



NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number NR233A750004G038	2. Amendment Number	3. Award /Project Period Date of final signature - 04/30/2028	4. Type of award instrument: Grant Agreement
5. Agency (Name and Address) USDA Partnerships for Climate-Smart Commodities c/o FPAC-BC Grants and Agreements Division 1400 Independence Ave SW, Room 3236 Washington, DC 20250 Direct all correspondence to FPAC.BC.GAD@usda.gov		6. Recipient Organization (Name and Address) REGENTS OF THE UNIVERSITY OF IDAHO UNIVERSITY OF IDAHO OFFICE OF SPONSORED PROGRAMS MOSCOW ID 83844-3020 UEI Number / DUNS Number: QWYKRJH5NNJ3 / 075746271 EIN:	
7. NRCS Program Contact Name: TANYA CULBERT Phone: (601)748-9177 Email: tanya.culbert@usda.gov	8. NRCS Administrative Contact Name: SUNDII JOHNSON Phone: (202) 720-5265 Email: Sundii.Johnson@usda.gov	9. Recipient Program Contact Name: Jodi Johnson-Maynard Phone: (208) 885-9245 Email: jmaynard@uidaho.edu	10. Recipient Administrative Contact Name: Vicki Russell Phone: (208) 885-4984 Email: vskow@uidaho.edu
11. CFDA 10.937	12. Authority 15 USC 714 et seq	13. Type of Action New Agreement	14. Program Director Name: Jodi Johnson-Maynard Phone: (208) 885-9245 Email: jmaynard@uidaho.edu
15. Project Title/ Description: Expands climate-smart potato, wheat, beef, sugar beet, barley, chickpea, hops, specialty crop markets in ID and Tribal areas, supports farmer implementation and monitoring of climate-smart practices.			
16. Entity Type: H = Public/State Controlled Institution of Higher Education			
17. Select Funding Type			
Select funding type:	<input checked="" type="checkbox"/> Federal	<input checked="" type="checkbox"/> Non-Federal	
Original funds total	55,000,000.000	\$96,327.00	
Additional funds total	\$0.00	\$0.00	
Grand total	55,000,000.000	\$96,327.00	
18. Approved Budget			

Personnel	\$5,550,345.88	Fringe Benefits	\$1,413,978.37
Travel	\$861,688.56	Equipment	\$1,628,869.00
Supplies	\$766,962.60	Contractual	\$0.00
Construction	\$0.00	Other	44,778,155.590
Total Direct Cost	51,988,286.600	Total Indirect Cost	\$3,011,713.40
		Total Non-Federal Funds	\$96,327.00
		Total Federal Funds Awarded	55,000,000.000
		Total Approved Budget	55,096,327.000

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

Name and Title of Authorized Government Representative Katina Hanson, Acting Senior Advisor for Climate-Smart Commodities	Signature	Date
Name and Title of Authorized Recipient Representative Sarah Martonick, Director of the Office of Sponsored Programs	Signature	Date See date in signature

KB 4.21.23

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, audiotope, 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 Regents of the University of Idaho (Recipient), is to build markets for climate-smart commodities and invest in America's climate-smart producers to strengthen U.S. rural and agricultural communities.

Objectives

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

Budget Narrative

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

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

TOTAL BUDGET \$ 55,096,327

TOTAL FEDERAL FUNDS \$55,000,000

PERSONNEL \$4,021,990

FRINGE BENEFITS \$1,024,622

TRAVEL \$624,412

EQUIPMENT \$1,628,869

SUPPLIES \$555,770

CONTRACTUAL \$0

CONSTRUCTION \$0

OTHER \$12,856,448 (includes PRODUCER INCENTIVES \$31,276,176)

TOTAL DIRECT COSTS \$51,988,287

INDIRECT COSTS \$3,011,713

TOTAL NON-FEDERAL FUNDS \$96,327

PERSONNEL \$66,547

FRINGE BENEFITS \$29,780

TRAVEL \$0

EQUIPMENT \$0

SUPPLIES \$0

CONTRACTUAL \$0

CONSTRUCTION \$0

OTHER \$0 (includes PRODUCER INCENTIVES \$0)

TOTAL DIRECT COSTS \$96,327

INDIRECT COSTS \$0

Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate for on-campus 'other' activities (38%) on Modified Total Direct Costs (MTDC), consisting of all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subaward. MTDC exclude equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs, and the portion of each subaward in excess of \$25,000.

When equipment is purchased with Federal funds it must be used until no longer needed as described in the General Terms and Conditions and 2 CFR 200. If the residual value of the equipment is \$5,000 or more at the time it is no longer needed, the recipient must request disposition instructions. The disposition instructions may direct the recipient to: 1)

sell the equipment and return a proportionate share of the proceeds to the Federal agency; 2) transfer title to another eligible entity identified by the Federal agency; or 3) keep the equipment if desired and compensate the Federal agency for its proportionate share of the value.

Responsibilities of the Parties:

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

RECIPIENT RESPONSIBILITIES

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

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

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

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

Performance Reports: Quarterly

SF425 Financial Reports: Quarterly

Detailed Progress Report: Quarterly

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

Expected Accomplishments and Deliverables

See attached Benchmarks Table and associated Project Narrative.

Resources Required

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

Milestones

See attached Benchmarks Table and associated Project Narrative.

GENERAL TERMS AND CONDITIONS

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

Attachments:

Budget Narrative

Project Narrative

Benchmarks Table

Climate-Smart Practices List and Limitations

Data Dictionary

Climate-Smart Specific Terms and Conditions

BUDGET JUSTIFICATION

Fringe benefit rates have been updated for FY24 and go into effect July 1, 2023, which resulted in an overall budget decrease of \$37,374, which we redistributed to travel (to cover the additional yearly meeting), equipment, and equipment maintenance as detailed below.

Note: All Personnel pay rates include a 2% annual increase on the Base 2022/23 salary starting in Year 2, unless otherwise noted.

a. Personnel (\$4,021,990)

Jodi-Johnson Maynard (PD) will serve as the primary representative to the Partnerships Network and interact extensively with other projects and stakeholder groups. She will also supervise the project manager. *Fringe benefits calculated in section b using faculty rate (31%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$147,202/AY	22.2%	5 years	\$170,232
	(Academic Year)		

Sanford Eigenbrode (project co-lead and team lead) will co-lead the project and lead the Systems Performance Team. *Fringe benefits calculated in section b using faculty rate (31%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$123,786/AY	16.7%	3 years (Years 1-3)	\$63,139

Zachary Kayler (team lead) will oversee the Biogeochemistry Core Laboratory where all analyses from the study sites will be completed. He will also lead the Greenhouse Gas Monitoring and Modeling team. *Fringe benefits calculated in section b using faculty rate (31%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$80,824/AY	5.56%	5 years	\$23,367

Ryanne Pilgeram (social science lead) will develop, distribute, and analyze surveys focusing on determining barriers to conservation practices; conduct interviews with participants and non-participants; and integrate findings into outreach specifically targeting underrepresented farmers. *Fringe benefits calculated in section b using faculty rate (31%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$84,833/AY	36.5%	5 years	\$160,961

Nav Ghimire (Evaluator) will oversee the project evaluation process, including the External Program Assistant Manager and the Evaluation Assistant. *Fringe benefits calculated in section b using faculty rate (31%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$136,760/FY (Fiscal Year)	4.17%	5 years	\$29,654

Post-Doctoral Associates, (3 per year, TBD) will be supervised by project team leads for the following teams: Greenhouse Gas and Carbon Sequestration; Supply Chain and Marketing; and Pest, Weed, and Disease. Each will help develop methods, organize sampling schedules, and

Budget Justification

assist faculty and graduate students with the collection of data. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$50,003/Post Doc	100%	5 years	\$260,218/Post Doc
Total \$780,653 (3 Post Docs)			

Ph.D. Graduate Student Research Assistants, (11 per year, Years 1-4, TBD) will be supervised by participating faculty. Seven PhD students will be assigned to the Greenhouse Gas and Carbon Sequestration Team, which also addresses soil health; 1 PhD student will be assigned to the Barriers and Solutions Team; and 3 PhD students will work on the objectives of the System Performance Team. Each student will work on the project as a full-time Ph.D. graduate student in Years 1-4 to collect data and samples from surveys and monitoring equipment and to collect and analyze soil, plant, and insect samples. *Fringe benefits calculated in section b using student rate (2.5%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$28,000/student	100%	4 years/student	\$112,000/student
11 students			Total \$1,232,000 (11 students)

M.S. Graduate Student Research Assistants, (1 M.S. student in Years 1-2 and 1 M.S. student in Years 2-3, TBD) will be supervised by participating faculty. Both will be assigned to the Market and Supply Chain Team. Each student will work on the project as a full-time M.S. graduate student to collect and analyze relevant data. *Fringe benefits calculated in section b using student rate (2.5%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$22,000/Student 1	100%	2 years (Y1-2)	\$46,040
\$22,440/Student 2	100%	2 years (Y2-3)	\$46,961
Total \$89,769 (2 students)			

Project Manager, (TBD) (supervised by Johnson-Maynard) will assist the PI and co-PI in all aspects of program management. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$62,000/FY	100%	5 years	\$322,650

Assistant Project Manager, (TBD) (supervised by Johnson-Maynard) will assist the Project Manager, PI, and co-PI in all aspects of program management. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$45,000/FY	50%	5 years	\$117,091

Benchmark Farm Site Assistant, (3, TBD) (supervised by Johnson-Maynard) will help collect and maintain the experimental plots including seeding, tillage, and harvesting, and maintain the greenhouse gas collection systems. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$45,000/FY	75%	5 years	\$526,909

Budget Justification

Laboratory Manager Assistant, (TBD) (supervised by Kayler) will assist Kayler in all biogeochemistry core lab operations. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$45,760/FY	75%	5 years	\$178,603

Extension Program Assistant Project Manager, (TBD) (supervised by Ghimire) will assist the Extension Team in all aspects of the proposed extension activities. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$48,000/FY	50%	5 years	\$124,897

Evaluation Assistant (Aubrey Stribling) (supervised by Ghimire) will assist with evaluation activities. *Fringe benefits calculated in section b using staff rate (41.3%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$41,995/FY	1%	5 years	\$2,229

Undergraduate Student Assistants, (5 per year, TBD) (supervised by participating faculty) will each devote 512 hours per year in Years 1-5 to assist with sample collection, analysis and laboratory work. Assistants will be divided among the times as needed. *Fringe benefits calculated in section b using student rate (2.5%).*

Base Salary	% Effort	Project Duration	Funds Requested
\$15/hr (\$7,680/yr)	25%	5 years	\$31,974/student Total \$199,835 (5 students)

b. Fringe Benefits (\$1,024,622)

Note: Fringe benefit rates have been updated for FY24 and go into effect July 1, 2023.

University of Idaho fringe benefits include FICA, group life, health insurance, Medicare, Workers Compensation, retirement, other post-employment benefits, unemployment insurance, disability insurance, employee tuition remission, and terminal leave.

- Faculty fringe benefits, 31% x \$447,354 total salary = \$138,680
- Staff fringe benefits, 41.3% x \$2,053,032 total salary = \$847,902
- Student fringe benefits, 2.5% x \$1,521,604 total salary = \$38,040

c. Travel (\$624,412)

Funds are requested for the project travel detailed below using University of Idaho/State of Idaho reimbursement rates for in-state travel and Federal GSA rates used for travel to larger metropolitan areas, where appropriate.

- **In-state Student Travel (\$240,000).** To support the graduate students and their PI mentor for travel costs to field sites for collection of soil, plant, insect, and greenhouse gas samples and data each graduate student/PI pair will receive \$5,000 per year in Years 1-4. Travel will be reimbursed using the following UI/Idaho rates: lodging (up to \$100/night); airfare (up to \$250/roundtrip); per diem (\$55/day); and mileage (\$0.655/mile). Duration of individual trips will be variable within and among Years 1-4

Budget Justification

dependent on research focus and study locations; thus, this request is based on an average annual travel cost for each graduate student/PI pair. Annual and total project costs are detailed below:

Yearly Travel Costs per Graduate Student/PI Pair				
Item	Rate	Number	# Travelers	Total
Mileage	\$0.655	1374	1	\$900
Lodging	\$100	10	2	\$2,000
Airfare	\$250	2	2	\$1,000
Per diem	\$55	10	2	\$1,100
Total Travel per Year (per student/PI pair)				\$5,000

Travel for all Graduate Student/PI Pairs			
Project Year	Yearly Rate	# Student/PI Yearly \$	Total
Year 1	\$5,000	12	\$60,000
Year 2	\$5,000	13	\$65,000
Year 3	\$5,000	12	\$60,000
Year 4	\$5,000	11	\$55,000
Year 5	\$5,000	0	\$0
Total Project Travel for Student/PI Pairs			\$240,000

- Biannual Project Director/Partnership Network Meeting (\$15,310).** Funds to support travel for Johnson-Maynard to attend and actively participate in the Partnerships Network meetings twice per year in Years 1-5. Per meeting travel costs of \$1,531 include: airfare (\$800) flight, lodging (3 nights @ \$125/night = \$375); ground transportation (\$100); and per diem (\$64/day @ 4 days using GSA rate for Kansas City = \$256). The duration of these trips will average four days.
- In-state travel (Johnson-Maynard) (\$41,825).**
 For PI Johnson-Maynard to travel to statewide stakeholder and program participant meetings, for recruitment, and for dissemination of results.
 - Southern Idaho travel (Johnson-Maynard) (\$35,300).** Travel costs (\$1,765/trip x 4 trips/year = \$7,060/year) include: airfare (Spokane, Washington, to Idaho Falls, Idaho, roundtrip (\$400); car rental (5 days x \$45 = \$225); fuel (3 tanks of gas @ \$55 = \$165); lodging (5 nights @ \$120/night = \$600); roundtrip mileage (Moscow, Idaho, to Spokane, Washington, airport 172.5 miles x \$0.655/mile = \$100); per diem (\$55/day x 5 days = \$275).
 - Northern Idaho travel (Johnson-Maynard) (\$6,525).** Travel costs (\$261/trip x 5 trips/year = \$1,305/year) include: mileage (177 miles roundtrip x \$0.655/mile = \$116); lodging (1 nights/trip x \$90/night = \$90); per diem (1 day x \$55/day = \$55).
- Professional Conferences (project faculty/staff) (\$68,800).** Funds are requested for project faculty/staff (10) to attend 1 conference per year in Years 2-5 to disseminate project results. Per meeting travel costs of \$1,720 include: airfare (\$800) flight, lodging (4 nights @ \$125/night = \$500); ground transportation (\$100); and per diem (\$64/day @

Budget Justification

5 days using GSA rate for Kansas City as an example destination). These trips will vary in length but are expected to average four nights and five days.

- **Professional Conferences (graduate students) (\$36,000).** To support dissemination of project results and interactions with other Climate-Smart projects around the country, each graduate student will be reimbursed up to \$1,000 to support attendance at one conference each year in Years 2-4 of the project. Travel will be reimbursed using the following rates: lodging (up to \$120/night); airfare (up to \$500/roundtrip); per diem (\$55/day); and mileage (\$0.655/mile).
 - Year 1 Not requested
 - Year 2 13 students= \$13,000
 - Year 3 12 students = \$12,000
 - Year 4 11 students = \$11,000
 - Year 5 Not requested
- **Evaluation Travel (\$8,825).** Funds to cover travel for Ghimire for evaluation-related meetings as follows:
 - **Southern Idaho Field Days/Workshops (Ghimire) (\$8,825).** Travel costs for Ghimire to attend Field Days and workshops in southern Idaho for 1 trip/year in Years 1-5 (\$1,765/trip) include: airfare (Spokane, Washington, to Idaho Falls, Idaho, roundtrip (\$400); lodging (5 nights @ \$120/night = \$600); per diem (\$55/day x 5 days = \$275); roundtrip mileage (Moscow, Idaho, to Spokane, Washington, airport 152.5 miles x \$0.655/mile = \$100); car rental (5 days x \$45 = \$225); fuel (3 tanks of gas @ \$55 = \$165).
- **Extension Travel (\$168,000).** Funds to support project-specific travel for the 8 members of the Extension Team to field days, workshops, cereal and potato schools, local, regional, and national meetings to disseminate project data, and local and regional locations to provide workshops and trainings (locations TBD). Travel for Extension Team is critical to work related to the Socioeconomics and Technical Barriers Teams as well as the requirement of providing technical assistance to participating growers. Travel is budgeted in Year 1 at (\$3,000/person x 8 travelers = \$24,000) and in Years 2-5 at (\$4,500/person x 8 travelers/year = \$36,000/year x 4 years = \$144,000). Travel expenses will be reimbursed using the following rates: lodging (up to \$120/night); airfare (up to \$300/roundtrip); per diem (\$55/day, University of Idaho rate); and mileage (\$0.655/mile, University of Idaho rate). The duration of travel for each Extension Team member will vary based on their location in relation to events.
- **GreenFeed Trailer Travel to Sampling Sites (Chibisi) (\$36,250).** Funds to cover truck rental and fuel to haul the GreenFeed trailer roundtrip between Moscow, Idaho, and Salmon, Idaho (Nancy M. Cummings Research, Education, and Extension Center) for sample testing. This is required to document the impact of pasture improvement CS practices on enteric GHG emissions at our field sites and is part of the GHG and C monitoring team's work. Rental fees are based on rental rates used for similar prior activities.

Budget Justification

- Truck rental fees per trip include \$20 flat fee and \$1/mile x 780 miles = \$800/trip x 5 trips/year = \$4,000/year x 5 years = \$20,000.
- Fuel costs are calculated using 780 miles divided by 6 mpg rate = 130 gallons/trip x \$5/gallon = \$650/trip x \$3,250/year x 5 years = \$36,250.
- **Interview Travel (Pilgeram) (\$9,402).** Funds to cover travel for Pilgeram for statewide interviews, vital to understanding the socioeconomic and technical barriers faced by farmers with varying demographics, and project meetings as follows:
 - **Eastern Idaho interviews (Pilgeram), 1 trip/year in Years 3-4. Year 1 (\$0); Cumulative Request (\$3,440).** Travel costs (\$1,720/trip) include: airfare (Lewiston, Idaho, to Boise, Idaho, roundtrip (\$300); car rental (5 days x \$45 = \$225); fuel (5 tanks of gas @ \$55 = \$275); lodging (5 nights @ \$120/night = \$600); roundtrip mileage (Moscow, Idaho, to Lewiston, Idaho, airport 69 miles x \$0.655/mile = \$45); per diem (\$55/day x 5 days = \$275).
 - **Northern Idaho interviews (Pilgeram), 1 trip/year in Years 3-4. Year 1 (\$0); Cumulative Request (\$2,212).** Travel costs (\$1,106/trip) include: mileage (353 miles roundtrip x \$0.655/mile = \$231); lodging (5 nights x \$120/night = \$600); per diem (5 days x \$55/day = \$275).
- **Southern Idaho interviews (Pilgeram), 1 trip/year in Years 3-4. Year 1 (\$0); Cumulative Request (\$3,750).** Travel costs (\$1,875/trip) include: airfare (Spokane, Washington, to Idaho Falls, Idaho, roundtrip (\$400); car rental (5 days x \$45 = \$225); fuel (5 tanks of gas @ \$55 = \$275); lodging (5 nights @ \$120/night = \$600); roundtrip mileage (Moscow, Idaho, to Spokane, Washington, airport 153 miles x \$0.655/mile = \$100); per diem (\$55/day x 5 days = \$275).

d. Equipment (\$1,628,869)

Funds are requested for the equipment detailed below. **Items marked with an asterisk are not available for leasing, so must be purchased.*

- **Benchmark and Tier 1 farms (\$1,262,000):**

These instruments are necessary to complete requirements to verify GHG emissions and carbon storage set forth in the NFO (Activities G1-G3, Project Narrative Table 1):

 - Fixed automated greenhouse gas 10-chamber system with CH₄, CO₂, and N₂O analyzers, multiplexer, soil moisture probes, solar power kit, cell modem and network switch*. Year 1 (\$170,000/unit x 1 unit/farm x 3 Benchmark farms) = \$510,000.
 - ATV Mounted Giddings Hydraulic Core Sampler (2). This project requires the collection of 5 ft deep soil cores to quantify soil bulk density and soil organic carbon stocks at 100 sites located across the state of Idaho (83,569 sq miles). A hydraulic probe is required due to collect the required number of cores in a sufficient time period to cover the entire state. Currently the University of Idaho, the organization that will conduct soil sampling, has two tractor mounted hydraulic probes (one in southeastern Idaho and one in northern Idaho). These probes are shared among faculty and multiple funded projects. The existing

Budget Justification

samplers are also more than 25 years old, are in need of significant repair, and difficult to trailer to remote locations (due to the size of the tractors they are mounted on). To achieve the goals of this project, we will purchase two ATV-mounted Giddings probes to be used exclusively for the Climate-Smart Agriculture project. One will be associated with a northern Idaho benchmark farm and the second will be located in southern Idaho. Giddings probe mounted on an all-terrain vehicle (ATV) to collect soil samples*. Year 1 (\$55,000/unit x 2 units (1 in southern Idaho and 1 in northern Idaho, used at Benchmark and Tier 1 farms) = \$110,000. *Note: the Giddings unit cost has been adjusted to reflect current market prices and upgraded equipment needs.*

- Micromet station*. Year 1 (\$10,000/unit x 1 unit/farm x 3 Benchmark farms) = \$30,000.
- Roving automated greenhouse gas 3-chamber system with solar power kit*. Year 1 (\$153,000/unit x 1 unit/farm x 3 Benchmark farms and 1 Tier 1 farm) = \$612,000 (at Benchmark farms, deployed to Tier 1 farms during the growing season).

- **Biogeochemistry Core Laboratory (Kayler) (\$130,000):**

This equipment is required to establish a soil testing lab for GHG emissions potential from enrolled farms (Activities G1-G3, Project Narrative Table 1):

- Trace gas analyzer. Year 1 (\$85,000*).

The following pieces will be incorporated with the trace gas analyzer:

- Fittings for gas sample extraction, 40 x \$475/unit. Year 1 (\$19,000*).
- Temperature probes, 40 x \$200/unit. Year 1 (\$8,000*).
- Moisture probes, 40 x \$250/unit. Year 1 (\$10,000*).
- Oxygen probes, 40 x \$200/unit. Year 1 (\$8,000*).

- **GreenFeed Pasture System with 5-year service contract (Chibisi) (\$213,635).**

The C-Lock, Inc., GreenFeed Pasture system is “a turn-key system designed to measure gas fluxes of Methane (CH₄), Carbon Dioxide (CO₂), and optionally, Oxygen (O₂), and Hydrogen (H₂), from individual animals. It is also possible to aggregate emissions data from individual animals and determine herd averages. The system is typically configured to offer a small amount of pelletized bait attractant to entice the animals to visit multiple times per day. The gas emissions data is logged then automatically processed allowing the user to easily access a summarized report of calculated fluxes. This unit can be located in remote areas for pasture measurements.” Source: C-Lock, Inc., website.

This equipment is required to meet the NFO program description requirement for measuring, quantifying, monitoring, and verifying the carbon and greenhouse gas benefits associated with those practices in the Project Activities G1-G3 (Table 1 in Project Narrative). This system will be purchased due to the leasing cost (minimum of 60 months @ \$3,600/month + 50% deposit and shipping and handling to send components back to manufacturer).

Budget Justification

- **Maintenance and Replacement Costs for Project Equipment (\$23,234).** Funds are requested for expected equipment maintenance and replacement costs based on costs with similar prior projects (~1.426%).

e. Supplies (\$555,770)

Note: Some costs for general outreach and research supplies are based on prior experience with similar activities.

- **Extension Educators Supplies (\$40,000).** Items to support work conducted by the 8 lead Extension Educators including materials for demonstrations, color copies for workshop handouts and flyers, signage, light refreshments at workshops, flip charts and markers, and nametags. Based on prior experience with similar activities, costs are estimated at \$1,000/year for each of 8 educators.
- **Computer and peripherals for Project Manager, Assistant Project Manager , and Extension Program Manager (\$5,400).** Funds are requested in Year 1 for a computer (\$1,300), printer (\$200), monitor (\$250) and related peripherals (\$50) for a total of \$1,800 per person for the Project Manager (TBH), Assistant Project Manager (TBH) and the Extension Program Manager (TBH). These items will be used solely for this project and costs are based on University of Idaho Information and Technology Services estimates. Year 1 (3 @ \$1,800 = \$5,400).
- **Benchmark and Tier 1 farm Supplies (Eigenbrode) (\$70,738).**
 - Laboratory consumables (sampling bags, labels, soil core samplers, etc.). Years 1-5 (\$1,500/year x 5 years = \$7,500).
 - Sampling supplies for insect, weed, and nematode sampling (sample vials, ethanol, sample labels, core samplers, etc.). Years 1-3 (\$15,000/year x 3 years = \$45,000); Years 4-5 (\$9,119/year x 2 years = \$18,238). Total \$63,238.
- **Biogeochemistry Core Laboratory Supplies (Kayler) (\$40,000).**
 - Laboratory consumables (chemical reagents, filter papers, test tubes, etc.). \$10,000/year in Years 1, 3, and 5; \$5,000/year in Years 2 and 4 = \$40,000
- **Graduate Student Research and Analyses Supplies (\$350,000).**

Research materials and supplies funds for graduate students in Years 1-4. PhD students will receive \$7,500 per year of their program and MS students will receive \$5,000 per year of their program. MS students will be working on the economics and supply chain components of the study and will not require field and laboratory supplies or materials, thus their yearly funds are less. Research materials and supplies are needed to complete analyses (other than the standard C and GHG gas analyses which are in the Benchmark sites and Soil Biogeochemistry Core Laboratory budgets) conducted on samples from the Benchmark, Tier 1, and Tier 2 sites. Analyses include soil health [poxc (\$10/sample), weoc, and weon (\$10/sample), soil nitrogen (\$5/sample), and phosphorous availability (\$12.50/sample)] assuming an average of 5 sites per student and 10 samples/site per year = \$1,875/student per year. Funds will also be used to purchase supplies for the collection of soil, crop, weed, insect samples in the field including plastic bags and labels (\$50/year), flags and stakes for marking sampling locations (\$75/year), sampling cores

Budget Justification

and liners (\$335/year), glass specimen bottles (\$50), sample storage boxes for preservation and identification (\$150), and insect traps (\$250/year). General laboratory consumables not included in per sample fees include filter papers (\$250/year), chemical reagents and buffers (\$850/year), labeling tape (\$25/year), disposable pipet tips (\$75/year), plastic weigh boats (\$65), disposable centrifuge tubes (\$150/year). Annual subscriptions to software for geospatial data and data analysis (\$1,000). Single season loggers to measure environmental conditions in the field (3 per site x 5 sites per student/year @ \$140/sensor = \$2,100). These funds will also cover the cost of dissemination of research results including poster printing (\$200/year).

The data generated will provide information to remove technical barriers to adoption and quantify additional benefits of climate-smart practices. They will be procured to meet Activities T1-T12 (Table 1, Proposal Narrative).

- Year 1: 11 PhD students x \$7,500; 1 MS student x \$5,000 = \$87,500
 - Year 2: 11 PhD students x \$7,500; 2 MS students x \$5,000 = \$92,500
 - Year 3: 11 PhD students x \$7,500; 1 MS student x \$5,000 = \$87,500
 - Year 4: 11 PhD students x \$7,500 = \$82,500
 - Year 5: Not requested
- **Recruitment and Educational Materials (\$2,000).** Printed color copies for posters (25 posters x \$50/poster = \$1,250), flyers and educational handouts (2,500 pages x \$0.10/page = \$250), and post-cards (500 post-card printing and mailing x \$1 = \$500) to assist with recruiting producers and dissemination of project results. The project will recruit approximately 148 producers (for a total of 105,000 acres enrolled). These producers must be representative of large-scale and small-scale underserved populations. This representation requires targeted recruitment and educational materials to be distributed by Extension personnel and other team members at appropriate venues and outlets such as Extension offices, commodity commission offices (Wheat, Barley, Potato) and grower meetings. These materials will be needed only for the enrollment stage in Year 1.
- **Sampling materials and supplies (Chibisi) (\$10,000).** Materials necessary for gathering, packaging, mailing, and shipping collected samples at \$2,000/year in Years 1-5 with costs based on prior similar research expenditures. Costs include items such as sampling bags, gloves, tape, labels, shipping boxes and shipping costs to send forage samples to a commercial laboratory for nutrient composition analysis. These items are project-specific and are not otherwise recovered through indirect costs.
- **Otter.ai (transcription service) (Pilgeram) (\$432).** Funds are requested for the Otter.ai software application for transcription of recordings gathered during the interview process. Monthly cost for the '*Pro Subscription*' which is appropriate for this specific activity is \$9 x 12 months/year = \$108/year in Years 2-5 = \$432.
- **Otter.ai (transcription service) (Ghimire) (\$1,200).** Funds are requested for the Otter.ai software app for transcription of recordings gathered during the evaluation process. Monthly cost for the '*Business Subscription*' which is appropriate for more

Budget Justification

complex evaluation data is \$20 x 12 months/year = \$240/year in Years 1-5.

- **NVivo Coding Software (Pilgeram) (\$1,000).** Funds are requested for a subscription to NVivo Coding software for a post-Doc (\$650) in Year 2 and an updated subscription for Pilgeram (\$350) in Year 1.
- **Publicity Signage for Network Analysis (Pilgeram) (\$35,000).** Funds of \$250/farm are requested to create and distribute signs for 140 farms in Year 1. Costs include a 4x4 aluminum sign, printed vinyl, and two posts for displaying. The signs will be created to broadcast messages informing members of the target audience about Climate Smart practices to increase participation in the network analysis. Farmers will display the signs at the edge of fields adjacent to roads and will identify farms as “Climate Smart” growers. The analysis is part of the socioeconomic barriers team.

f. Contractual

Not requested.

g. Construction

Not requested.

h. Other (\$44,132,624)

1. Subawards (\$42,225,030)

A. Subawards for Key Programmatic Work (\$42,000,030). We will have six subawardees working with producers and external partners. One subaward recipient is focused on a specific research component on supply chains with two nonprofit organizations. The remaining five subaward recipients are involved in the core activity of this project to enroll producers to receive incentives for implementing Climate Smart practices. The University of Idaho will not directly enroll these producers. Rather, the contractors will do so building on existing relationships with producers.

All producer incentive payments (\$31,276,176) will be dispersed to enrollees via subawardees. The University of Idaho will not disperse producer incentive payments directly to producers. All producer incentives are exempt from indirect costs and no indirect costs have been charged on incentive payments.

- **Idaho Association of Soil Conservation Districts (\$21,608,735).** Funds are requested for the Idaho Association of Soil Conservation Districts to enroll 100 producers from their client base and to oversee the work with each producer throughout the life of the project, including oversight and dispersal of incentives. Producer incentives account for (\$15,463,000) of this subawardee budget, with no indirect costs charged on these incentives.
- **The Nature Conservancy (\$4,999,486).** Funds are requested for The Nature Conservancy to enroll 12 producers from their client base and to oversee the work with each producer throughout the life of the project, including oversight and dispersal of incentives. In addition, The Nature Conservancy will support

key project activities by setting up and managing a demonstration farm to showcase Climate Smart practices as part of their own outreach and as an asset to the project for its educational and outreach activities. Producer incentives account for (\$4,483,316) of this subawardee budget, with no indirect costs charged on these incentives.

- ***Coeur d'Alene Tribe (\$1,490,565)***. Funds are requested for the Coeur d'Alene Tribe to enroll 5 producers who currently lease land from the tribe and to oversee the work with each producer throughout the life of the project, including oversight and dispersal of incentives. In addition, the Coeur d'Alene Tribe will support key project activities by developing their capacity to generate biochar from tribal forestland and trial its use and rates of application in an on-reservation demonstration. Producer incentives account for (\$186,000) of this subawardee budget, with no indirect costs charged on these incentives.
- ***Nez Perce Tribe (\$4,360,582)***. Funds are requested for the Nez Perce Tribe to enroll 12 producers who currently lease land from the tribe and to oversee the work with each producer throughout the life of the project, including oversight and dispersal of incentives. Producer incentives account for (\$3,900,000) of this subawardee budget, with no indirect costs charged on these incentives.
- ***Desert Mountain Grassfed Beef (\$8,776,984)***. Funds are requested for Desert Mountain Grassfed Beef to enroll 16 producers producing grass-fed beef and to oversee the work with each producer throughout the life of the project, including oversight and dispersal of incentives. Producer incentives account for (\$7,243,860) of this subawardee budget, with no indirect costs charged on these incentives.
- ***SaulGill LLC dba Arrowleaf Consulting (\$763,679)***. Funds are requested for Arrowleaf Consulting to complete research about commodity supply chains to achieve activity SE5, including data collection through interviews, surveys, and focus groups with buyers, distributors, and other supply chain actors with a focus on wheat and wheat flour, but also including legumes, barley, and other rotational crops commonly grown with wheat in Idaho. This also includes research to compare and integrate climate smart certification options with existing certification regimes. Arrowleaf Consulting is not responsible for dispersal of producer incentives.

B. Subawards (Recipients To Be Decided) for Marketing Mini-Grants (\$225,000). Funds are requested for mini-grants for external businesses to develop marketing plans and labels for Climate Smart products. The focus is to support vertical integration of small and other underserved processors such as Hillside Grains (woman-owned) and Idaho Brewers United. Each mini grant is anticipated to average \$15,000 per project, not to exceed \$25,000. We will recruit 5 businesses per year in Years 2-4 for these marketing mini-grants. These funds will directly support the development of markets for Climate Smart products and expand product sales. As the project begins, we will gather information and evaluate where these mini-grants could have the most impact, in order to

design a competition that will allow for the best outcomes relative to our planned goals for the program. We are considering the following types of activities: 1) funds to do a small marketing survey/focus groups, 2) funds to produce a climate-smart label (artwork, printing, etc.), 3) travel to meet with potential buyers, 4) funds to pay for assistance developing a marketing plan. We anticipate these mini-grants would go to small and underserved processors that lack capital to get started with programs such as these. We request to keep these funds as proposed and will seek prior approval, if needed, once the marketing mini-grant structure and competition is designed; at that point we will have a better understanding of the necessary structure and likely recipients of the funds. We do not anticipate awarding funds to producers/farmers. *We understand that recipients of these awards would become subawardees and that any payments > \$25,000 per recipient would be excluded from indirect cost calculations.*

2. Advisory Board Meeting Costs (\$16,600)

Advisory Board Meetings (\$16,600)

- Funds are requested for costs associated with the annual Advisory Board Meeting for 63 attendees (12 board members, ~12 graduate students, 23 faculty, the project manager, assistant project manager, extension program manager, 3 Benchmark Farm Site managers, 8 Extension educators, and 2 researchers (Arrowleaf)). The meeting will be 2 days, alternating locations between Moscow, Idaho, (Year 1, 3, and 5) and Boise, Idaho, (Year 2 and 4). A per person meeting cost of \$50/day includes: 2 full days @ \$20/day per person for meals and refreshments to ensure continuity of the meeting and \$5/day per person for meeting materials (\$3,150/year in Years 1-4 (63 attendees) and \$2,400 in Year 5 (48 attendees, because grad students and farm site managers will not attend) = \$15,000).
- In addition, funds are requested for the cost of conference room and equipment use at the UI-Boise Water Center (\$400/day x 2 days = \$800/meeting in Year 2 and 4 = \$1,600). There are no room costs required at the Moscow location for Years 1, 3, and 5.

3. Survey and Evaluation Costs (\$28,000)

Survey Costs (Pilgeram) (\$28,000). Funds are requested for a survey in Year 3 (\$28,000) for the Social Science Team. Survey distribution will use the Dillman survey method where respondents first receive a letter requesting participation and the full survey; then, non-responders then receive a reminder postcard one week later, finally non-responders then receive a final letter and replacement. Surveys will be sent to 2,450 farmers with the goal of an 80% response rate which is based on estimates from Dillman. Cost estimates are \$11.50 per potential survey participant and are based on the cost of printing and mailing survey materials up to two times, cost of mailing postcard, administrative costs of creating sampling frame of farmers and then cross-checking returned surveys against the returned surveys, and finally the cost of inputting survey responses. Cost is based off amount charged by research labs to conduct similar research. These funds will directly support the work aimed at understanding social and economic

barriers to adoption of Climate Smart practices.

4. Extension/Outreach Costs (\$501,400)

Extension Mini Grants (\$320,000). Extension mini-grants will promote UI Extension faculty-led projects supporting project-specific outreach and demonstration efforts focused on overcoming technical barriers to adopting climate-smart practices. Funding will be competitive and divided among the Idaho Extension districts, Research Centers, Federally Recognized Tribal Extension Programs (FRTEP) each year ($\$10,000/\text{year} \times 8 \text{ Extension faculty} = \$80,000/\text{year}$ in Years 2-5 = \$320,000). A mini-grant committee of Extension faculty will administer the funds, oversee all aspects of the projects, and ensure impact reporting. The mini grants will address topics related to the Socioeconomic and Technical Barriers Teams. The extension mini-grant funds were designed to be awarded through a competitive process to UI Extension faculty/staff or other UI experts to encourage them to create demonstrations, host farmer field days, and put on workshops for farmers. These were not designed as producer incentives but as outreach funds to provide training/technical support to farmers/producers and to reduce barriers to adoption by farmers/producers through education and knowledge building. These services will be provided by University of Idaho Extension faculty/staff (or relevant UI faculty experts). *These are not producer incentives and are thus subject to indirect costs.*

Extension Field Days & Growers Meetings (\$44,000). Extension Field Days and Growers Meetings will be hosted once per year by the 8 Extension leads in counties throughout the 4 Idaho Extension districts and 3 Federally Recognized Tribal Extension Program locations with a focus on overcoming barriers to climate-smart practices and management. The cost per event is estimated at \$1,100 and is based on similar prior events with a target of 50 attendees per event. Costs include field-site host fees (\$200/event), educational packet (50 attendees \times \$10/packet = \$500), marketing (\$100/event), signage to direct and inform attendees at field sites (\$50/event), and light refreshments (target 50 attendees/event \times \$5/attendee = \$250). $\$1,100/\text{event} \times 8 \text{ events/year} = \$8,800/\text{year}$ in Years 1-5.

Conference registration for Extension Educators (\$12,400). Funds are requested for conference registration fees for 8 Extension faculty in Years 2-5. Costs were determined by considering projected workflow. In Year 1, projects are being established and there will not be a need to travel and report on project outcomes. By Year 2 local and regional conferences will be outlets for outcome dissemination or targeted continuing education events to support grant related efforts ($\$250/\text{registration} \times 8 \text{ faculty} = \$2,000$). By Year 3, PI's should have results to share at national conferences ($\$500/\text{registration} \times 8 \text{ faculty} = \$4,000$). In Year 4, faculty will attend regional conferences ($\$300/\text{registration} \times 8 \text{ faculty} = \$2,400$). In Year 5, faculty will attend national conferences ($\$500/\text{registration} \times 8 \text{ faculty} = \$4,000$).

Outreach Activities—Grazing Cover Crops (Hall) (\$125,000). Funds are requested to support outreach, technical support, and demonstrations for ranchers and farmers interested in grazing cover crops at the Nancy M. Cummings Research Extension and Education Center (1 demonstration of climate-smart practices = \$21,000/year for seed,

soil and plant measurements, electric fencing, equipment rental time and signage); 2 workshops per year that bring together interested ranchers and farmers ((\$2,000 per event for light refreshments (40 attendees per event x \$15/person= \$600/event), travel for two invited speakers (\$500/speaker= \$1,000/event) and recruitment materials and handouts=\$400/event)). Total yearly request is (\$25,000) in Years 1-5 = (\$125,000).

5. Fee-for-Service (non-contractual) Analysis Costs (\$245,894)

Note: Analyses may be completed by in-house or external entities (e.g., regional laboratories or other institutions) who provide these services routinely on a fee-for-service basis and are invoiced as they are completed.

Fee-for-Service (non-contractual) Sample Analysis Fees (Chibisi) (\$168,000). Funds are requested for forage sample analysis in Years 1-5 (\$33,600/year). Yearly costs are \$175/sample x 192 samples (8 farms x 4 plots/farm x 3 samples/plot x 2 sampling times = 192 samples/yr). This data is essential to understanding the more system wide impacts of CS practices specific to livestock grazing.

Fee-for-Service (non-contractual) Biogeochemistry Laboratory Analyses Fees (Kayler) (\$77,894).

Funds are requested for the following analyses fees as part of the GHG and C monitoring and modeling team. The data will also help quantify the broader impacts of CS adoption:

Plant Analyses (\$2,750)

- Analyses of plant biomass carbon and nitrogen. \$550/year in Years 1-5 = \$2,750.

Soil Analyses (\$27,864)

- Benchmark farms (\$16,200)
 - Analysis of soil total carbon and nitrogen (3 cores/treatment x 5 treatments x 5 depths/core x \$10/sample x 4 Benchmark sites x 1 samplings/year = \$3,000/year in Year 1 and Year 5 = \$6,000).
 - Fractionation analysis based on particle size, pom, and maom (\$4,500/year in Year 1 and Year 5 = \$9,000).
 - pH analysis (3 cores/treatment x 5 treatments x 5 depths/core x \$2/sample x 4 sites = \$600/year in Year 1 and Year 5 = \$1,200).
- Tier 1 sites (\$11,664)
 - Analysis of soil total carbon and nitrogen (3 cores/treatment x 1 field/farm x 3 depths/core x \$10/sample x 24 farms x 1 samplings/year = \$2,160/year in Year 1 and Year 5 = \$4,320).
 - Fractionation analysis based on particle size, pom and maom, 2 Tier 1 sites per benchmark site = 10 sites. (\$1,080/year in Year 1 and Year 5 = \$2,160).
 - pH analysis (3 cores/field x 1 field/farm x 3 depths/core x \$2/sample x 24 sites = \$432/year in Year 1 and Year 5 = \$864).
 - Analysis of soil total carbon at the 2 ft depth in year 3. Tier 1 sites (3 cores/field x 2 depths x \$10/sample x 24 farms= \$1,440)

Budget Justification

- *Analysis of soil carbon in the surface of Tier 3 farms in years 1 and 5 to aid modeling work. 24 Tier 2 farms will be included (3 cores/field x 2 depths x \$10 sample x 24 Tier 2 farms= \$1,440/year in Year 1 and Year 5 = \$2,880)*

Fee-for-Service (non-contractual) Plant Available Nutrient Analyses (NHR+ and NO3-) (\$14,880)

- Benchmark farms
 - *3 core samples/treatment x 5 treatments x 5 depths/core x \$8/sample x 4 sites = \$2,400/year in Years 1-5 = \$12,000.*
- Tier 1 sites
 - *3 depths x 1 representative sample/field x 24 sites x \$8/sample = \$576/year in Years 1-5 = \$2,880.*

Fee-for-Service (non-contractual) Soil Health Analyses (POXC, PLFA, WEOC, WEON, AVAIL N and P) (\$32,400)

- Benchmark farms
 - *3 cores samples/treatment x 5 treatments x 2 depths/core x 4 sites x \$60/sample = \$7,200/year in Year 1, 3 and 5 = \$21,600.*
- Tier 1 sites
 - *3 cores/field x 2 depths/core x 10 farms x \$60/sample = \$3,600/year in Year 1, 3 and 5 = \$10,800.*

6. Other Project-Specific Costs (\$1,115,700)

i. Research Article Publication Costs (\$20,000).

Funds are requested in Years 3-5 for fees to publish project research results in scholarly journals. These costs include per-page publication and open-access (free online access to journal subscribers and non-subscribers) fees, which will provide researchers and interested stakeholders access to peer-reviewed articles authored by the University of Idaho Climate Smart Agriculture team. Per-page and open-access fees vary, with an average of \$1,000 to \$10,000 per article (*Source: Du, Jingshan S. "Opinion: Is Open Access Worth the Cost?" in The Scientist, June 2022, Issue 1*). Per-page and open-access fees for the following subject-relevant articles listed below average \$2,875 per article. Fees vary by publisher and subject matter (e.g., science-based journals have higher fees than social science journals) but include submission fees, copy-editing, typesetting, page/color printing charges, indexing, permanent storage, and unrestricted online access. Journal titles and costs from representative journals include:

- Frontiers in Sustainable Food Systems: Agroecology and Ecosystem Services (\$2,080 per article)
- Agronomy Journal (\$200 per page plus \$1,350 per article for open access = \$3,350 for a 10-page paper)
- PLOS Climate (\$2,100 per research article)
- Soil and Tillage Research (\$3,970 per article)

Using the average of \$2,875/article, we estimate publishing ~7 articles over the life of the project. Funds are requested in Year 3-4 (\$5,000/year) and Year 5 (\$10,000) for a total of \$20,000.

Budget Justification

ii. Equipment or Facility Rental/User Fees (\$6,000).

Benchmark farm land-use fees to include seed and fertilizer (\$400/acre x 1 acre/year x 3 farms/year = \$1,200/year in Years 1-5 = \$6,000.

iii. Tuition/Student Fees (\$583,825).

Funds are requested to support graduate research assistants' tuition/fees at the 2021/22 base rate of (\$9,912/year) and mandatory student health insurance (\$1,902/year) including a 2% annual increase starting in Year 2. The number of graduate students per year is: Year 1 (12); Year 2 (13); Year 3 (12); Year 4 (11) and Year 5 (0) for a total of 48 graduate students over the life of the project. Requested tuition for Year 1 is (\$118,944), mandatory insurance for Year 1 (\$22,824). Total request for tuition (\$489,832) and (\$93,993) mandatory insurance.

iv. Fee-For-Service (non-contractual) Data Management Services (\$498,675). UI's Research Computing and Data Services (RCDS) will provide data management services and will invoice the project regularly. Services include management of all project data to allow secure storage, searchability and sharing; creation of a data management plan; and development of tools and a data dashboard for data storage, searching/retrieval and visualization. The data management system will allow producers to report annual management practices for their enrolled fields through a secure, online data entry system.

v. Advisory Board Member Travel Costs (\$7,200). A \$120/night travel reimbursement allowance is provided to cover 1 night of lodging for 12 advisory board members (non-University employees) while attending the annual meeting in Years 1-5. The meeting will alternate locations between Moscow, Idaho, (Years 1, 3, and 5) and Boise, Idaho (Years 2 and 4).

i. Total Direct Costs (\$51,988,286)

j. Indirect Costs (\$3,011,713)

Indirect charges were calculated using the University of Idaho federally negotiated indirect rate for on-campus 'other' activities (38%) on Modified Total Direct Costs (MTDC), consisting of all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subaward. MTDC exclude equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs, and the portion of each subaward in excess of \$25,000.

	<u>Direct Costs</u>	<u>MTDC (Indirect Eligible)</u>
<i>a. Personnel</i>	\$4,021,990	\$4,021,990
<i>b. Fringe Benefits</i>	\$1,024,622	\$1,024,622
<i>c. Travel</i>	\$624,412	\$624,412
<i>d. Equipment</i>	\$1,628,869	\$0
<i>e. Supplies</i>	\$555,770	\$555,770
<i>f. Consultants</i>	\$0	\$0
<i>g. Construction</i>	\$0	\$0

Budget Justification

h. Other

1. Subawards (A. Key Prog.)	\$42,000,030	\$150,000
Subawards (B. Mrkt Mini-Grants)	\$225,000	\$225,000
2. Advisory Board Meeting Costs	\$16,600	\$16,600
3. Survey Costs	\$28,000	\$28,000
4. Extension/Outreach	\$501,400	\$501,400
5. Fee-for-Service (external)	\$245,894	\$245,894
6. Other Project Costs		
<i>i. Publication Costs</i>	\$20,000	\$20,000
<i>ii. Equipment/Facility Rental</i>	\$6,000	\$6,000
<i>iii. Tuition/Fees</i>	\$583,825	\$0
<i>iv. Fee-for-Service (internal)</i>	\$498,675	\$498,675
<i>v. Advisory Board Travel</i>	\$7,200	\$7,200
7. Other Project Costs (subtotal)	<u>\$1,115,700</u>	<u>\$1,115,700</u>

h. Other Subtotal

i. Total Direct Costs

\$44,132,624

\$1,698,769

i. Modified Total Direct Costs (MTDC)

\$7,925,563

j. Indirect Costs

(MTDC of \$7,925,563 x 38%)

\$3,011,713

k. Total Direct (\$51,988,287) &

Indirect (\$3,011,713) Costs

\$55,000,000

k. TOTAL DIRECT AND INDIRECT COSTS (\$55,000,000)

Cost-Share Justification

The Nature Conservancy (TNC) is providing the following voluntary cost-share in personnel salary and fringe benefits over the life of the project:

- 1. Neil Crescenti (Project Manager)** will contribute 637 hours total in Years 1-5 to managing the TNC portion of the project. Neil will provide oversight of daily activities for TNC staff and lead the project toward accomplishment of the objectives of the over-all project. Salary for Year 1 is (\$2,123), fringe benefits for Year 1 (\$950). Total cost-share for the project is (\$11,048) salary and (\$4,944) fringe = **(\$15,992)**.

- 2. Bradley Johnson, Farm Strategy Manager** (supervised by Neil Crescenti) will contribute 3,640 hours total in Years 1-5 to managing the demonstration farms, advisement to participating farmers, and oversight of farm advisor. Salary for Year 1 is (\$10,665), fringe benefits for Year 1 (\$4,772). Total cost-share for the project is (\$55,499) salary and (\$24,835) fringe is **(\$80,335)**.

Total Cost-Share/Match: \$96,327

TOTAL PROJECT COSTS (FEDERAL/NON-FEDERAL): \$55,096,327

i. EXECUTIVE SUMMARY

Project Overview: This project will support the goals of the Partnerships for Climate-Smart Commodities National Funding Opportunity (NFO) by 1) increasing adoption of climate-smart (CS) practices on 144 farms in Idaho through the provision of financial and technical assistance to producers, 2) spurring productivity and the sustainability of the growing number of farms owned/operated by underserved producers, 3) empowering producers to participate in and benefit from market-based CS opportunities by creating an efficient, cost-effective method for monitoring, reporting and verification (MMRV) of greenhouse gas (GHG) reductions and tracking of benefits through supply chains, 4) quantifying the impacts of CS practices on system outcomes such as profitability, soil health, and pests and beneficial organisms, 5) working with partners to create markets for CS commodities that reflect consumer demand and benefit the continued development and adoption of CS practices, and 6) widely disseminating project findings. This project will focus on seven key commodities in Idaho with national and international markets: barley, beef, chickpea, potatoes, sugar, wheat, and hops.

Roadmap to this Proposal Narrative

This narrative uses the headings structure provided in the NFO. Twenty-five *Key Activities*, called out throughout the narrative are listed in Table 1, Page 5.

A. Contact: Project Director (PD), Jodi Johnson-Maynard, University of Idaho, jmaynard@uidaho.edu

B. Project Partners:

Funded partners (letters of support and subcontract budgets included)

University of Idaho (UI), Idaho Association of Soil Conservation Districts (IASCD), The Coeur d'Alene Tribe (Schitsu'umsh), The Nez Perce Tribe (Nimiipuu), The Nature Conservancy (TNC), and Desert Mountain Grassfed Beef (DMGB)

Consultants (letters with quotes attached)

Salmon Safe/Kooskooskie Fish LLC (SS) and The Wave Foundation (WF)

Non-funded partners (letters of support attached)

Commodity groups, supporting producers, multinational and local/regional processors, state entities and non-profit organizations

Underserved/Minority-Focused Partners: Native American tribal partners and New and Young Farmer and Ranchers (Idaho Farm Bureau Program)

C. Compelling Need for This Project: The observed and predicted impacts of climate change on agricultural production and food security (IPCC, 2019; Ortiz-Bobea et al., 2021) are driving interest in food system transformation (Dinesh et al., 2021). Producers in the U.S. and elsewhere are actively adopting management systems that focus on soil health (Krupek et al., 2022) and regenerative practices (Newton et al., 2020), and agri-food companies are implementing sustainability programs (Jindřichovská et al., 2020). These conditions present an unprecedented opportunity to mitigate the agricultural sector's contributions to climate change while enhancing the sustainability of U.S. farms through market-based programs. This project brings together producers, public, private, and non-profit entities from across supply chains to pilot a market-based system that supports CS production of seven major Idaho commodities, with a significant potential impact on the state (letter of support from Congressional Delegation). The significance of this project includes:

- *Increasing CS Agriculture in Idaho.* Agricultural production and processing represent 17% of Idaho's economic output (12.5% of GDP) (ISDA, 2022). Idaho is the top producing state for potatoes and barley, ranks among the top six states for wheat production, and produces 20% of the sugar beets harvested in the U.S. Idaho also ranks 12th in the country for cattle with over 8,000 beef operations (USDA NASS, 2019) and includes major pulse and hops growing regions. CS practices are known for these systems but not yet widely practiced.
- *Strengthening CS Initiatives of Agri-Food Industries.* Several large agri-food companies that depend on Idaho's key commodities have sustainability plans, although the on-farm CS elements of these plans are underdeveloped.
- *Involving Underserved Producers.* Idaho has a growing number of small-acreage producers. From 2012 to 2017, the number of < 50-acre farms increased by 27% (USDA NASS, 2019). Smaller farm size is a strong indicator of diversifying farmer demographics because underserved growers tend to own and/or operate smaller farms (Horst et al., 2019). Importantly, 31% of Idaho's principal producers are women, and this group grew from 12 to 31% of producers between 2012 and 2017. More than 20,000 of Idaho's 25,000 farms have total value of sales less than \$100,000 (USDA NASS, 2019).
- *Implementing CS Practices in Diverse Cropping Systems.* Idaho has extreme geographic diversity with various combinations of climate, soils, levels of management and inputs, irrigation (dryland to irrigated), and histories of soil degradation due to processes such as acidification (Brown et al., 2008) and soil erosion (Busacca et al., 1993; Koluvek et al., 1993). This diversity provides an opportunity to evaluate and implement CS practices appropriate for different settings across the U.S. within a single region and agricultural economy.
- *Improving Adaptation to Climate Change.* Idaho's climate is projected to change, with shifts in temperature, precipitation, and atmospheric CO₂ levels (Klos et al., 2015; Abatzoglou et al., 2021) imposing new challenges for agriculture including incentives to overutilize fallowing (Kaur et al., 2017) and increased demand for irrigation water (Hatzenbuehler et al., 2022). CS practices can be implemented to make cropping systems more resilient to climate change induced stresses.
- *Building on Existing Partnerships.* Mitigation and adaption strategies have been explored in the region through large, USDA-funded research projects that have provided expertise and forged relationships that will enable success of this project.

D. Approach to Minimize Transaction Costs Associated with Project Activities: This project will direct 75% of its funding directly to producers and 25% to supporting activities. Farmer incentives will be distributed by subcontracted partners to their existing producer client networks. Project funds not going directly to producers will cover administrative costs and costs of monitoring, modeling, verification, reporting, providing technical support to producers, surveys and focus groups to delineate supply chain implications, structure and marketing implications, evaluating CS farming sustainability, and developing resources to support continuing adoption. This project includes 20 non-funded partners who have pledged to share their time and expertise to help meet the project goal.

E. Approach to Delineate and Reduce Barriers to Adoption of CS Farming Practices:

Factors such as farmer age, years spent farming, participation in professional networks, access to information, farm size, and perception of risk, influence the likelihood of adoption of new practices (Barbercheck et al, 2014; Baumgart-Getz et al., 2012; DeDecker et al., 2022). For producers from historically and currently marginalized groups, these factors are often amplified

in ways that decrease adoption of new practices (Carter, 2019). Uncertainty concerning costs, benefits, profitability and technical aspects of CS management may also hamper adoption (Duke et al., 2022). Much of Idaho's farmed land, especially Tribal lands, is leased, which may disincentivize the adoption of conservation practices (Ulrich-Schad et al., 2016; Ranjan et al., 2019, Tosakana et al., 2010). Conservation on leased land typically depends on landowner gender and the landowner-leaser relationship (Barbercheck et al. 2014; Druschke and Secchi 2014; Wells and Eells, 2011).

In this project, the specific socioeconomic and technical barriers faced by participating producers (early adopters and adopters) and leasing landowners will be assessed through interviews (Table 1, Activity SE4). Information gathered will include demographics, interactions with support groups and technical service providers, levels of adoption, and perceived benefits and threats to the continued use of CS practices. The data gathered will allow identification of pathways to overcome barriers to adoption for producers not receiving incentives from the project, customized recruiting messaging and the design of effective and targeted outreach to all producers (Table 1, Activities SE1). Specific recruitment messages for adoption of CS practices for each group of producers will be designed and tested following Reddy et al., (2020). Given the importance of peer-to-peer mentoring to adoption of new practices (Gedikoglu et al., 2019), prominent signage will be placed along fields to highlight the CS practices occurring on farms. A random survey of producers (Table 1, Activity SE6) will further assess barriers to adoption and include an analysis of how producer networks and access to information, such as CS signage, in their community may influence their decision to adopt CS practices.

Quantification of the system-wide impacts of CS practices on performance metrics and profitability (Table 1, Activities T1-T12) will allow the development of outreach materials that reduce uncertainty related to knowledge of technical management aspects and profitability, thereby increasing adoption.

F. Geographic focus: This project's domain of inference is the 5 million acres of cropped farmland in Idaho, which includes dryland and irrigated systems. Measurements of GHG benefits (Table 1, Activities G1-G3) and agronomic metrics (Table 1, Activities T1-T12) on our enrolled farms will scale up for inference to our focal crops across the state. These crops are marketed nationally and internationally, broadening the impact of this project.

G. Project management capacity of partners: All partners have extensive experience working with producers and landowners and promoting CS activities.

Funded Partners. The University of Idaho (UI) has led two major USDA-funded Coordinated Agricultural Projects (total awards: \$23.5M) focused on climate-change and sustainable agricultural production. Project Director (PD) Johnson-Maynard and co-PD Eigenbrode led these projects, which worked across disciplines and involved producers and other stakeholders to generate data on CS practices and their adoption to inform this project (e.g., Waldo et al., 2016; Stockle et al., 2017; Antle et al., 2017; Kaur et al., 2017; Maaz et al., 2017; Pan et al., 2017; Eigenbrode et al., 2018). The UI research and Extension teams on this project generate >50,000 stakeholder contacts annually and have 150 years of combined experience conducting outreach and on-farm research. Five subcontractors will manage incentive payments to our targeted farms and 103,100 acres across Idaho. 1) IASCD (50 districts) has a coordinated statewide network of educators who regularly work directly with producers. 2) TNC works with producers and landowners across the nation and in Idaho currently operates an incentives program that contracts growers to implement sustainable practices. Our Tribal partners, 3) the

Nimiipuu and 4) the Schitsu'umsh have land management leadership dedicated to monitoring and reducing the tribal carbon footprint and promoting CS activities. The Nimiipuu led an EPA-funded project that provided incentive payments for conservation farming on Tribal lands. 5) DMGB is a producer-run cooperative that collaboratively manages over 2.5 million acres of land using regenerative practices. The cooperative markets their beef throughout the west.

Non-funded partners. Our 20 non-funded partners are service organizations for producers or food processors or are private entities in the food processing and marketing sectors including small scale, vertically integrated farms that direct market value-added products. Their roles differ (see letters of support) but each is committed to the success of the project and will provide support ranging from communication with producers, evaluating information and tools, to implementing information from our surveys in their commodity supply chains.

Project Organization (Fig. 1). An **Executive Committee** led by PD Johnson-Maynard and Co-PD Eigenbrode will have a member from each funded partner. A **Performance Leads Group** will include UI faculty leads for each of five **Performance Teams** (GHG

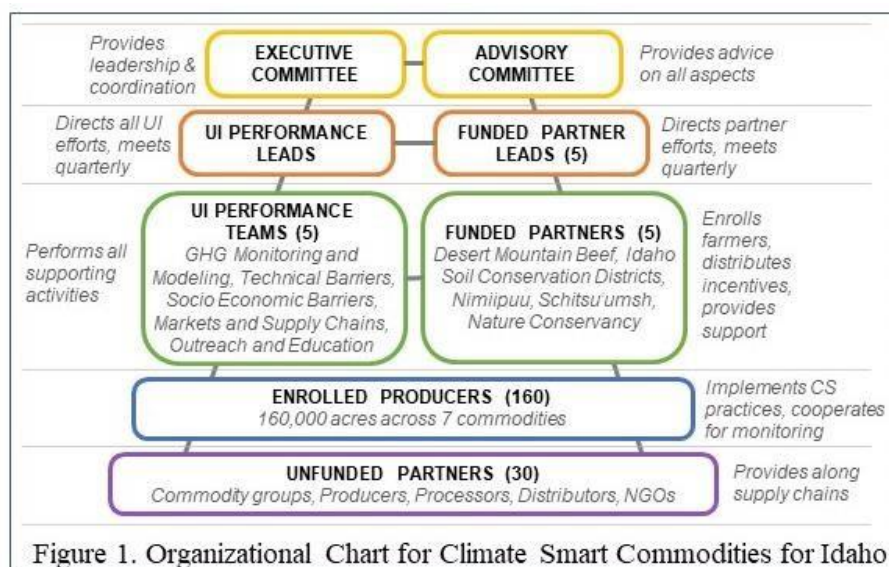


Figure 1. Organizational Chart for Climate Smart Commodities for Idaho

Teams (GHG Monitoring and Modeling, Technical Barriers, Socio-Economic Barriers, Marketing and Supply Chain, Outreach and Education). An **Advisory Committee** will include representatives of each funded partner and several nonfunded partners.

Other Management Aspects

Collaborative Culture. Using methods developed by Co-PD Eigenbrode (Eigenbrode et al., 2007, O'Rourke et al., 2013, Eigenbrode et al., 2017), annual meetings will include activities designed to promote transdisciplinary communication and an inclusive collaborative culture.

Assessment. The project's milestones and deliverables will be assessed semi-annually by an internal assessment specialist (Assessment Lead, Ghimire) using surveys and focus groups with project participants including producers, funded partners and researchers.

Data Management. A data management plan will be implemented by UI's Research Computing & Data Services (RCDS) working with project leadership. This will include a data repository, portal design and maintenance, on-line resources for enrolled producers and other potential adopters of CS practices, consumers, and the public. RCDS will develop an interactive, geospatial dashboard to disseminate and visualize these data and an online data entry system where participating growers can report their management practices. The system developed will be designed to preserve grower privacy while enabling the necessary analyses, modeling, and

reporting. In addition to managing the data, the Data Manager will serve as a key liaison to partners to integrate the disparate data and build meaningful data dashboards.

Administrative Support. A full-time Project Manager and a part-time Administrative Coordinator will be employed by the project (see Budget Justification) to ensure communication among partners and manage daily administrative tasks.

Table 1. Key Activities over the life of the project. An expanded version with potential quarterly milestones and deliverables, the metrics to be used to assess milestone completion and the responsible parties appears on page 25 of this document (after references cited).

Project Management, Education, Data Management, Assessment (Proposal Section iE)

PM1. Leadership structure established
PM2. Convene all-project and leadership meetings
PM3. Reporting to sponsor
PM4. Attending CSAF leadership meetings
DM. Implement a data management plan for the project
A. Assess progress on milestones and deliverables

Recruit, Enroll, and Provide Technical Support for Producers (Proposal Section iiB)

Prod1. Recruit producers through institutional partners
Prod2. Establish contracts with producers and provide scheduled payments contingent on compliance
Prod3. Provide technical support as needed for producers

Education and Outreach

E1. Develop educational and outreach materials for the project
E2. Conduct field days and make presentations to enrolled producers and all producers

MMRV - GHG Emissions and Soil C (Proposal Section iii)

G1. Soil cores (1.5m) for physical and chemical analysis, bulk density, pH, lab assessment of CO ₂ burst, N ₂ O and CH ₄ fluctuations with soil moisture, temperature change and microbial communities; seasonal chamber flux measurements, Micro-met, soil moisture and temperature probes, B farms
G2. As in G1, but noncontinuous chamber flux measurements for COMET Planner data, T1 farms
G3. Self-reporting and validation of practices for COMET Planner implementation, T2 farms

Social, Economic, Supply Chains, Phase 1 (Years 1 and 2) (proposal sections i.E., iv.E and iv.D)

SE1. Producers: Compare characteristics of producers 1) receiving invitations to participate in the project; 2) agreeing to participate in the project, and 3) representing demographics of Idaho's farmer population (USDA census data)
SE2. Supply Chain 1: Targeted surveys of 1) food service buyers and 2) distributors
SE3. Supply Chain 2: Consumer survey to identify willingness-to-pay for CS products

Social, Economic, Supply Chains, Phase 2 (Years 2-3.5)

SE4. In-depth interviews and farm observations with landlords, tenant producers, and landowner producers to understand how each group is managing the adoption of CS practices
SE5. Supply Chain 3: Follow-up interviews of food service buyers and distributors, or other supply chain actors identified as critical in the SE2, previous interviews, and SE3

Social, Economic, Supply Chains, Phase 3 (years 3.5-5)

SE6. Producers: Surveys (to 2,450 randomly selected producers; goal of 450 completed) to assess impacts of project on knowledge and perspectives on CS agriculture
SE7. Supply Chain 4: Focus groups to evaluate and interpret the overall CS wheat supply chain

SE8. Agent-based modeling of supply, demand, logistics, and market dynamics
SE9. System dynamics modeling projections

Social, Economic, Supply Chains, Annual (Proposal section iv)

SE10. Interviews with selected enrolled producers to assess on-farm costs and returns for CS practices
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Technical: Crop Yield and Quality (proposal sections i.E and i.G)

T1. Yield monitoring, all crops – all T2 farms
T2. Crop Quality, cereals: - germination, protein content, hardness, grain size – (selected) T2 farms with cereals*
T3. Crop Quality, potatoes, specific gravity, grade, size profile, sugar content – (selected) T2 farms with potatoes*
T4. Crop Quality, sugar beets, nitrates, sugar content, estimated recoverable sucrose – (selected) T2 farms with sugar beets*

Technical: Soil Quality - B, T1 farms only

T5: Plant available N and P; KCl, pH (Soil Survey Staff 2014, Mulvaney 1996, Mehlich et al. 1984)

Technical: Pests, Weeds, and Diseases - B, T1 farms only

T6. Diseases, cereals:- pre-plant pathogen and nematode soil testing at selected B, T1 and T2 farms with cereals. Analysis of disease incidence data provided by on farm crop consultants/disease scouts. Laboratory diagnosis and testing of submitted samples when field or digital diagnosis not possible.
T7. Diseases, potatoes:- pre-plant pathogen and nematode soil testing at selected B, T1 and T2 farms with potatoes. Seed tuber disease screen testing at B and T1 farms. Analysis of disease incidence data provided by on farm crop consultants/disease scouts. Laboratory diagnosis and testing of submitted samples when field or digital diagnosis not possible.
T8. Diseases, sugar beets: - pre-plant pathogen and nematode soil testing at selected B, T1 and T2 farms with sugar beets. Seed tuber disease screen testing at B and T1 farms. Analysis of disease incidence data provided by on farm crop consultants/disease scouts. Laboratory diagnosis and testing of submitted samples when field or digital diagnosis not possible.
T9. Diseases, hops: - Spore trapping conducted at two locations in south west Idaho selected from B and T1 farms. Visual disease scouting conducted once per site in early August at all B, T1 and T2 hop farms in southwest Idaho. Analysis and interpretation of hop quality and yield data provided by growers.
T10 Foliar pests and beneficials - Sweep nets and vacuum sampling – Selected B, T1, and T2 farms
T11. Weeds - Visual and biomass, by species, 1 m ² quadrats – Selected B and T1 farms

ii. PLAN TO PILOT CLIMATE-SMART AGRICULTURAL PRACTICES

Wheat (1,182,797 acres, 23% of cropped acreage), potato (335,042 acres, 7%), barley (524,307 acres, 11%), sugar beet (168,376 acres, 3.6%) and chickpea (61,000 acres, 0.8%) and hops (9,641 ac, 0.19%) (USDA

NASS, 2019) are major Idaho commodities that enter national and international supply chains for flour, processed potato products, beer, raw sugar, and hummus. Beef cows are raised on over 8,000 farms across the state, encompassing approximately 27% of the cropped area. Moving these major commodities to CS practices will generate considerable savings in GHG emissions and increased soil carbon storage – impacts that would propagate through their respective supply chains. This project will target more than 1% of Idaho’s acreage in our focal commodities and change the culture around CS adoption at a broader scale.

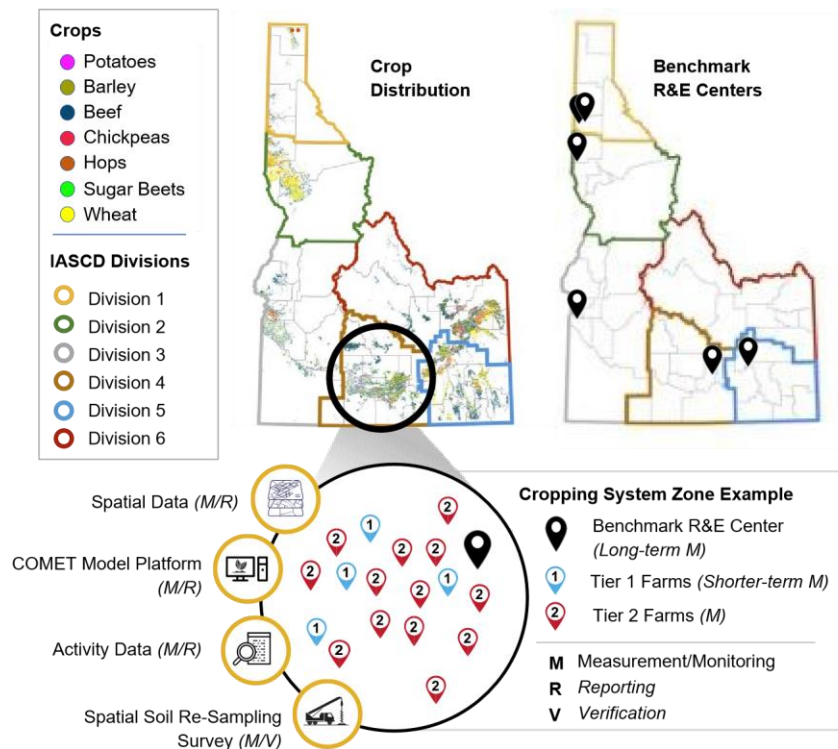


Figure 2. Synopsis of project scope. Left top and legend: crop distributions for the state (based on NASS) and boundaries of IDASCDs, a key implementation partner. Right top: Benchmark farms sites. Bottom: Tier 1 and Tier 2 farms within a district with GHG and soil activities.

A. CS Practices to be Deployed: The focal commodities are produced in various parts of the state (Fig. 2), require different methods for successful production, and are suitable for different CS practices. Enrolled farms will implement CS practices drawn from a set of options (Table 2) known to reduce GHG emissions under the Soil Enrichment Protocol (Climate Action Reserve, 2020). Practices will be assessed for additionality in GHG impacts using tools provided by the Climate Action Reserve (SEP Additionality Tool and Nitrogen Management Protocol) to ensure that new GHG benefits will be created through this project. Producers currently receiving federal funds for a specific practice will be ineligible to receive funds through this project for that same practice and acres, but may participate by adding a new practice. The primary practices considered in this project are eligible for federal cost-share programs and are classified by NRCS as being climate-smart. Of the practices listed, biochar (practice standard developed in 2020) and interseeding of pulses in crop and pasture are the least studied in Idaho, but have significant potential to increase soil carbon stocks (Cong et al., 2015; Chagas et al., 2022) and reduce N₂O emissions (Yanai et al., 2007, Sohi et al., 2009, Singh et al., 2010, Pappa et al., 2011, Senbayram et al., 2016; He et al., 2017, Borchard et al., 2019). The impact of biochar or interseeding on GHG reductions, however, are somewhat variable and can be influenced by soil type, fertilizer application rate and other variables. For these practices, it is especially important to demonstrate

the impacts at Benchmark sites (Fig. 2), which offer a range of soil and climatic conditions. The Benchmark site located on Schitsu'umsh land will focus heavily on biochar given that the Tribe has both farm and forested land, the latter of which will serve as a source of biochar for the project starting in year 2. Co-PIs Liang and Kayler are currently studying intercropping in cereal crops through funded projects and their results will help streamline treatments at Benchmark, tier 1 and 2 sites. These data will contribute to our ability to model GHG reductions when biochar applications or legume interseeding are adopted. All practices are expected to impact GHG reductions for the entire study period through either carbon storage or their ability to reduce fertilizer inputs. None of the practices considered will cause disturbance below the tillage zone. Grazing of cover crops will require the use of temporary electrical fencing that does not require insertion past a depth of 4-5 inches.

Table 2. CS practices and practice codes* to be deployed with their expected GHG reductions based on acres available in irrigated and dryland regions, current adoption rates and interest among producers gathered through needs assessments; GHG benefits modeled with COMET-Farm.

Practice	Code	Expected GHG Reduction (tonnes CO ₂ eq/year)		
		Dryland	Irrigated	Total
Conservation Crop Rotation**	328	1,592	3,206	4,798
Cover Crop	340	5,510	7,484	12,994
Prescribed Grazing	528	4,528	4,898	9,425
Residue and Tillage Management, Reduced Till***	345	2,661	2,475	5,136
Residue and Tillage Management, No Till***	329	2,602	4,072	6,674
Nutrient Management	590	8,430	1,892	10,322
Soil Carbon Amendment	808	2,513	6,513	9,026
Biochar****	808	844	2,548	3,392
Total annual GHG reductions expected				61,767

* In addition to the designated practice codes listed, required conservation practices needed to facilitate the management of the listed practices will be incorporated and planned, as applicable.

**Interseeding of legumes (covered under practice 328) in cropland is currently not available in COMET. Based on published findings (see in-text citations), reductions were assumed to be similar to those expected with 50% replacement of fertilizer N with composted manure.

***State-wide average adoption is 14% for reduced and 7% for no-till. Maximum adoption in any one county is 48% for reduced and 47% for no-till. Target number of acres was set to double adoption of reduced and no-till in each zone, or reach the 10% adoption rate, whichever is greatest.

*****Biochar amendment is not available in COMET. Based on published findings (see in-text citations), an estimate of 25% N₂O reduction as compared to baseline estimates in COMET was assumed.*

B. Plan to Recruit Producers and Landowners, Including Estimated Scale of the

Project: Funded project partners will recruit and maintain producer enrollments. Each partner has existing working relationships with producers built on years of trust. The budget is based on partners' assessment of the project's capacity to enroll a total of 144 farms with an average of 716 acres per farm, for a total of approximately 103,100 acres enrolled. Enrollment will phase in, from 70 producers in the first year, to 144 in years 2-5. All participating producers will meet eligibility requirements as listed in the NFO and in the Soil Enrichment Protocol (Climate Action Reserve, 2020). Prior to the start of this project (October 1, 2022), all funded project partners enrolling producers will meet to receive training on requirements such as eligibility related to Highly Erodible Lands and Wetlands policy, eligible practices, additionality, permanence, and reporting. Early adopters of CS practices will be included and incentivized to add new practices, and a subset of these producers have been involved in project planning. Data from these farms and ranches will improve our ability to model additional benefits when multiple CS practices are applied to the same field. All enrolled acres will be on land that is currently used for agriculture and, due to the nature of the practices under consideration, concentrated animal feeding operations (CAFOs) will not be eligible.

Plan to Provide Technical Assistance, Outreach and Training: Each funded project partner has trained agronomists, experienced producers and/or conservationists on staff who will provide technical assistance to producers to varying degrees (see Letters of Support). These partners will make regular seasonal visits to farms and in response to requests for assistance and to verify practices. The main providers of technical support will be the IASCD, TNC and UI Extension Working Group (EWG), a group of county Extension educators from across the state. The EWG will develop educational materials for enrolled producers but also to a broad audience to help reduce adoption barriers identified through Activities SE1, SE4 and SE6 (Table 1). UI Extension provides bulletins in English and Spanish, which will allow the team to impact a greater number of underserved producers. The project's online dashboard and portal will provide information freely to producers, partners, processors, consumers, researchers, and the public. The portal will share the aims and progress of the project, and new information about CS farming through text, video, audio and interactive resources. Information will include data visualization of statewide soil C sequestration, GHG emissions, C footprint, crop yield mapping, pest monitoring, economic returns, local sensor monitoring, ground-truth data, and model predictions demonstrating long-term economic and environmental benefits of CS practices. A "train-the-trainer (TTT)" approach will ensure that all project staff (UI as well as those employed through partners) provide up-to-date information and assistance to producers on CS practice management, measurement and use of COMET Planner. Specific topics and dates for TTT workshops (2-3 project-wide events annually) will be led by the EWG. Funds (\$390,000) to support the trainings and workshops are requested in the UI budget. The TNC has requested two partial positions to improve their ability to provide technical support to the growers they enroll. Provision of technical support to growers is an established part of the mission of our soil conservation districts across the state. To support the level of work associated with this project, the IASCD has requested funding for two field coordinator positions that will provide technical support to producers implementing CS practices.

Desert Mountain Grassfed Beef's membership includes ranchers with over 15 years of experience with regenerative agriculture. Desert Mountain Beef leadership will help facilitate the coordination of speakers at workshops organized by UI extension and focused on the impacts of livestock-crop integration on soil health. Both tribal partners have committed to providing support and technical assistance to their producers in the form of farm visits and CS workshops (see budget narratives).

C. Plan to Provide Financial Assistance for Producers/Landowners: Through our funded partners, producers will receive incentive payments to adopt CS practices. The average incentive payment will be \$60 per acre per year (expected range of \$25-\$140 per acre per year, USDA NRCS (2022) and input from producers) of implementation. Payments will vary depending upon CS practice costs of implementation and specifics of enterprise budgets for each crop and will be structured to incentivize practices in each enrolled year. Enrolled producers will sign contracts patterned after those currently used by funded partners and templates available through the Climate Action Reserve, and stipulating required implementation and monitoring for a minimum of three years. At the first project-wide meeting (prior to the project start date) all funded partners will participate in developing guidelines on the range of payments to be made for each practice and prior conditions on each farm. USDA-NRCS soil conservationists will be invited to participate in these discussions.

D. Plan to Enroll Underserved and Small Producers: At least 30% of enrolled producers will be from underserved communities. This goal is achievable because, based on the USDA Ag. Census, 31% of Idaho's principal producers are women, 2.9% are Hispanic, 0.6% are Native American Indian and 0.2% are of Asian descent. Women principal producers are especially critical given that this group grew from 12% to 31% between 2012 and 2017. Approximately 81% of Idaho farms report value of sales of less than \$100,000 (USDA NASS, 2019), demonstrating the importance of including small producers. Partner IASCD will conservatively engage 15-20% participation by underserved communities as defined by USDA, mostly veterans, women, and small producers. Overall, our project will prioritize the inclusion of farmers who are tribal members, women, small producers (<\$100,000 in sales per year), veterans and beginning farmers and ranchers in our project.

Our funded partners include two sovereign tribal nations, whose lands are primarily leased, but for whom maintaining the sustainability of practices on these lands is a long-standing difficulty that this project will help address (see letters of support). Some producers on reservations are tribal members and we will seek to enroll 100% of these producers in our work. The policies of each of our tribal partners include provisions to ensure "Food Sovereignty" and this project supports that principle. All funds designated to our tribal partners will contribute to building long-term sustainability on their lands. Additional avenues to enroll underserved producers include working with bilingual extension educators to reach Hispanic producers and with Idaho Farm Bureau's Young Farmer and Rancher program, which includes new and small producers. The project's minigrants will be allocated to small, vertically integrated producers and other underserved processors. Examples include Hillside Grains (woman owned and operated), Zacca Hummus (woman operated and co-owned) and Idaho Brewers United (small scale processors and distributors). The principles of Diversity and Inclusion are prominent in the UI Strategic Plan and our team is 33% female, 7% African American and 20% Asian, and represents

eight different countries. As is our usual practice, diversity will be a factor in all UI staff hired through this project.

iii. MEASUREMENT, MONITORING, REPORTING, AND VERIFICATION (MMRV) PLAN

A. Approach to Greenhouse Gas Benefit Quantification: The measurement and monitoring system will be based on field and laboratory measurements using a spatially nested design to facilitate scaling-up of project results. The Carbon Management Evaluation Tools (COMETFarm) will be utilized throughout the project to establish baselines. This project will generate data from field measurements of GHG emissions that will be used to improve COMET and other models for use within the western U.S.

Stratified Design: The sampling design includes three tiers of sites (Fig. 2, Table 1, Activities G1-G3). First, Benchmark sites will be long-term and located on each of three UI Research and Extension Centers and one on Schitsu'umsh land. Second, approximately 4 sites within each Benchmark/cropping system zone will be designated as Tier 1 sites (24 total). These sites will be selected to represent climate and soil types within each cropping system zone studied and will be intensively monitored, but less so than Benchmark sites. Third, Tier 2 sites (120) will be monitored less intensively for changes in total carbon stock and utilized to increase the power of COMET sensitivity analysis planned during the finalization phase. Benchmark sites will include a business-as-usual (BAU) treatment, which will be used as a comparison to rotations that include CS practices and to set baselines for modeling GHG reductions for Tier 1 and Tier 2 sites within the same district. Where available, BAU fields co-located with Tier 1 farms will also be sampled to help verify GHG reductions.

Initiation Phase: In Year 1, intensive sampling on all Benchmark and Tier 1 sites will take place (Table 1, Activities G1 and G2). Soil cores (1.5m depth, ≥ 3 replicate cores per field depending on soil type variability as determined from the Web Soil Survey; locations determined following recommended strategies (Walsh et al., 2020)), will be collected and analyzed in the laboratory by dry combustion to assess baseline and changes in the total (organic and inorganic) soil carbon stock. Soil bulk density will be calculated for each 30 cm depth increment. Changes to the total carbon stock due to management may be somewhat obscured due to the high spatial variability and slow soil organic carbon (SOC) accrual rates and project length (<10 years). To minimize this problem, we will characterize carbon distribution between two pools, a slower cycling, mineral-associated pool (<53 μm) versus a rapidly cycling particulate organic matter pool (53 - 2,000 μm). We will also characterize soil parameters known to impact soil carbon storage capacity including soil texture by hydrometer, pH, and minerology (on selected samples from each parent material type). Soil on Tier 2 sites will be sampled to 60 cm by producers, with training and assistance from project partners, and analyzed for total carbon (dry combustion). Samples will be collected prior to the initiation of a CS practice, during year 3, and at the end of the project (beginning of Year 5) and analyzed using uniform procedures at the UI.

Development & Monitoring Phase: This phase will include continuous GHG monitoring on Benchmark and Tier 1 farms, working on reporting with producers and partners, and COMET model improvement. In Activity G3 (Table 1), COMET-Farm will be the primary tool utilized to quantify GHG benefits on all farms (Tier 1 and Tier 2 Farms). Additional models will be tested to determine performance with Idaho-specific climate, soil types and data analyzed, baselines and CS practices. Historical baselines, required for modeling purposes, will be determined using

detailed management information supplied by producers during the development of contracts with our project partners. The data will include crop rotation (the type and sequence of crops grown in enrolled fields), tillage and irrigation (type and frequency), planting and harvesting dates, and yields and fertilizer/manure applications (amount and type) for at least six years prior to the addition of a conservation practice. The producer-provided historical data will be recorded through an online tool that securely stores data in the project dashboard. Based on experience with cropping systems across Idaho, we anticipate that the minimum historical baseline will be six years, and that producers generally have this information available in their farm management software programs or files. Where the historical crop sequence is identical to that at the start of this project when CS practices are implemented, a “matched” baseline modeling approach will be utilized. If new crops (not included in the historical baseline) are introduced to the rotation, a blended baseline approach, in which field baselines are updated after each cultivation cycle and averaged, will be utilized (Climate Action Reserve, 2020). In both cases, the difference between the estimated baseline and GHG fluxes during the project will reflect reductions or reversals, in tonnes CO₂(eq). Information on the sources of GHG (denitrification, SOC mineralization, etc.) provided by COMET-Farm will be used to refine our CS management practices to improve GHG reductions.

GHG fluxes will be measured intensively on Benchmark farms, less intensively on Tier 1 farms, and least intensively on Tier 2 farms. Measurements and monitoring equipment at all sites are listed in G1-G3 (Table 1). Continuous fluxes of N₂O, CO₂, and CH₄ will be monitored at the Benchmark sites by automated chambers (2 per CS practice). These data will be stored in multiple ways. Where connectivity is adequate (Benchmark farms), data will be automatically sent to the secure data dashboard and downloaded for data inspection for quality control and summary. The data dashboard will house information on the flux of each GHG for each treatment at each Benchmark farm. Each Benchmark site will host a roving GHG chamber measurement unit (4 chambers per unit) that will be deployed to Tier 1 sites for estimating a GHG budget for each year. Data from the roving chamber systems will be downloaded weekly by graduate students and Benchmark Assistants and added to the main data dashboard for analysis. The Benchmark site measurements and flux models will be used to corroborate and backfill Tier 1 datasets. Tier 2 sites will be monitored based on producer-reporting of management (changes in fertilization, for example) in the online data dashboard and carbon measurements of soil samples sent to UI for analysis. The data manager position assigned to this project (requested in the UI budget) will be responsible for maintaining the data dashboard and providing programing that supports data analysis, sharing, searches and safe storage. The data dashboard will store information in a way that identifies emissions of each greenhouse gas by site, date and treatment and will allow for data visualization and tracking of changes in GHG emissions overtime by comparison to modeled baseline values and measurements made at Benchmark farms.

The impact of CS practices (interseeding pastures and grazing of cover crop) on beef cattle production and forage quality will also be assessed. Forage quality at 8 sites will be assessed at the beginning and end of grazing periods. Nutrient composition and apparent digestibility will be evaluated. Cow body weight and condition core will be recorded to determine performance. A commercial mobile head chamber system (GreenFeed) system will be used to quantify enteric CH₄ and CO₂ emissions during the grazing period (Hristov et al., 2015; Alemu et al., 2019).

Daily individual and herd CH₄ and CO₂ emissions (g/d; g/kg BW) will be calculated (Manafiazar et al., 2016).

To develop a robust and producer-friendly system of assessing GHG benefits with the adoption of new practices, we anticipate the need to test and improve the performance of COMET and other models for use in our region. This is especially true because we anticipate changing precipitation patterns (increased spring precipitation that occurs during snow melt) that may result in periods of soil saturation and increasing the risk of N₂O flux. Currently, N₂O fluxes estimated in COMET are based on soil textural classes and regional climate. We will collect 40 soil cores per year from Benchmark and Tier 1 sites to quantify GHG (CO₂, N₂O and CH₄) flux change with varying soil moisture and fertilization levels in a controlled laboratory setting. The fluxes will be calculated and modeled to establish flux responses during “hot moments” when GHG losses are likely. These results will be used for 1) bridging GHG flux patterns between Benchmark and Tier 1 sites, 2) establishing soil GHG flux parameters for experimental CS practices, and 3) parameterizing Idaho soil and CS practices for testing and updating crop models such as CROPYSYST (Stöckle et al., 1994) and DSSAT (Jones et al., 2003).

B. Approach to monitoring of practice implementation: Partner and UI personnel will inspect enrolled farms to ensure CS practices are in place and properly practiced. These inspections can be done simultaneously with visits to farms for monitoring. Payments will be contingent on compliance with practice implementation. Many of these farms practice rotations that include more than one of our target commodities. Although this introduces complexity, it also will allow integration of this project’s results to assess the net climate impacts of rotational farming systems, in addition to each of the specific commodities that are the focus of this project. Producers will also be required to submit detailed management information through the data dashboard in each year of the project. Project partners and UI team members will assist in training producers in uploading management information and unitizing models to assess their own GHG savings.

C. Approach to reporting and tracking of GHG benefits: Using measurements of changes in GHG emissions and soil carbon, effects of CS practices over initial baselines will be estimated on a per farm, per acre, and per unit of production (using measured yields) basis for each commodity throughout the project. To facilitate accounting procedures, we will adopt the Soil Enrichment Protocol Monitoring Plan/Report (example attached) to record participant provided information and technical data. The monitoring plan is created in the first year and the reporting is performed in the subsequent years. Farm data includes not only information on baselines, permanence, and compliance but also how monitoring, modeling, and record keeping have been performed including signatures by verifiers. Our experimental design of benchmark, tier 1, and tier 2 farms will help constrain uncertainties with model trajectories with different practices in specific regions. This strategy will also help identify potential leakages associated with different practices. All estimates of verification and deviations from the models will be documented in the monitoring plan and report.

GHG mitigation per incentive dollar expended per acre will be calculated. GHG reductions will be tracked throughout the supply chains for each commodity using an agent-based modeling approach (Lu et al. 2021). Measured and modeled GHG benefits will be reported and tracked project wide in the data management system in a manner that allows calculations of an array of metrics. Specifically, supply chain wide GHG benefit tracking will explicitly track the physical and economic benefits throughout the supply chain: from upstream farm level GHG

emission reduction out of GHG flux monitoring data to downstream retail level consumers' willingness to pay for CS labelling. Reporting of the GHG benefit is through the secure data dashboard and highlights the following features: a). Heterogeneity of farmers is considered given that underserved and small producers' GHG benefits could be different from other groups; b). Transparent economic scalability indicator is also provided for the data dashboard where parameters used for each agent's GHG benefits and their interactions with rest of the supply chain are explicitly documented; c). Real-time updates will be an integrated part of the data dashboard such that when reporting from any part of the project receives an update, the agent-based model will update results for the system wide calculations.

D. Approach to verification of greenhouse gas benefits: Validation of GHG benefits and soil carbon storage across all CS practices and sites will be accomplished by annual review of the MMRV process with enrolled producers and through a sensitivity analysis of COMET and other crop models. Producer contracts and management information submitted to each partner will be reviewed by the performance team to ensure that each producer does not enroll the same field/CS practice with different partners. Contracts will include language certifying that each field/CS practice enrolled is not currently receiving funds through a federal conservation program. Producers will also be asked to voluntarily provide information regarding participation in carbon credit-trading programs.

Standard validation/verification protocols will be utilized to document the integrity of the data provided by monitoring instrumentation and the corresponding analysis of self-reporters. We will work closely with producer-enrollees in recording this information. The soil sampling for the validation phase will be the same as the procedures used in the initial phase. The soil carbon accrued will be expressed in stocks and in relation to changes in the amount of specific carbon pools measured. The team will follow established protocols for estimating uncertainty based on the Climate Action Reserve's Soil Enrichment Protocol (2020) and the USDA Technical Bulletin 1939 (Eve et al, 2014).

COMET model sensitivity analysis will include 1) a comparison of output for model runs with and without updated Idaho specific data, 2) comparison with other crop models (CROPSYST, DSSAT) and their possible integration, and 3) a comparison of model runs when GHG flux monitoring data are included in updated baselines. Idaho specific data quantified from soil cores and incubation results will be implemented into the DeNitrification-Decomposition model (DNDC) and replace general estimate equations. The team will run CROPSYST and DSSAT alongside COMET-Farm to identify optimal process representation. If warranted, opportunities to integrate model processes with the COMET model platform will be investigated.

E. Agreement to Participate in Partnership Network: Project leadership has been working on aspects of climate smart agriculture for more than a decade and is eager to be included in a Partnership Network dedicated to improving and implementing these approaches. PD JohnsonMaynard will represent the project and facilitate its involvement in the Partnership Network.

iv. PLAN TO DEVELOP AND EXPAND MARKETS FOR CS COMMODITIES

A. Partnerships Designed to Market Resulting CS Commodities

The project will work with industry partners and consultants to identify CS food products based on the seven focal commodities and to develop requisite designated supply chains.

Barley and hops. Beer is the primary food product produced from malting barley and Idaho is the second largest producer of this crop in the nation. Idaho is also the second-largest producer of

hops and hosts the world's largest hop farm. With partners Anheuser-Busch (AB) Companies and Idaho Brewers United (IBU) the project will support work to develop and market beer with a CS designation. Both partners are motivated and prepared to work with the project to achieve this goal. AB is one of the largest beer producers in the world and IBU represents over 50 microbrewers in the state of Idaho.

Beef. Beef markets include specialty beef with supply chains well-defined from ranch to consumer. DMB is a cooperative of small family-owned, often woman-operated, ranches and farms located throughout the Pacific Northwest that grow Akaushi grass-fed beef through regenerative agricultural practices. DMB will form contracts with beef ranchers and provide expertise on beef supply chains and marketing options for CS beef.

Potatoes. Idaho produces more potatoes than any other state. Most of that crop enters supply chains for processing, especially for French fries. With processing partners J. R. Simplot Company and McCain Foods Company, major potato processing companies located in Idaho or contracting significant proportions of their supplies from Idaho producers, we will work to identify opportunities for CS designation for such products. These partners have prioritized sustainability and have systems to document production practices of their contracted producers, setting the stage for developing CS designation. McCain Foods specializes in products with regenerative agriculture designation, which encompasses CS practices. Potato USA, the Idaho Potato Commission, and the Sustainable Potato Alliance are supporting partners.

Chickpea. Idaho is the third largest producer of chickpeas, the main ingredient for hummus. Zacca Hummus, a family business headquartered in Boise, Idaho, produces hummus products from Idaho-sourced chickpeas. They will collaborate with UI and other project partners to improve CS practices of their farm and manufacturing partners. They will contribute to project activities to find new and innovative marketing methods for CS brands to increase market share. The U.S. Dry Pea and Lentil Council has expertise in marketing and will advise on supply chains.

Sugar. Idaho is a major producer of sugar beet, which is the principal source of table sugar in the US. The Amalgamated Sugar Company is an American sugar beet-refining company headquartered in Boise Idaho. They will provide in-field consulting via our agronomists and research department.

Wheat. Idaho is the third largest producer of wheat in the nation. The crop enters supply chains as a key ingredient in a wide variety of baked goods, which poses challenges for CS food product marketing and tracking. The WF and SS will work with us as consultants to delineate and develop supply chains focused on wheat and wheat flour (Table 1, Activities SE2, SE5, SE7). These partners have successfully connected agricultural products grown with verified environmental and social practices in the western United States with regional and national food service companies such as Sodexo. We will also explore wheat flour specialty and niche supply chains. Hillside Grains, a small woman-owned and operated, vertically integrated, farm/mill will promote and contract CS wheat from farms enrolled in this project.

B. Plan to Track CS Commodities through Supply Chains:

Assessment Phase: For each commodity, we will work with partners to understand the variety of products that are produced. Each product will be examined for its potential to be labeled CS. This analysis will include: 1) study of the entities involved (e.g., intermediated buyers, retailers, and consumers) that comprise the supply chains from processing to end uses, and their perception of potential CS products; 2) the potential volume of sales for the identified products

through consumer surveys; 3) potential tradeoffs of transitioning to certification and marketing regimes with different degrees of verification and effort; 4) how markets for identified CS products adjust to changes in consumer preferences for CS products; 5) resulting GHG emission reduction across the supply chain; and 6) system-wide effects of CS commodity production on demand for natural resources such as irrigation water and fertilizer. This process will result in the identification of products that have the greatest potential in terms of sales and reduction of GHGs.

To execute, we will engage in discussions with our processing partners. Consulting partners, WF and SS will work with us to use targeted interviews and surveys of food service buyers and distributors to identify desired product characteristics, opportunities and constraints, interests, priorities, projected volumes, and market value for wheat (Table 1, Activity SE2), which is our commodity with the most diverse supply chains and products. Qualitative and quantitative analyses will be used to develop estimates of the size of each node along the supply chains and an overall market value for primary, intermediary, and end products. Project findings from the wheat supply chain analysis will be presented to a focus group of project partners and supply chain participants (8-10 participants) to provide feedback and interpretation (Table 1, Activity SE7). Overall, these activities will add a qualitative and mixed-methods approach to the project that will explore a broad spectrum of possible markets beyond those currently associated with Idaho wheat commodity production or easily researched through quantitative methods. Data will be collected and analyzed using methods described in Saul et al. (2021, 2022). The experience with the wheat CS supply chain analysis will inform work on our other commodities.

Tracking of GHG benefits across the supply chain and system-wide benefits will be addressed using data from across the project and modeling. Agent-based models (Lu et al. 2021) will be used to model supply, demand, logistics, and market dynamics for producers, shippers, processors, wholesalers, and retailers and their interactions for each focal commodity (Table 2, Activity SE8). The approach allows quantification and dynamics of revenues, prices, lead times, traded quantities, and GHG emissions under BAU and with adoption of CS practices. This approach will also yield data that can be utilized to determine distribution of price premiums and likely transfers of GHG benefits along the system. System-wide effects on natural resources such as irrigation, water, and fertilizer demand will be evaluated with a system dynamics (SD) approach (Table 1, Activity SE9). SD is a computer simulation technique to identify problems in the optimization path and to find alternative solutions by extrapolating and interpolating complex datasets (Winz et al. 2009; Ryu et al. 2012). Outputs will include estimated quantities of irrigated water demand, irrigation source stream flow volumes, and nutrient leakage into aquatic systems pre- and post-CS practice adoption.

Development Phase. The project team will 1) develop a marketing plan for 2-3 CS labeled products from farm to consumer, 2) adjust product design and/or CS label information based on feedback from consumer surveys and focus groups of retailers and consumers, 3) identify supply chain constraints and strategies to address or bypass them, and 4) work with entities in supply chains to strengthen efforts to develop and track CS supply chains and associated GHG benefits from farm to consumer. Some partners have products close to CS-ready, including beer, beef, and hummus. We will conduct targeted interviews with marketing representatives at AnheuserBusch, McCain Food, Zacca Hummus, Hillside Grain, DMGB, and specific microbrewers identified through IBU to determine how they could identify and label the CS-related attributes of their products, and what steps would be needed for verification protocols.

For commodities and partners with less developed supply chain pathways and CS products, we will assist partners in identifying opportunities from field to farmer using project data. A project deliverable will be informed plans for CS product development from these commodities and specific processing partners. For wheat, a mixed-methods approach will integrate data collection with activities to help connect and build supply chains while evaluating their potential as markets for CS wheat (Table 1, Activities SE5 and SE7) focused on large-scale national and regional food service buyers in the U.S. West and the distributors that serve them. This also will provide buyer specifications for products that can help inform CS product development. We will also analyze the value of differing certification and marketing approaches from a buyer perspective and compare existing certification programs such as SS with established markets for integration of CS verification criteria. This effort will primarily focus on buyers of CS wheat flour, but many of those interviewed or surveyed will also be interested in other project commodities. We will coordinate to support data collection focused on food service buyers and distributors for other commodities.

Tracking Phase. For partners with food products that are nearly ready for CS designation and marketing and with well-defined supply chains (McCain Foods, Hillside Grain, Anheuser-Busch, DMGB, some microbrewers), agent-based modeling methods will be parameterized with inputs from these partners to provide them with estimates of whole-supply-chain GHG emissions benefits. This delineation should incentivize assigning value or ownership of CS benefits along these supply chains, motivating preservation of discrete supply chains to support a CS system.

C. Estimated economic benefits: *Farm level* – The annual enterprise budget assessments (Schnitkey, 2021) with enrolled producers for each commodity (Table 1, Activity SE10), will identify economic returns for CS practice adoption, accounting adjustments in revenues (e.g., due to yield changes), and costs (e.g., due to new equipment usage) and will entail gathering farm-level data from enrolled producers. *Processor level* – Willingness-to-pay analysis (Table 1, Activity SE3) will determine potential market incentives to processors for CS-labeled food products. The agent-based model (Table 1, Activity SE8) will assess overall system economic benefits associated with CS production, transport, processing, and marketing. Follow-up interviews (Table 1, Activity SE5) will facilitate formation of models that represent the markets for each commodity for an assessment of how markets may change under several macroeconomic scenarios (e.g., increases in income or size of consumer base). Quantifiable indicators regarding scalability include the number of CS products developed, number of marketing contracts that include CS practices, and the number and type of adjustments in marketing contracts regarding CS practices from before and after the project.

E. Post-project potential: The project is designed to implement lasting changes to CS practices on our target farms, to generate support and resources for wider adoption of these practices, and to strengthen supply chains from CS commodities to food products. The incentive payments to enrolled farmers will accelerate adoption, but CS practices have intrinsic economic benefits associated with reduced inputs and improved soil health, with implications for improved profitability and sustained productivity. As a result, CS production can be economically viable without external incentives (Stöckle et al. 2017), and the long-term benefits of these practices for producers and landowners are well understood (Ashworth et al. 2020, Choudhary et al. 2018). Furthermore, demand for CS products is projected to increase, which will help sustain CS production (e.g., McKinsey Report, 2021; Scherer and Verburg 2017). In addition, this project will provide knowledge and skills that will allow producers to further implement CS practices

and market the associated GHG reductions. Critically, the project will generate 10 assets for the state and region to support continued adoption of practices for production, processing, and marketing of CS commodities:

- 1) An online information dashboard and linked resources maintained indefinitely by the UI for producers and others in supply chains of our focal commodities.
- 2) New relationships along supply chains and strengthened existing ones, which will be essential for continued adoption of practices from production to marketing.
- 3) Quantitative assessments of the GHG-mitigating potential of major crops that form the basis for numerous supply chains for processed foods.
- 5) Refereed articles on aspects of CS farming including its effects on yield, profitability, soil health, pest, weed and disease management, and supply chain development.
- 6) Bilingual bulletins and resources for entities along the CS supply chain from producers to food processors.
- 7) Conservation addendum templates for buyers and producers to specify CS criteria for producers and processors with specified conservation criteria (Coppess and Schnitkey 2019).
- 8) Information to guide decision-making and next steps for CS supply chain development.
- 9) Adjustments and refinements to COMET to improve effectiveness of CS practices and accuracy of GHG and soil C storage estimates for this important production region.
- 10) Information, including data visualization of soil carbon sequestration, GHG emissions, crop yield mapping, pest monitoring, economic returns, local sensor monitoring, and model predictions demonstrating long-term economic and environmental benefits of CS practices.

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Table of primary milestones for the project, by project year and quarter

A footnote (page 6) provides brief explanations of each milestone category.

Year 1

Required Quantitative Targets by Quarter

	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Number of producers involved (cumulative)	8	18	59	111
Number of underserved producers involved (cumulative)	2	6	14	25
Number of acres involved (cumulative)	2000	4000	13050	46610
Number of head involved (if applicable) (cumulative)	2700	2700	2700	2700
Dollars provided to producers (by quarter; not cumulative)	\$242,850	\$242,850	\$302,850	\$2,313,450
Number of new marketing channels established (cumulative)	0	0	0	1
Number of marketing channels expanded (cumulative)	0	0	0	0
Number of measurement tools utilized (cumulative)	1	4	4	5
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered (estimate) (cumulative)	185	555	1762	6074

Other Required Benchmarks that may be quantitative or qualitative

Outreach, training and other technical assistance (not cumulative)	50	52	279	290
Other MMRV and supply chain traceability attributes (not cumulative)	5	5	5	5
Other measurements of work related to marketing of commodities (not cumulative)	16	16	16	16
Demonstrated engagement of major partners (cumulative)	2	2	4	4
Climate-Smart technologies employed (if applicable) (cumulative)	1	2	2	3

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Table of primary milestones for the project, by project year and quarter

Year 2

Required Quantitative Targets by Quarter

	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Number of producers involved (cumulative)	119	126	205	208
Number of underserved producers involved (cumulative)	29	44.5	50	51
Number of acres involved (cumulative)	50210	94010	100010	100875
Number of head involved (if applicable) (cumulative)	2880	2880	2880	2880
Dollars provided to producers (by quarter; not cumulative)	\$287,040	\$682,040	\$671,040	\$4,785,540
Number of new marketing channels established (cumulative)	1	3	5	8
Number of marketing channels expanded (cumulative)	0	3	5	7
Number of measurement tools utilized (cumulative)	6	6	6	6
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered (estimate) (cumulative)	10718	19414	28665	37996

Other Required Benchmarks that may be quantitative or qualitative

Outreach, training and other technical assistance (not cumulative)	289	302	289	165
Other MMRV and supply chain traceability attributes (not cumulative)	5	5	0	0
Other measurements of work related to marketing of commodities (not cumulative)	16	16	16	16
Demonstrated engagement of major partners (cumulative)	6	6	8	8
Climate-Smart technologies employed (if applicable) (cumulative)	3	3	3	3

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Table of primary milestones for the project, by project year and quarter

Year 3

Required Quantitative Targets by Quarter

	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Number of producers involved (cumulative)	211	215	220	224
Number of underserved producers involved (cumulative)	52	53	54	56
Number of acres involved (cumulative)	102425	103025	103625	104490
Number of head involved (if applicable) (cumulative)	3500	3500	3500	3500
Dollars provided to producers (by quarter; not cumulative)	\$351,250	\$1,251,250	\$411,250	\$4,922,650
Number of new marketing channels established (cumulative)	10	12	14	18
Number of marketing channels expanded (cumulative)	9	11	15	17
Number of measurement tools utilized (cumulative)	6	6	6	6
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered (estimate) (cumulative)	47470	57000	66585	76251

Other Required Benchmarks that may be quantitative or qualitative

Outreach, training and other technical assistance (not cumulative)	157	177	157	157
Other MMRV and supply chain traceability attributes (not cumulative)	0	0	0	0
Other measurements of work related to marketing of commodities (not cumulative)	16	15	16	10
Demonstrated engagement of major partners (cumulative)	8	8	10	10
Climate-Smart technologies employed (if applicable) (cumulative)	3	3	3	3

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Table of primary milestones for the project, by project year and quarter

Year 4

Required Quantitative Targets by Quarter

	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Number of producers involved (cumulative)	224	224	225	225
Number of underserved producers involved (cumulative)	56	56	56	56
Number of acres involved (cumulative)	104490	104490	104490	104490
Number of head involved (if applicable) (cumulative)	3500	3500	3500	3500
Dollars provided to producers (by quarter; not cumulative)	\$351,250	\$1,251,250	\$411,250	\$4,922,650
Number of new marketing channels established (cumulative)	20	20	20	22
Number of marketing channels expanded (cumulative)	19	19	19	21
Number of measurement tools utilized (cumulative)	6	6	6	6
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered (estimate) (cumulative)	85916	95581	105247	114912

Other Required Benchmarks that may be quantitative or qualitative

Outreach, training and other technical assistance (not cumulative)	157	169	156	165
Other MMRV and supply chain traceability attributes (not cumulative)	0	0	0	0
Other measurements of work related to marketing of commodities (not cumulative)	11	6	7	3
Demonstrated engagement of major partners (cumulative)	10	10	12	12
Climate-Smart technologies employed (if applicable) (cumulative)	3	3	3	3

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Table of primary milestones for the project, by project year and quarter

Year 5

Required Quantitative Targets by Quarter

	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>
Number of producers involved (cumulative)	225	225	225	225
Number of underserved producers involved (cumulative)	56	56	56	56
Number of acres involved (cumulative)	104490	104490	104490	104490
Number of head involved (if applicable) (cumulative)	3500	3500	3500	3500
Dollars provided to producers (by quarter; not cumulative)	\$351,250	\$1,251,250	\$411,250	\$4,922,650
Number of new marketing channels established (cumulative)	22	22	22	24
Number of marketing channels expanded (cumulative)	21	21	22	22
Number of measurement tools utilized (cumulative)	6	6	6	6
GHG Benefits (Metric Tons of CO2e Reduced or Sequestered (estimate) (cumulative)	124577	134242	143908	153573

Other Required Benchmarks that may be quantitative or qualitative

Outreach, training, and other technical assistance (not cumulative)	157	177	154	153
Other MMRV and supply chain traceability attributes (not cumulative)	0	0	0	0
Other measurements of work related to marketing of commodities (not cumulative)	4	0	1	0
Demonstrated engagement of major partners (cumulative)	14	14	16	16
Climate-Smart technologies employed (if applicable) (cumulative)	3	3	3	3

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Table of primary milestones for the project, by project year and quarter

Footnote

Explanation of milestone tallies:

Number of producers involved (cumulative)

The total number of producers targeted to have entered contracts by the quarterly reporting date. These differ within year because sign-up calendars will differ among the partners. A total of 225 producers are targeted for contracts within this project.

Number of underserved producers involved (cumulative)

These are estimated based on demographics of Idaho producers and efforts the project will make to promote the project with these groups.

Number of acres involved (cumulative)

These are estimates based on a standard contract with 1000 acres per farm. This will vary among farms but the project will reach this target by enrolling a sufficient number of producers to reach it (see budget justifications from individual partners).

Number of head involved (if applicable)

Only one partner, Desert Mountain Grassfed Beef, will contract with beef producers. All of these targets have been provided by that partner.

Dollars provided to producers (by quarter)

This figure is based on the project-wide average incentive of \$60/acre of crop or pasture. Incentives will differ among crops and practices to ensure effectiveness. The values are provided here on a quarterly basis. The total of all incentives will be \$30,336,860

Number of new marketing channels established (cumulative)

Channels will be opened for specific commodities served by the project. They will vary from channels involving processors to those in which producers establish direct marketing channels. For beef, Wholesale expansion into new independent regional grocery store chains in the West, using Climate Smart practices will be employed as a selling point to entry into the market. Specifics will be provided as part of quarterly reporting

Number of measurement tools utilized (cumulative)

Measurement Tools will include: 1) Permanent and roving chamber systems (starting Y1 Q2), 2) temperature and moisture sensors and monitoring (starting Y1 Q2), 3) Soil Sampling and analysis (starting Y1 Q1), 4) Site visits to verify practices (starting Y1 Q2), 5)

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Table of primary milestones for the project, by project year and quarter

Submitted Proder Records (starting Y1 Q4), and 6) Laboratory measurements of GHGs under varying environmental conditions (starting Y2 Q1).

GHG Benefits (Metric Tons of CO₂e Reduced or Sequestered (estimate) (cumulative)**

These are based on estimated CO₂e reductions averaged across all of the CS practices to be implemented. The average is weighted based on estimated adoption rates of these practices: 0.37 metric tonnes/acre/year.

Outreach, training and other technical assistance (not cumulative)

These include a wide range of activities reported here in aggregate. They include partner trainings and workshops, typically conducted annually by each partner but sometimes more frequently and individual on-farm initiation visits and technical support visits to participating farms and farmers. They also include University-sponsored farmer training events and field days at Climate Smart project locations (50 attendees each). They also include CS farm enterprise budgets developed and promulgated for use by contracted farmers and those considering adopting CS practices. There will be 1 for each of the 7 focus commodities per year, with updates every year of the project (7 budgets x 5 years = 35). These activities and outputs are aggregated here but could be broken out among these categories. Trainings other than individual farm visits will be publicized through the project's web-based outreach platform.

Other MMRV and supply chain traceability attributes (not cumulative)

Research and compare climate smart attributes of product verification programs. Vet certification attributes with potential buyers.

Other measurements of work related to marketing of commodities (not cumulative)

These will be provided by partner Arrowleaf Consulting: 15 per quarter on other measurements. Description: develop survey instrument; survey supply chain participants, interview supply chain participants, research certification programs, interview buyers, analyze data, identify product attributes needed.

Demonstrated engagement of major partners (cumulative)

Tallied here are planned meetings of the project's leadership team consisting of representatives from each funded partner and the university project leadership. Also included are annual meetings of the project including representatives of nonfunded partners, most of which are processors or commodity groups.

Climate-Smart technologies employed (if applicable) (cumulative)

Climate Smart Technologies include 1) GreenFeed System used at grazed sites (starting Y1 Q2), 2) Permanent and roving GHG Chambers (starting Y1 Q4), 3) Models (COMET, DSSAT, CropSyst) (starting Y1 Q1)

Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
328	Conservation Crop Rotation
340	Cover crop
528	Prescribed Grazing
345	Residue and Tillage Management, Reduced Till
329	Residue and Tillage Management, No Till
590	Nutrient Management
808	Soil Carbon Amendment
336	Biochar

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

N/A



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



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Overview of Reporting Requirements

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

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

Descriptions of each level:

Project level: Information about activities and impacts at a whole project/aggregate level (i.e., reflecting all activities under the grant agreement). Some project-level reporting is further subdivided by commodity type or a combination of commodity and CSAF practice(s) (commodity x practice).

Partner level: Information about activities related to a single organization (recipient, subrecipient, contractor, or other partner) within a project.

Producer level: Information about individual producers who have one or more farms enrolled in a project.

Field level: Information about individual fields enrolled in a project.

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

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



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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

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



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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

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



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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

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



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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

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

**Field Enrollment**

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

Table 5. Field Enrollment elements

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



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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

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

**Field Summary**

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

Table 7. Field Summary elements

Data element name	Description	Frequency
Farm ID	Unique Farm ID assigned by FSA	
Tract ID	Unique Tract ID assigned by FSA	
Field ID	Unique Field ID assigned by FSA	
State or territory of field	State name	
County of field	County name	
Commodity type	Type of commodity produced from field	Quarterly
Practice type	Type of practice(s) incentivized in field (up to seven)	Quarterly
Date practice complete	Date that practice implementation is certified complete	Quarterly
Contract end date	End date of contract	Quarterly
MMRV assistance provided	Indicator that MMRV assistance is provided to field	Quarterly
Marketing assistance provided	Indicator that marketing assistance provided for commodity from field	Quarterly
Incentive per acre or head	Indicator that a per acre/head incentives is provided for the CSAF practice(s) on this field	Quarterly
Field commodity value	Value of commodity produced from field	Quarterly
Field commodity volume	Volume of commodity produced from field	Quarterly
Cost of implementation	Total cost of practice implementation in field	Quarterly
Cost coverage	Percent of total cost of implementation of practice covered by project incentives	Quarterly
Field GHG monitoring	Methods used to monitor GHG benefits in field (up to 3)	Quarterly
Field GHG reporting	Methods used to report on GHG benefits for field (up to 3)	Quarterly
Field GHG verification	Methods used to verify GHG benefits for field (up to 3)	Quarterly
Field GHG calculations	Methods used to calculate GHG benefits for field	Quarterly
Field official GHG calculation	Method used to calculate official GHG benefits for field	Quarterly
Field official GHG ER	Official estimate of total GHG emission reductions for field	Quarterly
Field official carbon stock	Official estimate of total carbon sequestration for field	Quarterly
Field official CO ₂ ER	Official estimate of total CO ₂ emission reductions for field	Quarterly
Field official CH ₄ ER	Official estimate of total CH ₄ emission reductions for field	Quarterly
Field official N ₂ O ER	Official estimate of total N ₂ O 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

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



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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

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

**Additional Environmental Benefits**

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

Table 10. Additional Environmental Benefits elements

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



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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.



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**Commodity type****Data element name:** Commodity type**Reporting question:** What climate-smart commodity types are produced by this project?**Description:** Type of commodity incentivized by the project. These commodities include those for whom farmers are directly receiving incentives or other types of marketing support. See full list of commodity options in Appendix B. List one commodity per row.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Commodity sales****Data element name:** Commodity sales**Reporting question:** Did project activities result in sales this quarter of the commodity(ies) produced by this project?**Description:** Indicator of sales of commodity(ies) related to project activities. If sales are reported, complete the *Marketing Activities* worksheet (Table 3) as part of the quarterly performance report.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Farms enrolled****Data element name:** Farms enrolled**Reporting question:** Did the project enroll any producers or fields this quarter?**Description:** Indicator that the project enrolled producers or fields. If enrollment activities occurred this quarter, complete the *Producer Enrollment* and *Field Enrollment* worksheets (Tables 4 and 5) as part of the quarterly performance report.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**GHG calculation methods****Data element name:** GHG calculation methods**Reporting question:** What methods is the project using to calculate GHG benefits?**Description:** List the way(s) that GHG benefits are being measured and calculated by the project this quarter.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Models
- Direct field measurements
- Both

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

**GHG cumulative calculation****Data element name:** GHG cumulative calculation**Description:** List the method(s) that was used to calculate the total cumulative GHG benefits reported by the project this quarter.**Data type:** List**Measurement unit:** Category**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What method(s) was used to calculate the total cumulative GHG benefits reported here?**Select multiple values:** No**Allowed values:**

- Models
- Direct field measurements
- Both

Required: Yes**Data collection frequency:** Quarterly**Cumulative GHG benefits****Data element name:** Cumulative GHG benefits**Description:** Total cumulative estimated greenhouse gas emission reductions from practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.**Data type:** Decimal**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What are the project's estimated total GHG emission reductions (CO₂eq) to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Cumulative carbon stock****Data element name:** Cumulative carbon stock**Description:** Estimated total cumulative change in carbon stock based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Project**Reporting question:** How much carbon has the project sequestered to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Cumulative CO₂ benefit****Data element name:** Cumulative CO₂ benefit**Description:** Estimated total cumulative carbon dioxide emission reductions based on practice implementation. This is updated quarterly. If there are no changes, enter the same number as the previous quarter.**Data type:** Decimal**Measurement unit:** Metric tons CO₂**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What are the project's estimated total cumulative CO₂ emission reductions to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Cumulative CH₄ benefit****Data element name:** Cumulative CH₄ benefit**Description:** Estimated total cumulative methane reduction based on practice implementation. This is updated quarterly. If there are no changes, enter the same numbers as the previous quarter. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Measurement unit:** Metric tons CH₄ reduced in CO₂eq**Logic:** None – all respond**Data collection level:** Project**Reporting question:** What are the project's estimated total CH₄ emission reductions to date?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly

**Cumulative N2O benefit****Data element name:** Cumulative N2O benefit**Reporting question:** What are the project's estimated total N2O emission reductions to date?

Description: Estimated total cumulative nitrous oxide reduction based on practice implementation. This is updated quarterly. If there are no updated numbers enter the same number as the previous quarter. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.

Data type: Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Offsets produced****Data element name:** Offsets produced**Reporting question:** How many carbon offsets have been produced in the project?

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

Data type: Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Offsets sale****Data element name:** Offsets sale**Reporting question:** To what marketplace(s) were carbon offsets sold?

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

Data type: Text**Select multiple values:** NA**Measurement unit:** Name**Allowed values:** Text**Logic:** Respond if >0 to 'Offsets produced'**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Offsets price****Data element name:** Offsets price**Reporting question:** What was the average price of carbon received for offsets?

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

Data type: Decimal**Select multiple values:** No**Measurement unit:** Dollars per metric ton**Allowed values:** 0-500**Logic:** Respond if >0 to 'Offsets produced'**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Insets produced****Data element name:** Insets produced**Reporting question:** How many carbon insets have been produced in the project?

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

Data type: Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly



Cost of on-farm TA

Data element name: Cost of on-farm TA**Reporting question:** What is the total amount that has been spent to provide on-farm TA?

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

Data type: Decimal**Select multiple values:** No**Measurement unit:** Dollars**Allowed values:** \$0-\$50,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly

MMRV cost

Data element name: MMRV cost**Reporting question:** What is the total amount that has been spent on MMRV activities?

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

Data type: Decimal**Select multiple values:** No**Measurement unit:** Dollars**Allowed values:** \$0-\$50,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly

GHG monitoring method

Data element name: GHG monitoring 1-5**Reporting question:** How did the project monitor GHG benefits?

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

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

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

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



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GHG reporting method

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

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

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

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

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

GHG verification method

Data element name: GHG verification method 1-5**Reporting question:** How did the project verify implementation of practices to reduce GHG emissions?

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

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

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

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

Partner Activities**Unique IDs**

Partner ID	Unique Project ID for each partner
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Partner name

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

Partner type

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

Partner POC

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

Partner POC email

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



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Partnership start date

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

Partnership end date

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

New partnership

Data element name: New partnership**Reporting question:** Is this a new partnership?**Description:** A new partnership means that the recipient and the partner organization have not had a formal working relationship (under contract or on a grant) prior to the start of the project.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: No response for recipient**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Partnership initiation

Partner total requested

Data element name: Partner total requested**Reporting question:** What is the total amount of funding the partner has requested to date from this project?**Description:** Cumulative (total) amount of funds that the partner has requested reimbursement for from the recipient from the start of the partnership to the end of the reporting quarter. For each quarter's data entry, the value must be the sum of all previous entries plus the amount of funds requested in the reporting quarter. If there are no changes, report the value from the previous quarter.**Data type:** Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** No response for recipient**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly



Total match contribution**Data element name:** Total match contribution**Reporting question:** What is the total match value the organization has contributed to the project to date?

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

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly

Total match incentives**Data element name:** Total match incentives**Reporting question:** What is the total value of match provided by this organization for producer incentives?

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

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly

Match type**Data element name:** Match type 1-3**Reporting question:** What types of match contributions has the organization provided to the project?

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

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

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

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



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Match amount

Data element name: Match amount 1-3**Reporting question:** What is the value of the match contributions the organization provided to the project?

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

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly

Training type provided

Data element name: Training type 1-3 provided**Reporting question:** What types of training has the organization provided to project partners?

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

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

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

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

Activity by partner

Data element name: Activity 1-3 by partner**Reporting question:** What types of activities has the organization provided to the project?

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

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

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

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



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

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

Data type: Decimal**Select multiple values:** NA**Measurement unit:** Dollars**Allowed values:** \$0-\$100,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly

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

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

Data type: Text**Select multiple values:** NA**Measurement unit:** Name**Allowed values:** Text**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Quarterly

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

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

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



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Marketing Activities**Commodity type****Data element name:** Commodity type**Reporting question:** What type of commodity is produced by the farmers enrolled in this project?**Description:** List a single commodity produced or marketed through incentives from this project. If multiple commodities are produced by the project, use additional rows of the worksheet to report each commodity. Use the FSA commodity list in Appendix B and choose the commodity from the list.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Marketing channel type****Data element name:** Marketing channel type**Reporting question:** What type of marketing channel is used to sell this commodity?**Description:** List a single type of marketing channel used to sell the commodity produced by farmers enrolled in the project. If a single commodity is marketed through multiple channels, use additional rows of the worksheet to report each combination of commodity and marketing channel. If “other” is chosen, use the additional column to enter the other marketing channel type(s) as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

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

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

- Local
- Regional
- National
- Global

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



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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

**Price premium to producer****Data element name:** Price premium to producer**Reporting question:** What percent of the price premium is provided to the producer for the commodity sold in this marketing channel?**Description:** The percent of the price premium provided to the producer for the commodity sold in this marketing channel this quarter. Price premium is the amount received above a 'business as usual' price.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Percent**Allowed values:** 0-100**Logic:** None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Product differentiation method****Data element name:** Product differentiation method 1-3**Reporting question:** What methods are used to differentiate climate-smart commodities in this marketing channel?**Description:** Provide the methods used to differentiate the climate-smart commodity in this market channel. Product differentiation methods are ways to distinguish or differentiate the climate-smart commodity in the marketplace. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 product differentiation methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other product differentiation methods as free text.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

Logic: None – all respond**Required:** Yes**Data collection level:** Project**Data collection frequency:** Quarterly**Marketing method****Data element name:** Marketing method 1-3**Reporting question:** What methods are used to market climate-smart commodities in this marketing channel?**Description:** Provide the method(s) used to market this commodity in this market channel. Marketing method is the way that potential buyers of the climate-smart commodity are engaged by the project partners as the sellers or facilitators of sale. Include up to 3 methods, based on which methods are most commonly used for this project. The worksheet provides three columns with a drop-down list of the allowed values. Choose one value for each column. If fewer than 3 marketing methods are used, leave unnecessary columns blank. If "other" is chosen, use the additional column to enter other marketing methods as free text**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

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



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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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Producer Enrollment**Unique IDs**

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

Producer data change

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

Producer start date

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

Producer name

Data element name: Producer name	Reporting question: What is the name of producer enrolled in the project?
Description: Name of the producer enrolled in the project; the name must match the name contained in the customer's Business Partner record and the Farm Operating Plan in FSA Business File for that Farm ID.	
Data type: Text	Select multiple values: NA
Measurement unit: NA	Allowed values: Text
Logic: None – all respond	Required: Yes
Data collection level: Producer	Data collection frequency: Initial enrollment



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Underserved status

Data element name: Underserved status**Reporting question:** Is this producer considered an underserved and/or a small producer?

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

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

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

Logic: None – all respond**Required:** No**Data collection level:** Producer**Data collection frequency:** Initial enrollment

Total area

Data element name: Total area**Reporting question:** What is the total area of the farm?

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

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

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

Logic: None – all respond**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment and subsequent enrollment(s), if applicable



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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



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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

**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



February 2023

Producer outreach

Data element name: Producer outreach 1-3**Reporting question:** What types of outreach were provided to producers?

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

Data type: List**Select multiple values:** Yes**Measurement unit:** Category**Allowed values:**

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

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

CSAF experience

Data element name: CSAF experience**Reporting question:** Has the primary operator implemented CSAF practices in the last ten years anywhere on the farm?

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

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

- Yes
- No
- I don't know

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



February 2023

CSAF federal funds

Data element name: CSAF federal funds**Reporting question:** Were prior CSAF practices supported by federal funds?

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

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

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment

CSAF state or local funds

Data element name: CSAF state or local funds**Reporting question:** Were prior CSAF practices supported by state or local funds?

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

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

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment

CSAF nonprofit funds

Data element name: CSAF nonprofit funds**Reporting question:** Were CSAF practices supported by nonprofit funds?

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

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

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment



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CSAF market incentives

Data element name: CSAF market incentives**Reporting question:** Were CSAF practices supported by market incentives?**Description:** If this farm (under the primary operator) has implemented CSAF practices in the last ten years, was implementation supported by market incentives? Market incentives include premiums paid by a commodity buyer or by a consumer based on branding or labeling as a climate-smart commodity.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: Respond if yes to 'CSAF experience'**Required:** Yes**Data collection level:** Producer**Data collection frequency:** Initial enrollment



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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



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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



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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



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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



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Practice past extent - farm

Data element name: Practice past extent - farm**Reporting question:** What percent of the farm has implemented this CSAF practice (combination) previously?**Description:** Prior to enrollment, on what portion of the whole farm had this (these) CSAF practice(s) ever been used by the primary operator? If multiple practices are planned to be implemented in this field, enter the value that best corresponds to the farm's prior experience with the planned set of practices.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

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

Field any CSAF practice

Data element name: Field any CSAF practice**Reporting question:** What is this field's prior experience with CSAF practices?**Description:** Prior to enrollment, have any CSAF practice or practices been used in this field in the past 3 years? CSAF practices are included in a list in Appendix A.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

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

Practice past use - this field

Data element name: Practice past use - this field**Reporting question:** Have this CSAF practice (combination) been implemented previously in this field?**Description:** Prior to enrollment, had this (these) CSAF practice(s) been used in this field in the in the past 3 years? Enter yes if all of the practices had been used previously in this field; enter some if multiple practices are being implemented and one or more, but not all of the practices had been used previously in this field; and enter no if none of the practices had been used previously in this field.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

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



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

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

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

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

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

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

- NRCS
- Other (specify)

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

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

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

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

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

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

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



Practice extent unit

Data element name: Practice 1-7
extent unit**Reporting question:** Unit for extent of practice implementation**Description:** Unit for extent of practice implementation on the field specified by the contract. If “other” is chosen, use the additional column to enter the appropriate unit.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

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

CSAF Practice Sub-questions

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



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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



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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



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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



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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



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Field Summary**Unique IDs**

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

Commodity type

Data element name: Commodity type **Reporting question:** What type of commodity is produced from this field?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: FSA commodity list

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Practice type

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

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values: See list in Appendix A

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Date practice complete

Data element name: Date practice complete **Reporting question:** When did the project certify CSAF practice implementation as complete?

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

Data type: Date

Select multiple values: No

Measurement unit: MM/DD/YYYY

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

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

**Contract end date****Data element name:** Contract end date**Reporting question:** Contract end date**Description:** End date listed on the contract that enrolls the field in the project. If contract end date changes, submit updated end date during the next quarter's reporting.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**MMRV assistance provided****Data element name:** MMRV assistance provided**Reporting question:** Was MMRV assistance provided?**Description:** Was any MMRV assistance provided to the primary operator for this field? MMRV assistance includes in-field support for the use of technologies, consultation on data collection and input, and other support related to MMRV. MMRV is defined a measurement (calculations or estimations of GHG emissions), monitoring (ongoing review and confirmation that the climate-smart practice has been implemented according to the agreed upon standard and documentation of any changes in the site, implementation, or GHG emissions impacts over time), reporting (documenting and sharing monitoring and measurement results with project partners, the recipient, and any third-party verification organization), and verification (independent confirmation that measurement, monitoring and reporting information are complete, accurate and reliable).**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Marketing assistance provided****Data element name:** Marketing assistance provided**Reporting question:** Was marketing assistance provided?**Description:** Was any marketing assistance provided to the primary operator for the commodity(ies) produced from this field? Marketing assistance includes guaranteeing the sale of the commodity(ies), providing a platform for the sale of the commodity(ies), providing a label, branding, or other support related to marketing.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Incentive per acre or head****Data element name:** Incentive per acre or head**Reporting question:** Is this field receiving a per-acre or per-head incentive?**Description:** Is this field receiving an incentive payment to implement a specific CSAF practice or set of practices on a per-acre or per-head (livestock) basis?**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

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



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Field commodity value

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

Field commodity volume

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

Field commodity volume unit

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

Cost of implementation

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

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

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

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

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

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



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



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Field GHG calculations

Data element name: Field GHG calculations**Reporting question:** What methods are used to calculate GHG benefits in this field?**Description:** List the method(s) used to calculate GHG benefits in this field. If yes to direct physical measurements, submit result reports (see *Supplemental Data Submission – Field direct GHG measurement results*).**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Models
- Direct field measurements
- Both

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

Field official GHG calculation

Data element name: Field official GHG calculation**Reporting question:** What method was used to calculate the official GHG benefits in this field?**Description:** List the method used to calculate the official GHG benefits in this field that are reported as part of the project's aggregate impact.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Models
- Direct field measurements

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

Field official GHG ER

Data element name: Field official GHG emission reductions**Reporting question:** What are the estimated total GHG emission reductions (CO₂eq) in this field?**Description:** Estimated greenhouse gas emission reductions from practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly

Field official carbon stock

Data element name: Field official carbon stock**Reporting question:** How much carbon has been sequestered in this field?**Description:** Estimated total change in carbon stock based on practice implementation in this field. This data element can be reported in any quarter and is cumulative for the year. Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



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Field official CO2 ER**Data element name:** Field official CO2 emission reductions**Reporting question:** What are the estimated total CO2 emission reductions in this field?**Description:** Estimated total carbon dioxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly

Field official CH4 ER**Data element name:** Field official CH4 emission reductions**Reporting question:** What are the estimated total CH4 emission reductions in this field?**Description:** Estimated total methane emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly

Field official N2O ER**Data element name:** Field official N2O emission reductions**Reporting question:** What are the estimated total N2O emission reductions in this field?**Description:** Estimated total nitrous oxide emission reductions based on practice implementation in this field that are reported as part of the project's aggregate impact. This data element must be entered upon practice completion or annually, as appropriate. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly

Field offsets produced**Data element name:** Field offsets produced**Reporting question:** How many carbon offsets have been produced in this field?**Description:** Total carbon offsets produced in the field during the quarter (not cumulative). Offsets are defined as having been verified and certified using an accepted standard and sold into the carbon marketplace.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly



Field insets produced

Data element name: Field insets produced **Reporting question:** How many carbon insets have been produced in this field?

Description: Total carbon insets produced in the field during the quarter (not cumulative). Insets are defined as having been verified and certified using an accepted standard and accounted for within Scope 3 emissions for a firm.

Data type: Decimal

Select multiple values: No

Measurement unit: Metric tons CO₂eq

Allowed values: 0-10,000,000

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly

Other field measurement

Data element name: Other field measurement **Reporting question:** Were data collected from the field for reasons other than GHG benefit estimation?

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

Data type: List

Select multiple values: No

Measurement unit: Category

Allowed values:

- Yes
- No
- I don't know

Logic: None – all respond

Required: Yes

Data collection level: Field

Data collection frequency: Quarterly



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GHG Benefits - Alternate Modeled**Unique IDs**

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

Commodity type**Data element name:** Commodity type 1-6**Reporting question:** What type of commodity(ies) is produced from this field?**Description:** Type of commodity(ies) produced in field enrolled in the project. See full list of commodity options in Appendix B. The worksheet provides multiple columns with drop-down lists of the allowed values. Choose one value for each column. Leave unnecessary columns blank**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** FSA commodity list**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Practice type****Data element name:** Practice type 1-7**Reporting question:** What CSAF practice is being implemented by this project?**Description:** Which CSAF practice or practices are being implemented in this project? CSAF practices are included in a list in Appendix A. The worksheet provides seven columns for this data element. Enter one value for each column. If there are fewer than 7 practices being implemented by the project, leave unnecessary columns blank.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:** See list in Appendix A**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual

**GHG model****Data element name:** GHG model **Reporting question:** What model was used for alternate calculation of GHG benefits?**Description:** Select the model used for the alternate calculation of the field's GHG benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

Logic: None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual

**Model start date****Data element name:** Model start date**Reporting question:** For what time period are the GHG benefits modeled (model start date)?**Description:** Date that the model parameters begin.**Data type:** Date**Select multiple values:** NA**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/1950 – 12/31/2030**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Model end date****Data element name:** Model end date**Reporting question:** For what time period are the GHG benefits modeled (model end date)?**Description:** Date that the model parameters end.**Data type:** Date**Select multiple values:** NA**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023– 12/31/2030**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total GHG benefits estimated****Data element name:** Total GHG benefits estimated**Reporting question:** What is the alternate estimate of the field's total GHG emission reductions?**Description:** Total greenhouse gas emission reductions from practice implementation in the field estimated using an alternate model.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total carbon stock estimated****Data element name:** Total carbon stock estimated**Reporting question:** What is the alternate estimate of how much carbon has the field has sequestered?**Description:** Total change in carbon stock based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual**Total CO₂ estimated****Data element name:** Total CO₂ estimated**Reporting question:** What is the alternate estimate of the field's total CO₂ emission reductions?**Description:** Total carbon dioxide emission reductions based on practice implementation in the field estimated using an alternate model.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**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 CH4 estimated

Data element name: Total CH4 estimated**Reporting question:** What is the alternate estimate of the field's total CH4 emission reductions?**Description:** Total methane emission reductions based on practice implementation in the field estimated using an alternate model. Conversion rate is one ton of CH₄ = 25 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CH4 reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual

Total field N2O estimated

Data element name: Total N2O estimated**Reporting question:** What is the alternate estimate of the field's total N2O emission reductions?**Description:** Total nitrous oxide emission reductions based on practice implementation in the field estimated using an alternate method. Conversion rate is one ton of N₂O = 298 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons N2O reduced in CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If project calculates GHG benefits using multiple methods**Data collection level:** Field**Data collection frequency:** Annual



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GHG Benefits - Measured**Unique IDs**

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

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

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

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

**Measurement start date****Data element name:** Measurement start date**Reporting question:** On what date did the measurement start?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements first began.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Measurement end date****Data element name:** Measurement end date**Reporting question:** On what date did the measurement end?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements were completed.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023– 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Total CO2 reduction calculated****Data element name:** Total CO2 reduction calculated**Reporting question:** What are the total measured CO2 emission reductions?**Description:** Total annual CO2 emission reductions based on practice implementation in the field calculated from in-field measurements.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Total field carbon stock measured****Data element name:** Total field carbon stock measured**Reporting question:** What is the total amount of carbon sequestered based on repeat measurements in this field?**Description:** Change in carbon stock based on practice implementation in the field calculated from repeat soil sampling in this field. (Results for initial field soil samples should be reported in the 'Soil sample result' and 'Measurement type' columns.) Conversion rate is one ton of carbon = 3.67 tons of CO₂eq.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons CO₂eq**Allowed values:** 0-10,000,000**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock measurements in this field**Data collection level:** Field**Data collection frequency:** Annual



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Total CH4 reduction calculated

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

Total N2O reduction calculated

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

Soil sample result

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



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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**Data element name:** Environmental benefits**Reporting question:** Are environmental benefits other than GHGs being tracked in the field?**Description:** Tracking of environmental benefits other than greenhouse gas emission reductions and carbon sequestration in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual**Reduction in nitrogen loss****Data element name:** Reduction in nitrogen loss**Reporting question:** Are reductions in nitrogen losses being tracked in the field?**Description:** Tracking reductions in nitrogen losses in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

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

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

- Kilograms
- Metric tons
- Pounds
- Other (specify)

Required: Yes**Data collection frequency:** Annual**Reduction in nitrogen loss purpose****Data element name:** Reduction in nitrogen loss purpose**Description:** Purpose of tracking reduction in nitrogen losses in the enrolled field. If "other" is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to 'Reduction in nitrogen loss'**Data collection level:** Project**Reporting question:** What is the purpose of tracking reduction in nitrogen losses?**Select multiple values:** No**Allowed values:**

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

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

- Yes
- No
- I don't know

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



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Reduction in phosphorus loss amount unit

Data element name: Reduction in phosphorus loss amount unit**Reporting question:** What is the unit for the reduction in phosphorus losses measured in the field?**Description:** Unit for the total amount of reduction in phosphorus losses that is measured in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Kilograms
- Metric tons
- Pounds
- Other (specify)

Logic: Respond if yes to ‘Reduction in phosphorus loss’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual

Reduction in phosphorus loss purpose

Data element name: Reduction in phosphorus loss purpose**Reporting question:** What is the purpose of tracking reductions in phosphorus losses?**Description:** Purpose of tracking reduction in phosphorus losses in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

Logic: Respond if yes to ‘Reduction in phosphorus loss’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual

Other water quality

Data element name: Other water quality**Reporting question:** Are other water quality metrics being tracked in the field?**Description:** Project tracking of other water quality metrics in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don’t know

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



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Other water quality type

Data element name: Other water quality type**Reporting question:** What type of other water quality metric have been measured in the field?**Description:** Type of other water quality metric (besides nitrogen loss and phosphorus loss reductions) that is measured in the field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Sediment load reduction
- Temperature
- Other (specify)

Logic: Respond if yes to ‘Other water quality’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual

Other water quality amount

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

Other water quality amount unit

Data element name: Other water quality amount unit**Reporting question:** What is the unit for the reduction in other water quality metrics measured in the field?**Description:** Unit for the total amount of reduction in other water quality metrics that is measured in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Degrees F
- Kilograms
- Kilograms per liter
- Metric tons
- Pounds
- Other (specify)

Logic: Respond if yes to ‘Other water quality’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual



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Other water quality purpose

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

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

Logic: Respond if yes to ‘Other water quality’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual

Water quantity

Data element name: Water quantity**Reporting question:** Is water conservation being tracked in the field?**Description:** Tracking of water conservation or reduction in use in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don’t know

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

Water quantity amount

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

Water quantity amount unit

Data element name: Water quantity amount unit**Reporting question:** What is the unit for the amount of water conservation measured in the field?**Description:** Unit for the total amount of water conservation or reduced use that is measured and reported in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

Logic: Respond if yes to ‘Water quantity’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual



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Water quantity purpose

Data element name: Water quantity purpose**Reporting question:** What is the purpose of tracking water conservation?**Description:** Purpose of tracking water conservation or reductions in water use in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

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

Logic: Respond if yes to 'Water quantity'**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual

Reduced erosion

Data element name: Reduced erosion**Reporting question:** Is reduced soil erosion being tracked in the field?**Description:** Tracking of reduced soil erosion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

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

Reduced erosion amount

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

Reduced erosion amount unit

Data element name: Reduced erosion unit**Reporting question:** What is the unit for the amount of erosion reduction measured?**Description:** Unit for the total amount of erosion reduction from enrolled fields that is measured and reported by the project. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Tons
- Other (specify)

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



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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**Measurement unit:** Category**Select multiple values:** No**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**Measurement unit:** Amount**Select multiple values:** No**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**Measurement unit:** Category**Select multiple values:** No**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

Data element name: Reduced energy use purpose**Description:** Purpose of tracking reduced energy use in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to ‘Reduced energy use’**Data collection level:** Field**Reporting question:** What is the purpose of tracking reduced energy use in the field?**Select multiple values:** No**Allowed values:**

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

Required: Yes**Data collection frequency:** Annual

Avoided land conversion

Data element name: Avoided land conversion**Description:** Tracking of avoided land conversion in the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits. Land conservation means land use changing from agricultural uses to non-agricultural uses.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to ‘Environmental benefits’**Data collection level:** Field**Reporting question:** Is avoided land conversion being tracked in the field?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don’t know

Required: Yes**Data collection frequency:** Annual

Avoided land conversion amount

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

Avoided land conversion amount unit

Data element name: Avoided land conversion unit**Description:** Unit for the total amount of avoided land conversion that is measured in the enrolled field. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Logic:** Respond if yes to ‘Avoided land conversion’**Data collection level:** Field**Reporting question:** What is the unit for the amount of avoided land conversion measured in the field?**Select multiple values:** No**Allowed values:**

- Acres
- Other (specify)

Required: Yes**Data collection frequency:** Annual



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Avoided land conversion purpose

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

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

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

Improved wildlife habitat

Data element name: Improved wildlife habitat**Description:** Tracking of improvements to wildlife in and around the enrolled field. Tracking means at a minimum using some form of monitoring and reporting that can quantify benefits.**Data type:** List**Measurement unit:** Category**Reporting question:** Are improvements to wildlife habitat being tracked in the field?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

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

Improved wildlife habitat amount

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

Improved wildlife habitat amount unit

Data element name: Improved wildlife habitat unit**Description:** Unit for the total amount of improved wildlife habitat that is measured in and around enrolled fields. If “other” is chosen, enter the appropriate value as free text in the additional column.**Data type:** List**Measurement unit:** Category**Reporting question:** What is the unit for the amount of improved wildlife habitat measured in the field?**Select multiple values:** No**Allowed values:**

- Acres
- Linear feet
- Other (specify)

Required: Yes**Logic:** Respond if yes to ‘Improved wildlife habitat’**Data collection level:** Field**Data collection frequency:** Annual



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Improved wildlife habitat purpose

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

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

Logic: Respond if yes to ‘Improved wildlife habitat’**Required:** Yes**Data collection level:** Field**Data collection frequency:** Annual



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



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



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



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



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



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



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



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



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Appendix A: Climate-smart Agriculture and Forestry Practices**All NRCS Practice Standards (not limited to climate-smart practices)**

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



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



Other CSAF Practices

Traditional or cultural practices

Microbial products

Solar power generation

Grain bin construction

Pre-season drainage



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Appendix B: Commodity ListCROPS

ALFALFA
ALMONDS
AMARANTH GRAIN
APPLES
APRICOTS
ARONIA (CHOKEBERRY)
ARTICHOKES
ASPARAGUS
ATEMOYA
AVOCADOS
BAMBOO SHOOTS
BANANAS
BARLEY
BEANS
BEETS
BIRDSFOOT/TREFOIL
BLUEBERRIES
BREADFRUIT
BROCCOFLOWER
BROCCOLI
BROCCOLINI
BRUSSEL SPROUTS
BUCKWHEAT
CABBAGE
CACAO
CACTUS
CAIMITO
CALABAZA MELON
CALALOO
CAMELINA
CANARY MELON
CANARY SEED
CANEERRIES
CANISTEL
CANOLA
CANTALOUPE
CARAMBOLA (STAR FRUIT)
CARROTS
CASHEW
CASSAVA
CAULIFLOWER
CELERIAC
CELERY
CHERIMOYA
CHERRIES
CHESTNUTS
CHICORY/RADICCHIO
CHINESE BITTER MELON
CHRISTMAS TREES
CHUFAS

CINNAMON
CLOVER
COCONUTS
COFFEE
CORN
COTTON ELS
COTTON UPLAND
CRANBERRIES
CRENSHAW MELON
CRUSTACEAN
CUCUMBERS
CURRANTS
DASHEEN
DATES
DURIAN
EGGPLANT
EINKORN
ELDERBERRIES
EMMER
FIGS
FINFISH
FLAX
FLOWERS
FORAGE SOYBEAN/SORGHUM
GAILON
GARLIC
GENIP
GINGER
GINSENG
GOOSEBERRIES
GOURDS
GRAPEFRUIT
GRAPES
GRASS
GREENS
GROUND CHERRY
GUAMABANA/SOURSOP
GUAR
GUAVA
GUAVABERRY
GUAYULE
HAZEL NUTS
HEMP
HERBS
HESPERALOE
HONEY
HONEYBERRIES
HONEYDEW
HOPS
HORSERADISH
HUCKLEBERRIES

HYBRID POPLAR TREES
IDLE
INDIGO
ISRAEL MELONS
JACK FRUIT
JERUSALEM ARTICHOKES
JICAMA
JOJOBA
JUJUBE
JUNEERRIES
KENAF
KHORASAN
KIWIBERRY
KIWIFRUIT
KOCHIA (PROSTRATA)
KOHLRABI
KOREAN GOLDEN MELON
KUMQUATS
LAMBS EAR
LEEKS
LEMONS
LENTILS
LESPEDEZA
LETTUCE
LIMES
LONGAN
LOQUATS
LYCHEE
MANGOS
MANGOSTEEN
MAPLE SAP
MAYHAW BERRIES
MEADOWFOAM
MILKWEED
MILLET
MIXED FORAGE
MOHAIR
MOLLUSK
MORINGA
MULBERRIES
MUSHROOMS
MUSTARD
NECTARINES
NIGER SEED
NONI
OATS
OKRA
OLIVES
ONIONS
ORANGES
PAPAYA



PARSNIP	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/Dragonfruit	TOBACCO BURLEY 31V	GOATS
PLANTAIN	TOBACCO CIGAR BINDER	HONEYBEES
PLUMCOTS	TOBACCO CIGAR FILLER	LLAMAS
PLUMS	TOBACCO CIGAR FILLER BINDER	REINDEER
POMEGRANATES	TOBACCO DARK AIR CURED	SHEEP
POTATOES	TOBACCO FIRE CURED	SWINE
POTATOES SWEET	TOBACCO FLUE CURED	TURKEYS
PRUNES	TOBACCO MARYLAND	
PSYLLIUM	TOBACCO VIRGINIA FIRE CURED	
PUMMELO	TOMATILLOS	
PUMPKINS	TOMATOES	
QUINCES	TREES TIMBER	
QUINOA	TRITICALE	
RADISHES	TRUFFLES	
RAISINS	TURNIPS	
RAMBUTAN	VETCH	
RAPESEED	WALNUTS	
RHUBARB	WAMPEE	
RICE	WASABI	
RICE SWEET	WATERMELON	
RICE WILD	WAX JAMBOO FRUIT	
RUTABAGA	WHEAT	
RYE	WILLOW SHRUB	
SAFFLOWER	WINTER MELON	
SAPODILLA	WOLFBERRY/GOJI	
SAPOTE	YAM	
SCALLIONS		
SESAME		
SHALLOTS		
SORGHUM		
SORGHUM DUAL PURPOSE		
SORGHUM FORAGE		
SOYBEANS		
SPELT		
SQUASH		
STAR GOOSEBERRY		

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

I. Overarching Statement

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

II. Eligibility and Highly Erodible Lands and Wetlands Compliance

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

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

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

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

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

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

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

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

III. Other Environmental and Cultural Resources Reviews

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

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

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

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

IV. Producer Benefits

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

V. Producer Data Protection and Disclosure

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

VI. Other Data and Reporting Requirements

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

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

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

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

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

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

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

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

measurement/quantification, monitoring, reporting, tracking, and verification of associated greenhouse gas benefits and marketing of climate-smart commodities).

- Synthesis of outcomes; and
- Opportunities for USDA and others to inform future approaches to generating new and expanded markets for climate-smart commodities.

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

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

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

VII. Competition and Anti-Competitive Practices

In connection with this grant, recipients may not prohibit or otherwise limit a producer from changing the provider of other services or materials not included as part of this grant.

Recipients may not condition, limit, steer, or discriminate in their provision or sale of non-project business functions or products to producers based on their participation or non-participation in or use of any services provided as part of this grant. Additionally, funds in this agreement shall not be used for purposes or activities related to mergers or acquisitions.

VIII. Suspension and Disbarment

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

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

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

- 1) A financial related audit of a particular award in accordance with Generally Accepted Government Auditing Standards issued by the Comptroller General of the United States, in those cases where the for-profit entity receives awards under only one USDA program; or, if awards are received under multiple USDA programs, a financial related audit of all awards in accordance with Generally Accepted Government Auditing Standards issued by the Comptroller General of the United States; or
- 2) An audit that meets the requirements contained in 2 CFR 200 subpart F.

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

X. Non-Disparagement

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

Item No	Payment T	Expense C	Description	Obligation	Obligation	Obligation	NICRA	Rat	WBS Elem	Open Bala
10	Payment	Personnel		#####	#####	#####		38	NR.SI.PCSC	#####
20	Payment	Fringe Benefits		#####	#####	#####		38	NR.SI.PCSC	#####
30	Payment	Travel		#####	#####	#####		38	NR.SI.PCSC	#####
40	Payment	Equipment		#####	#####	0		0	NR.SI.PCSC	#####
50	Payment	Supplies		#####	#####	#####		38	NR.SI.PCSC	#####
60	Payment	Other	SA - IDAHC	34,500.00	25,000.00	9,500.00		38	NR.SI.PCSC	34,500.00
70	Payment	Other	SA - IDAHC	#####	#####	0		0	NR.SI.PCSC	#####
80	Payment	Other	SA - THE N	34,500.00	25,000.00	9,500.00		38	NR.SI.PCSC	34,500.00
90	Payment	Other	SA - THE N	#####	#####	0		0	NR.SI.PCSC	#####
100	Payment	Other	SA - COEUI	34,500.00	25,000.00	9,500.00		38	NR.SI.PCSC	34,500.00
110	Payment	Other	SA - COEUI	#####	#####	0		0	NR.SI.PCSC	#####
120	Payment	Other	SA - NEZ PI	34,500.00	25,000.00	9,500.00		38	NR.SI.PCSC	34,500.00
130	Payment	Other	SA - NEZ PI	#####	#####	0		0	NR.SI.PCSC	#####
140	Payment	Other	SA - DESER	34,500.00	25,000.00	9,500.00		38	NR.SI.PCSC	34,500.00
150	Payment	Other	SA - DESER	#####	#####	0		0	NR.SI.PCSC	#####
160	Payment	Other	SA - SAULC	34,500.00	25,000.00	9,500.00		38	NR.SI.PCSC	34,500.00
170	Payment	Other	SA - SAULC	#####	#####	0		0	NR.SI.PCSC	#####
180	Payment	Other		#####	#####	#####		38	NR.SI.PCSC	#####
190	Payment	Other		#####	#####	0		0	NR.SI.PCSC	#####

[illegible]