CS practice. The computed differences between willingness to adopt (WTA) and willingness to pay (WTP) will help project post-project potential and scalability.
- d) Post-project potential and scalability strategies will include the opportunity for recruited farmers to become contract growers for climate-smart commodities businesses. The potential for scalability is likely as guaranteed income will be forthcoming to farmers.
- e) SC State 1890 will adhere to the University's procurement standards while choosing a marketing specialist/consultant. The marketing specialist will provide consulting services on traceability of commodities through the supply chain.

## 5. Marketing Objectives

- a) Prepare outreach material and communicate results from the survey to inform producer decisions.
- b) Create, deploy, analyze, and interpret of a consumer survey (> 500 responses) for one commodity to assigned consumer markets.
- c) Assist in understanding potential price premium, labeling, and marketability aspects of CS commodities.
- d) Work with post-docs to complete risk index creation, application, and outreach to assigned producer markets.
- e) Collect data on reducing risk for producers to adopt CS practices.
- f) Create educational materials.

## **6. Project Outcomes supported by the Market Development Objective of the Project**

- a) Evaluation of traceability through supply chains from production to delivery to the consumer.
- b) Comprehension of the marketability advantages for a variety of farm types.
- c) Empowerment of farmers to drive climate-smart markets and practice adoption.
- d) Development of public-private partnerships to foster and develop climate-smart markets.
- e) Integrating the lessons and experiences of climate smart practices into the Extension Agents' strategic planning and program delivery for a broader impact.

### **Data Management Plan**

Expected Data Types: Digital and non-digital data will be collected by the Climate-Smart Project Leadership Team (PLT) and Project Management Team (PMT) comprising of the Principal Investigator, two Co-Investigators, Project Director (PD), and Project Coordinator, two Postdocs, and an Extension Agent. Climate-Smart data will be generated, reported, and archived as primary and secondary data. In addition, Climate-Smart partnership project and educational (including, commodity types, marketing channel types, partners, producers, and field description of each level) data will be collected. Data gathered and/or collected (including computer programs used in the analysis) will be maintained in a master file and posted on the project website. The master file will be permanently housed within the 1890 Research and Extension Program's Sales Force Data System, a comprehensive data analytics report and management Software (DARMS). The type of data collected will be variable including project level (PI/Co-PIs, project title, amount awarded, project goals, objectives, progress reports, and final reports), partners level (recipients, subrecipients, consultants), and producers demographic data such as identification (names, farm serial number, addresses of institutions, phone numbers, and email address).

Data Format: Data collected will be held in various formats including Microsoft 365 application such as spreadsheets (MS Excel), documents (Microsoft Word or Adobe Acrobat), OneDrive, SharePoint; images (JPEG or TIFF); and video clips on program activities. Printed project data will be stored in secured filing cabinets at SC State. All data set will be collected in standardized format to ensure data quality and allow for aggregation of summary data as well as independent use of the data.

Data Reporting: SC State Project Leadership Team and Project Management Team will utilize the Partnerships for Climate-Smart Commodities Project Reporting Workbook to prepare and submit detailed Progress Report on a quarterly basis. The project leadership teams will also submit supplementary performance reports as stipulated in the Partnership for Climate-Smart Commodities Data Dictionary for Recipients (February 2023, Version 1.0) Quarterly progress reports will be utilized to carefully monitor the project's progress toward the achievement of targeted milestones. Final reports will be analyzed to assess the overall goal of the project and its impact on students' education and faculty's global knowledge.

Data Sharing and Public Access: All data and derived reports will be housed on a project website/application for public access and utilization. The collected data will become the property of the implementing partners collectively referred to as Implementing Partners (IP). The data that is collected may be used in potential publications, conference presentations, project evaluation, websites, reports, journal articles, and appropriate social media to disseminate Climate-Smart Partnership information and success stories. In addition, data findings will be presented at professional conference meetings, partnership networking meetings and academic events.

Roles and Responsibilities: All collected data will be exclusively managed by the Project leadership Team (PI and Co-PIs) and Project Management Team consisting of the Project Director and Project Coordinator, Postdocs, Incentive Coordinator, Research Technicians, and Extension Agents. The overall project will be housed and managed in the SC State University 1890 Research and Extension Program. No other resources are required for the implementation of the Data Management Plan since the budget already includes a salary for the responsible personnel.

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