



U.S. Department of Agriculture
Natural Resources Conservation Service

NRCS-ADS-093

NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number NR233A750004G026	2. Amendment Number	3. Award /Project Period Date of Final Signature - 04/20/2028	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) OREGON STATE UNIVERSITY 312 KERR ADMINISTRATION BLDG CORVALLIS OR 97331-8517 UEI Number / DUNS Number: MZ4DYXE1SL98 / 053599908 EIN:	
7. NRCS Program Contact Name: ECHO DOMINGUES (b)(6)	8. NRCS Administrative Contact Name: SUNDII JOHNSON	9. Recipient Program Contact Name: JEFFREY STEINER	10. Recipient Administrative Contact Name: Jennifer Creighton
(b)(6)			
11. CFDA 10.937	12. Authority 15 USC 714 et seq	13. Type of Action New Agreement	14. Program Director Name: JEFFREY STEINER (b)(6)
15. Project Title/ Description: Expands markets for climate-smart potatoes in ID, OR, WA, Tribal areas and 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	50,000,000.000	\$700,041.00	
Additional funds total	\$0.00	\$0.00	
Grand total	50,000,000.000	\$700,041.00	
18. Approved Budget			

Personnel	\$4,047,829.38	Fringe Benefits	\$2,076,178.50
Travel	\$194,919.64	Equipment	\$0.00
Supplies	\$76,634.98	Contractual	\$105,435.00
Construction	\$0.00	Other	43,499,002.500
Total Direct Cost	47,812,516.100	Total Indirect Cost	\$2,187,483.90
		Total Non-Federal Funds	\$700,041.00
		Total Federal Funds Awarded	50,000,000.000
		Total Approved Budget	50,700,041.000

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 KATINA HANSON Digitally signed by KATINA HANSON Date: 2023.04.27 11:42:57 -05'00'	Date
Name and Title of Authorized Recipient Representative Jennifer Creighton, Associate Vice President for Research Administration	For Jennifer Creighton: Signature  Zach Gill, Director Sponsored Programs, Award Contracting	Date 4/27/2023 08:56:09 PDT

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 Oregon State University (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 \$50,700,041.00

TOTAL FEDERAL FUNDS \$50,000,000

PERSONNEL \$2,725,811.00

FRINGE BENEFITS \$1,398,100.00

TRAVEL \$131,259.00

EQUIPMENT \$0

SUPPLIES \$ \$51,606.00

CONTRACTUAL \$ \$71,000.00

CONSTRUCTION (usually n/a) n/a

OTHER \$6,242,625.00

PRODUCER INCENTIVES \$37,192,115.00

TOTAL DIRECT COSTS \$47,812,516.00

INDIRECT COSTS \$2,187,484.00

TOTAL NON-FEDERAL FUNDS \$700,041.00

PERSONNEL \$335,630.00

FRINGE BENEFITS \$135,778.00

TRAVEL \$

EQUIPMENT \$

SUPPLIES \$

CONTRACTUAL \$

CONSTRUCTION (usually n/a) \$

OTHER \$

PRODUCER INCENTIVES \$

TOTAL DIRECT COSTS \$471,408.00

INDIRECT COSTS \$228,633.00

Recipient has an approved Negotiated Indirect Cost Rate Agreement (NICRA) with a rate of 48.5 percent and a base of Modified total direct costs, consisting of all salaries and wages, fringe benefits, materials and supplies, services, travel, and subgrants and subcontracts up to the first \$25,000 of each subgrant or subcontract (regardless of the period covered by the subgrant or subcontract). Equipment, capital expenditures, charges for patient care and tuition remission, rental costs, scholarships, and fellowships as well as the portion of each subgrant and subcontract in excess of \$25,000 shall be excluded from modified total direct costs.

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

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Climate-Smart Potatoes from the Pacific Northwest
Managing Soil Health for Climate-Smart Outcomes
Revised Project Narrative

EXECUTIVE SUMMARY

A. Contact Information

Jeffrey Steiner, Director
Global Hemp Innovation Center
Oregon State University
Corvallis, OR
541-602-7404
jeffrey.steiner@oregonstate.edu

B. List of Project Partners

Oregon State University:

Carlos Bonilla
Kenneth Frost
Brian Charlton
Clark Seavert
David Bernell
Roberto Valdivia
Anne Sinkey
Everald McLennon

University of Idaho:

Rhett Spear

Washington State University:

Timothy Waters
David Gang

Seven Generations LLC:

Douglas Boon

Soil Health Institute:

Wayne Honeycutt

LoCo+:

Megan Matousek

Industrial Hemp Association of Washington:

Bonny Jo Peterson

Commercial Partners

- Lamb Weston
- Frito-Lay
- Threemile Canyon Farms
- Mart Produce
- Simplot

Small-farm Partners

- Marc Staunton
- Scotty Fenters
- Shawn Gay, GMP Orchards LLC
- Paul Merritt, Selkirk Ag LLC
- John Steiner, Triangle Ranch
- Lazarus Naturals

C. List of Underserved/Minority Partners

American Indian Partners:

- Yakama Nation: Confederated Tribes and Bands
- Nez Perce Tribe
- Confederated Tribes of the Colville
- Shoshone-Bannock Tribes (initial inquiries)
- Shoshone-Paiute Tribes of the Duck Valley Indian Reservation (initial inquiries)
- Confederated Tribes of Warm Springs (initial inquiries)

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D. Compelling Need for the Project.

Potato is an important staple source of nutrients and energy for human and animal consumption. However, the soil disturbing practices required for growing potato present challenges to producers for increasing soil carbon (C) sequestration and improving soil health. Despite this challenge, significant opportunities exist in multi-year potato rotational production systems for C sequestering, reducing greenhouse gas (GHG) emissions, and improving soil health with greater associated grower profitability. We believe significant progress can be made in the potato industry by advancing Climate-Smart outcomes through this pilot project. Most potato growers do not participate in USDA conservation programs, so there is a great opportunity to demonstrate how the adoption of Climate-Smart practices and systems by industry can become a part of the solution in reducing emissions of GHG and for sequestering C in soils. Similarly, emphases by Native American tribes to holistically manage their natural and cultural resources and significant changes in land tenure policiesⁱ have created new opportunities to manage their reservation agricultural lands and adopt land management approaches that would benefit from Climate-Smart practices contributing to tribal goals addressing climate change.^{ii iii iv}

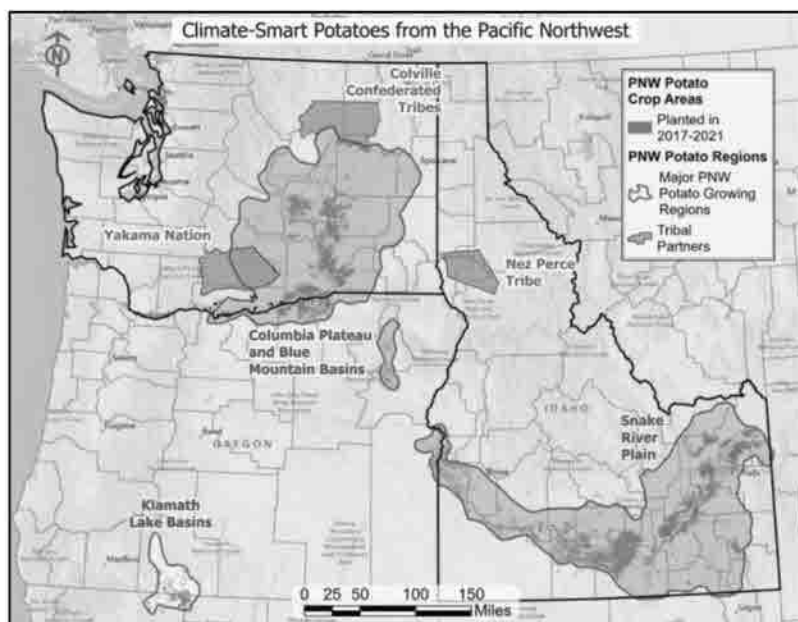


Figure 1. Three primary potato production regions in the Pacific Northwest: 1. Snake River Plain, 2. Columbia Plateau and Blue Mountain Basins, and 3. Klamath Lake Basin. Shown are approximate locations of fields grown during the time period. Shown also are the Nez Perce Tribe, Yakama, and Colville American Indian nations' reservations.

This project will advance the adoption of Climate-Smart management systems in the Pacific Northwest states of Idaho, Washington, and Oregon where more than 62% of U.S. potatoes are grown and 15% of the domestic supply of seed potatoes is produced. The economic value of potato production in the region is \$2.2-billion annually.^v Nearly one-half-million acres of potatoes are grown in the three-state region. This region also encompasses significant land holdings that are home to Native American nations who deeply respect their historic natural and cultural resources and desire to utilize their lands for the production of agricultural products to support business development, provide jobs to members, and contribute to self-sufficiency and food sovereignty. This project divides our efforts equally between assistance for American Indian tribes and the commercial potato sector. Regarding the difference between the original funding request in the application and the generous award amount, the operations costs for the project are still mostly fixed. We have reduced the number of acres to be enrolled and the number of farm units involved, and have accommodated the request to not target just direct farmer assistance. In summary, 75% of the budget is for direct assistance payments to commercial/tribal farmer enrollees; 12.4% for technical assistance to commercial farmer/tribal farmer enrollees, and only 12.6% for operational costs of the project, with half of those operation costs for providing technical assistance to farmers, both for tribes and non-tribe operators.

This project will advance the adoption of Climate-Smart management systems in the Pacific Northwest states of Idaho, Washington, and Oregon where more than 62% of U.S. potatoes are grown and 15% of the domestic supply of seed potatoes is produced. The economic value of potato production in the region is \$2.2-billion annually.^v Nearly one-half-million acres of potatoes are grown in the three-state region. This region also encompasses significant land holdings that are home to Native American nations who deeply respect their historic natural and cultural resources and desire to utilize their lands for the production of agricultural products to support business development, provide jobs to members, and contribute to self-sufficiency and food sovereignty. This project divides our efforts equally between assistance for American Indian tribes and the commercial potato sector. Regarding the difference between the original funding request in the application and the generous award amount, the operations costs for the project are still mostly fixed. We have reduced the number of acres to be enrolled and the number of farm units involved, and have accommodated the request to not target just direct farmer assistance. In summary, 75% of the budget is for direct assistance payments to commercial/tribal farmer enrollees; 12.4% for technical assistance to commercial farmer/tribal farmer enrollees, and only 12.6% for operational costs of the project, with half of those operation costs for providing technical assistance to farmers, both for tribes and non-tribe operators.

E. Approach to minimize transaction costs. We will consult NRCS policies and follow procedures developed to promote efficiency in the handling and payment of financial assistance funds to producers. To reduce the number of contract and conservation plan revisions, we will provide

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producer partners with adequate technical support and training regarding project procedures and processes. We use the *AgBiz Logic* (ABL) tool as the portal for entering producer production plans, locations of field, and attestation regarding the implementation of practices. Project field staff will work with partners in conducting *a priori* analyses to generate estimated fixed costs per individual farm operation costs^{vi} to determine net present values of current and future machine operations and required expenditures to compared differences in costs between their standard practices and for implementing Climate-Smart practices. Opportunity costs for implementing Climate-Smart practices are factored into the direct-support payment structure to provide incentive to participate and remain in the pilot program. A reimbursement-only approach is used to reduce the risk of needing to recover payments due to changes in management plans or implementation of practices. As a part of record keeping, a tracking and accounting systems based on Web3.0 blockchain technology will reduce the potential for double-counting and reduce transaction costs.

F. Approach to reducing producer barriers to Climate-Smart practices and markets. We use a multi-pronged approach to reduce producer barriers: (i) Industry endorsement and establishment of technical assistance networks, (ii) focus on economic, drought resilience, and other benefits of building soil health through Climate-Smart practices, (iii) farmer-to-farmer extension model for promoting Climate-Smart practices and systems, (iv) introduction of innovative technology and services for calculating benefits of adoption including financial returns, and (v) provision of sufficient financial incentives to reduce adoption risks.

We have engaged all three state potato grower associations and the Potatoes USA national grower association (see letters of support) which will encourage their producers to engage in this project. In addition, major potato processing and handling corporations (see partner list) will recruit growers from their supply chains to participate in the project. We will set up farmer-to-farmer networks where growers who are new to these practices can learn practical information from other growers who have already successfully adopted many of those practices.^{vii viii} In addition, we will leverage our engagement with the well-established USDA NIFA WERA27 multistate Potato Variety Development project involving Idaho, Oregon, and Washington state potato commissions, faculty and personnel from the three state agricultural experiment stations, and Soil Health Institute to implement the project.

We will focus on demonstrating and communicating the benefits of improving soil health that results in Climate-Smart outcomes, and that have additional benefits beyond C-sequestration and GHG reductions including increased soil organic matter content, greater soil particle aggregation, reduced inputs, greater profitability, and increased available water holding capacity that builds drought resilience and increases irrigation efficiency. Demonstrating these improvements to soil health to growers will drive the adoption of many of the same management practices and systems that will simultaneously reduce GHG emissions and increase soil C-sequestration.

We will also offer technical assistance to potato producers and Native American Tribe landowners in the use of the ABL suite of economic and financial tools to estimate net present values, internal rates of return, and changes to financial liquidity and solvency for employing Climate-Smart practices so producers can know their true costs compared to their established practices. A block chain Web3.0 approach is employed to record Climate-Smart management plans, document implementation, and link growers to potential carbon markets.

As in our earlier consultations with producers, companies, and tribes, we will continue to expand what practices, enhancements, and bundles of practices and enhancements are presently employed that lead to Climate-Smart outcomes and discuss with them what additional approaches could be employed that would work in their farming conditions. If new practices, enhancements, or bundles of practices and enhancements are identified that are not listed in the Climate-Smart list, we develop new Conservation Standard Practices to meet the needs of growers in our region.

H. Project management capacity of partners. Our Organizational Chart (Fig. 2) and Budget show the project management structure by objectives. Oregon State University (OSU) and the project

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director have extensive experience in leading and administering large multi-state and multi-institutional grants involving commercial partners and American Indian tribes in the conduct of Extension, Education, and Research projects. The proposal was developed with full participation of all key personnel and with the engagement of industry organizations, potato and other agricultural

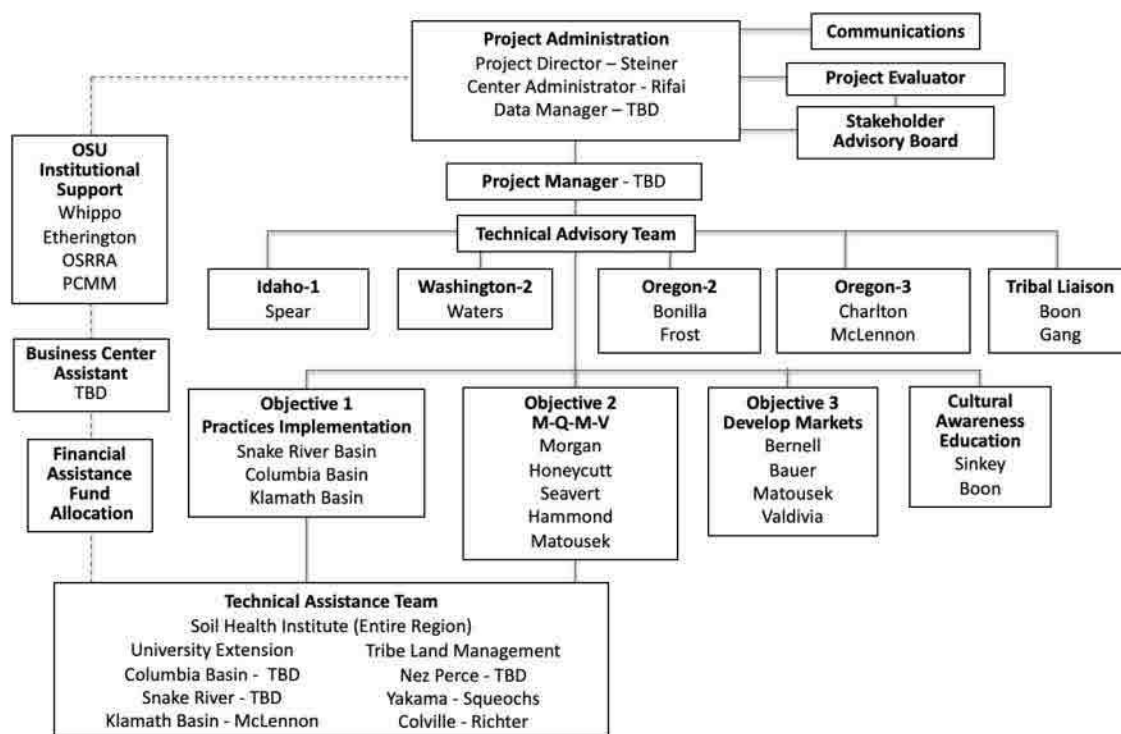


Figure 2. Organizational chart for Climate-Smart Potatoes from the Pacific Northwest showing project key personnel, programmatic objectives, geographic region responsibilities, and technical advisory and assistance and administrative support.

commodity companies, and American Indian Tribes. The OSU, University of Idaho (UI), and Washington State University (WSU) Technical Advisory Team members have a long-history of working together with the three-state potato industry through the USDA WERA27 multistate Potato Variety Development project. All three universities have established research-extension-engagement networks that directly serve the potato and other commodity industries and work closely with the Potato Grower Associations in the three states. Also shown is the Tribal Liaison who provides a formal interface for engagement with Native American Indian partners. These existing networks will be leveraged and augmented by university and Soil Health Institute (SHI) technical staffs funded by this project for direct engagement with producers and processors/handlers and will provide technical support to regional Technical Assistance Team (TAT) members and Tribal Land Managers (TLM) working with farmers in the field, in collecting samples, conducting analyses, and performing educational programs. All field and research facilities, instrumentation, equipment, and technical personnel supporting the key personnel can perform the required procedures outlined within the scope of this proposal.

A Stakeholder Advisory Board will be recruited to provide critical and constructive advice and feedback to project leadership in assessing project progress, direction, outcomes, and impact of the project. A Project Evaluator will work with the project leadership to independently review the effectiveness of the Soil Health, Cultural Awareness Training, and Grower Education Programs and facilitate annual Advisory Council meetings. The supporting Oregon Agricultural Experiment Station and Business Center operations in the OSU College of Agricultural Sciences are excellent and capable of managing all fiduciary responsibilities. The allocation of resources for EER activities will

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be dispersed by the OSU Office of Sponsored Research and Award Administration (OSRAA) to key personnel and fund allocation for the Financial Assistance Plan (FAP) to producers will be managed by OSU Procurement, Contracts, and Materials Management (PCMM). Institutional oversight of budgets is provided by OSU.

PLAN TO PILOT CLIMATE-SMART PRACTICES ON A LARGE SCALE

A. Description of Climate-Smart practices to be deployed. We are using a multi-year, multiple-crop rotation production system that includes one year of potatoes with three years of rotation crops grown in sequence with each year of potatoes. Typical crops used in regional four-year potato production rotation systems include: Potato-Wheat-Sweet Corn/Field Corn-Potato (most common); Potato-Wheat-Onion-Potato; Potato-Wheat-Onion-Sweet Corn/Field Corn-Potato; or Potato-Alfalfa-Alfalfa-Alfalfa-Potato. Additional crop rotation components adapted to the region with Climate-Smart attributes include sudangrass, barley, canola, and industrial hemp.

Because potato production involves soil-disturbing practices, the non-potato rotation crop years offer opportunities for increasing C-sequestration and reducing GHG emissions. However, those improvements to soil health will also allow growers to reduce N fertilizer inputs that will also convey reduced nitrous oxide emissions and other environmental co-benefits in the potato year. The Climate-Smart and other environmental co-benefiting practices from the *Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List FY2023* of practices^{ix} will be used with payments adapted from the PNW states USDA NRCS CSP Payment Schedules.^x Examples of the kinds of practices and management strategies that will be implemented include:

- Implementing management systems that store soil C in the rotation phase. Many well-established rotation crops used in potato production systems can be grown using no-tillage establishment (e.g., barley, oats) or are multiple-year perennials and so established once per rotation cycle (e.g., alfalfa). The benefits of reduced operation costs of no-till in the rotation crop years (e.g., reduced fuel use and labor) will contribute net profit benefits to the overall potato production system.
- Growing cover crops and cover crop mixes can increase soil organic C, enhance nutrient availability, build water holding capacity, suppress pathogens, reduce nutrient and leaching, and contribute other co-environmental benefits. This is a Climate-Smart practice that can be implemented in both the rotation crops and potato crop years.
- Selecting rotation crops with biological, economic, and value-added attributes when followed by the subsequent potato crop. For example, *Brassicas* such as canola can reduce the incidence of *Rhizoctonia solani*; legume herbage crops increase soil nitrogen (N) availability and reduce supplemental fertilizer costs, and deep-rooted industrial hemp can scavenge and cycle nutrients and provide a harvestable grain or fiber products.
- Selecting rotation crops for after potato harvest that allow time to establish an additional soil health-benefiting cover crop before the next crop in the rotation sequence is planted.
- Using cover crops that generate additional revenue (e.g., harvested forages such as sudangrass).

B. Plan to recruit producers and landowners. We implemented a three-prong strategy to engage and enroll producers and tribes in our project. A diversity producers/landowners are characterized as: (i) Large potato processing/handling companies that provide access to their producer networks, regardless of size and background of farm operations; (ii) Native American tribal nations that have large areas of designated working lands operated by tribe members and tenants; and (iii) Small-farm producers and Independent grower networks (Table 1). Our outreach to growers involved: (i) regional and national potato processor and fresh market handling companies who contract with growers; (ii) our Tribal Liaison and partner networks to American Indian governments; and (iii) existing networks of contacts to recruit independent and small-scale farmers to participate in the

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Table 1. Demographic breakdown of commodity Grower/Market Class sectors and American Indian tribes, number of farmers, and acres committed for enrollment at the time of project award. Processing companies listed serve as sales points for growers' products produced under contracts. Tribal governments serve as contacts to tribe member and tenant farmers on their reservations. The financial assistance to growers on American Indian reservations is for exploring integrated Climate-Smart opportunities on their reservation land resources including farmlands and possibly rangelands and forestlands.

Commercial/Market Class Farmers	Estimated number of farmers	Committed Acres	Financial Assistance
Growers under contract with Lamb Weston	30	27,000	2,025,000
Threemile Canyon Farms	1	7,500	562,500
Growers under contract with Frito-Lay/Chip Stock	10	8,000	600,000
Growers under contract with Frito-Lay/Seed	6	3,000	225,000
Growers under contract with Mart Produce	5	2,000	150,000
Marc Staunton	1	1,000	75,000
Scotty Fenters	1	1,000	75,000
GMP Orchards LLC	1	100	7,500
Selkirk Ag LLC	1	100	7,500
Triangle Ranch	1	250	18,750
Lazarus Naturals	2	50	3,750
Total Commercial Farmers	59	50,000 @ \$75/ac/year	3,750,000
American Indian Tribes			
Nez Perce Tribe ¹	100	25,000 @ \$72.536/ac/year	1,813,415
Yakama Nation	15	15,000 @75/ac/year	1,125,000
Colville Tribes	12	10,000 @ \$75/ac/year	750,000
Total American Indian Tribe Farmers	127	50,000	3,688,425
Annual Totals		100,000	7,438,425
Five-year Total			\$37,192,115 ²

¹ Because of the anticipated great number of participating growers on the Nez Perce reservation, the tribe requested a 0.5 FTE Tribe Land Management (TLM) position. The project will pay \$307,855 through a sub-award agreement over five years for the benefit of the tribe (approval given by USDA E. Domingues). The TLM will work with the university regional Technical Assistance Team (TAT) members in providing assistance to growers as well as coordinating activities with University of Idaho project, the *Nez Perce Soil and Water Conservation District*, and other tribe conservation activities. The position will also build capacity within the Nez Perce tribe to carry on Climate-Smart management beyond the project five-year tenure.

² We have made budget adjustments to achieve the awarded grant amount that is less than the amount in the original application. Across the board budget adjustments were made with some of the reduced operation cost funds moved to direct assistance to farmer and tribe support. The total resulting direct assistance payments to producers are now \$37,192,115. The total for university technical assistance and operation costs are now \$12.8-million with approximately half for each purpose. With our most recent budget adjustments, the indirect costs are now slightly lower than the original budget. Note that operation costs for the project are largely fixed, regardless of the number of enrolled acres and number of farm units participating. Also, technical support to the growers/tribes is a part of the university operations costs, but is not considered as part of the direct assistance payments of the project to farmers.

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project. We have secured written commitments from producers for all three groups and will continue to enroll more partners should we receive the award. We have secured agreements from three American Indian tribes for their participation and will continue to engage other tribes in the region as needed to fulfill our target acreages and incentive payment amounts designated for tribes. (See Part E below for more details regarding the recruitment process details for Native American tribes and small-scale farmers.) Our engagement and technical approaches are completely scalable for incorporating any number of additional farmers/tribes, enrolled acres, kinds of Climate-Smart practices, and commodity production systems utilized. We utilize a regional assessment developed by *Soil Health Institute* (SHI) based on the health-building capacities of soils so that practices and systems that lead to Climate-Smart outcomes can be identified across multi-state regional scales.

C. Technical Assistance, Outreach, and Training Plan.

EXTENSION SPECIALISTS/TRIBAL FARM MANAGER TRAINING PROGRAM.

SOIL HEALTH TRAINING. The SHI will deliver at the initiation of the project a four-step education program that will equip partnering Technical Assistance Team (TAT) members (regional three-state technical assistance teams) and Tribal Land Managers (TLM) with additional educational tools to assist farmers in transitioning to Climate-Smart practices that improve soil health. These steps are: (1) a listening session designed to inform SHI's educators about the particular challenges, climates, management systems, and other local information needed by SHI for tailoring its training program for optimal benefit; (2) will involve five, one-hour virtual training sessions to provide a foundational understanding of soil health, its scientific basis, best ways to measure it, and how to apply Soil Health Planning Principles in different situations; (3) will give a unified methodology for disseminating on-farm field experience with applying principles of soil health, on-farm soil health assessments, and identifying management alternatives for improving soil health. While on those farms, SHI will sample soils and send them for laboratory analysis using the most effective measurements for soil health; and (4) Focus Sessions will be held once those lab results are received. This session brings all of the information together through interpretation of soil health laboratory and field results from growers' soils and decision support tools, *Soil Health Planning Principles*, and other resources to identify alternative management practices for improving drought resilience, nutrient availability, profitability and other benefits of healthy soils.

CULTURAL AWARENESS TRAINING. The OSU *Center for Advancing Diversity, Equity, and Inclusion in Business* will work closely with tribal leaders, educators, and subject matter experts to provide at the beginning of the project training to all grant-affiliated personnel in culturally responsive communications, research and business transactions with tribal and non-tribal communities, with a focus on how non-Native project personnel can conduct themselves in an informed, respectful, collaborative and equity-focused manner when engaging with tribal partners. The grant team recognizes that historical inequities have and will likely continue to influence the effective adoption of Climate-Smart practices and systems and the creation of markets in American Indian nations, and that cross-cultural differences in power, knowledge, customs, and access to resources have and will likely continue to influence communication, commerce, and relationships. In an effort to fully acknowledge and begin to remedy disparities, all investigators and related grant personnel will complete an introductory training to provide cultural competency and related skills in respectful, collaborative, and mutually-beneficial interactions with our Native American partners. Through customized training, project investigators and staff will gain skills and knowledge that meet learning objectives that have been developed in consultation with Native American experts with content knowledge in Native American Studies with an emphasis on cultural history, tribal sovereignty, indigenous ways of knowing, and indigenous relationships to the land. The training will include case studies and scenarios related to cross-cultural interaction with tribal partners. Training effectiveness will be measured through post-training evaluation surveys. The appropriateness of training content and efficacy in meeting learning objectives will be annually reviewed. The outcomes will be an informed project team that is culturally aware of the knowledge and skills needed to effectively communicate with partner tribal representatives and to achieve the outcomes

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described in this proposal, as well as be effective advocates for the needs and opportunities of specific Native American tribes.

GROWER EDUCATION PROGRAM. Farmers need to understand the benefits of managing their soils, fields, and crops in Climate-Smart ways, and how to do it. The Grower Education Program is built on the premise that farmers are more likely to adopt regenerative soil health building systems that have Climate-Smart outcomes if growers:

- See evidence that other nearby farmers are successfully adopting those systems,
- Learn that improving soil health increases profitability by increasing their soil's available water holding capacity and drought resilience, and reduces irrigation frequency (i.e., cost),
- Are provided effective measurements for assessing soil health and setting a measurable goal that can be attained for their specific soils, and
- Participate in education programs that provide practical information from other farmers on how they have successfully adopted those management systems.

While many education programs are single events, our approach involves from the beginning at the beginning of the project continuous engagement through peer-to-peer networks where practical experience at improving soil health is provided by Grower Mentors and topics presented and led by a Technical Specialists (e.g., SHI Trainer and/or University TAT or TLM members). Criteria for selecting Grower Mentors in this project will include: Full-time farmer or Tribal farm or natural resources manager; successful at adopting a Climate-Smart practices or management system; willingness to share experiences with other producers; relationship skills; Standing/reputation in the farming or tribal community; enthusiasm for the project, and willingness to devote time for the project's success.

The Grower Education Program will consist of two, in-person workshops per year, with continuous engagement of growers between those workshops by local Extension Technical Specialist and the Grower Mentors. The **FIRST WORKSHOP** will be a Field Day at a Grower Mentor's farm where producers can hear from the Grower Mentor about his/her reasons for adopting a Climate-Smart system, experiences in doing so, challenges faced and how they were overcome, what they now know and wish they knew when they started, and additional practical topics. Field day events would include a field walk to see the practices being implemented and viewing a freshly dug soil pit. During the field days, farmers generally also benefit from seeing the equipment used and discussing seeding rates, cover crop planting and termination dates, and many other practical topics. The **SECOND WORKSHOP** will be co-led by Grower Mentor and TAT or TLM members and held in the winter of each year. Topics may include: What is soil health; Benefits of soil health management systems ; Economics of soil health experienced by farmers; Soil health planning principles; Practices and management systems for improving soil health on your farm; and Tools and resources for planning your soil health management system. Both workshops will be interactive events, where participating farmers ask questions and discuss what is on their minds pertaining to technical issues or practical experiences with adopting soil health systems. Confidential follow-up surveys will be delivered on-site after the workshops to evaluate the success of each workshop and to identify additional topics to be addressed or any improvements needed. A social sciences-trained project evaluator with proven research and evaluation experience will work with the project leadership to provide an independent review of the effectiveness of the Soil Health and Cultural Awareness Training and Grower Education Program in meeting objectives and timelines.

TECHNICAL ASSISTANCE PROGRAM. Our project design provides multiple levels of technical assistance to conventional grower and tribal farmer partners. Per the narrative and our Organizational Chart (Fig. 2), the primary delivery of direct technical assistance to farmers is through three extension personnel designated as Technical Assistance Team members (TATs) who are assigned to each of the three regions (Snake River Basin, Columbia Basin, and Klamath Basin). The region-assigned TATs will also partner with the Tribal Land Managers (TLMs) to provide assistance to assist farmers and tenants on the American Indian reservations. The region-assigned TATs and a grower

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association advisor will provide technical support to small-scale independent farms growing potatoes or other associated rotation crops. A Technical Advisory Team comprised of established faculty from the three universities will provide continuity in approaches to farmer/tribe engagement and coordination among regions. The Technical Advisory Team has established relationships with the three-state potato industry, tribal land managers, grower and commodity organizations, and growers throughout the region via their agricultural experiment stations and extension services. The SHI is lead on soil health training. The Technical Advisory Team provides coordination between the SHI and its activities and with TATs and TLMs. Also, the Project Manager will provide overall leadership coordinating the TATs, TLMs, Technical Advisory Team, Management Tool Development teams, and Financial Assistance and Contracting functions of the project.

We anticipate that through engagement with growers, adoption of Climate-Smart practices will increase, as will interest in developing Climate-Smart commodity markets. Through our training and engagement efforts, grassroots community-building will occur. As interest progresses, documentation of successes can be used to support the future development of Climate-Smart programs. By paying farmers to adopt practices and for compensation to mitigate risks, we can model and measure the adoption outcomes and provide the information that sets them up for getting a price premium from the production of their commodities and a potential payment in their choice of a carbon market program.

D. Financial Assistance Plan for Producers/Landowners to Implement Climate-Smart Practices.

The USDA Climate-Smart Commodities Program allows incentive payments to farmers and landowner willing to use Climate-Smart practices, enhancements, and bundles of practices and enhancements to improve soil health and thus reduce greenhouse gas (GHG) emissions and increase C-sequestration in fields. Participating producers will be provided sufficient incentive payments to participate in the five-year project. We propose using a reimbursement approach. Producers will file an annual Climate-Smart Management Plan that specifies the Climate-Smart Agriculture and Forestry Mitigation Activities List practices^{xi} that will be used on the rotation and potato crop fields. Using the NRCS procedure to verify installation, producer fields will require a visit by Technical Advisory Team staff and a date-stamped photo submitted as a record. Payment amounts will be based on the NRCS Conservation Stewardship Program^{xii} (CSP) Payment Schedules for the respective three PNW states. Climate-Smart practices under this grant will be limited to the practices summarized in Table 2, with complete details shown in Appendix A including: Conservation Practice Categories, Units, Enhancement Code, Bundle and Enhancement Activity, and Costs by state.

The Climate-Smart and other environmental co-benefiting practices are adapted from the nationally approved Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List FY2023 and Conservation Stewardship Program practices (CSP) (Appendix A). We will use payments listed in the PNW states USDA NRCS CSP Payment Schedules (specifically using Idaho, Washington, and Oregon payment schedules). Each of these practices has a national-approved practice standard that will be implemented by farmer/tribe enrollees and overseen by the technical advisory teams to ensure compliance with the standard (see also the following response). All lands to be used in all cases are agricultural and all of the practices listed have NRCS national approved standards. None of the practices involve ground disturbance below the plow zone, including fencing. Our only potential involvement with CAFOs is through those farmers who may purchase manure to apply to their fields to improve their field's soil health. Should Site Specific Assessments be needed, adequate funds are available in the project operational budget to cover these costs.

The second payment is based on ABL-calculated opportunity loss for implementing Climate-Smart practices compared to the cost of using conventional business-as-usual practices and will be paid in combination with the Climate-Smart practice payment. This schedule of practices and payments will also inform the modeling Climate-Smart practices adoption. The portion of project funds directly supporting grower financial assistance and project technical assistance, research, and administration are 75 and 25%, respectively. Allocations for annual project incentive payments have

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Table 2. Summary of Climate-Smart practices to be used in this grant. Complete details of practice standards are presented in Appendix A, attached file: OSU Appendix A CSAF Mitigation Activities_2023.xlsx

NRCS Practice Code	Conservation Practice Standard Name (units)
327	Conservation Bundles (acres)
327	Conservation Cover (acres)
311	Alley Cropping (acres)
328	Conservation Crop Rotation (acres)
329	Residue and Tillage Management, No Till (acres)
340	Cover Crop (acres)
345	Residue and Tillage Management, Reduced Till (acres)
386	Field Border (acres)
393	Filter Strips (acres)
412	Grassed Waterways (acres)
484	Mulching (acres)
585	Strip Cropping (acres)
590	Nutrient Management (acres)
512	Pasture and Hay Planting (acres)
528	Prescribed Grazing (acres)
550	Range Planting (acres)
342	Critical Area Planting (acres)
381	Silvopasture (acres)
390	Riparian Herbaceous Cover (acres)
391	Riparian Forest Buffer (acres)
395	Streamland Habitat Improvement (acres)
420	Wildlife Habitat Planting (acres)
612	Tree/Shrub Establishment (acres)
635	Vegetative Treatment Area (acres)
645	Upland Wildlife Habitat Management (acres)
666	Forest Stand Improvement (acres)

been calculated for potato and tribal farmers as shown in Table 1 and which total 7,438,425 per year and so \$37,192,115 for the five-year project total.

We are using multiple levels of engagement with growers to ensure practices implementation meet NRCS standards. Nationally approved practices with established NRCS standards are used. The project Technical Assistance Team members (TAT) and Tribal Land Managers (TLM) will be trained on the use of approved practice standards in concert with the initial project soil health education program. The TAT and TLM members will conduct the grower education programs from the beginning of the project as growers are enrolled and through on-going engagements including one-on-one, peer-to-peer grower network gatherings, and scheduled meetings throughout the duration of the project to ensure unified application of practice methodologies. We intend to produce video recordings of trainings for further reference by TAT, TLM, and farmer/tribe enrollees.

Each partner is assigned a TAT or TLM member who will provide counsel in the selection of practices and assessment of impacts and costs. Additional support is provided by our economist team (AgBiz Logic platform) and Soil Health Institute (utilizing COMET platform) working with TAT and TLM in estimating the costs and benefits of implementing practices. The TAT or TLM will assist farmer/tribe enrollees with recording of operations required to verify that their practices used meet required practices and are implemented. Each enrollee submits an annual Climate-Smart

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Management Plan detailing practices, rotation systems, and time-stamped pictures of their implemented practices. A web app interface will be used to capture all operations and practices and verification records of implemented practices and for use in other project analyses. This integrated system is also used to manage billing and direct assistance payments.

We address the USDA emphasis that projects should meaningfully involve and benefit all kinds of farmers and businesses, including small or historically underserved producers. We recognize American Indian tribes have not grown potatoes but have expressed desires to improve their farmlands and that our proposed approach to establish soil health targets for soils and develop annual management plans using Climate-Smart practices, enhancements, and bundles of practices and enhancements would be of great benefit to them. Meeting the needs of tribes and small-scale farmers wanting to participate in our project in ways that are meaningful to them has been incorporated as a value into our proposal and tribal partners are given equal priority with established commercial potato producers. The portion of financial assistance funds designated for American Indian Tribes and Commercial/Small-scale farmers are 50% each.

Incentive payments will be made to all contracted participants selected by specific criteria developed for both the tribes and non-tribe producers. For non-tribe producers, selection criteria will consider: scale of production, DEI status, geographic and cropping system variability, fresh and processed potato market class, range of Climate-Smart practices to be implemented, estimated potential amount reductions in greenhouse gas emissions and carbon sequestered by soil health target classes, and other natural resources enhancements addressed in the production plans. For tribal producers, we recognize American Indian tribes have not grown potatoes but have expressed desires to improve their agricultural lands and other natural resources.

Our proposed bottoms-up approach is to establish soil health targets for soils and develop annual management plans using Climate-Smart practices, enhancements, and bundles of practices and enhancements that the producers determine to be of greatest benefit to them. The priority for kinds of working lands to be enrolled is for farmlands on reservations, but depending on tribal priorities and the availability of project resources, some tribes have expressed interest to enroll range and forest lands for utilizing Climate-Smart management practices as well (Appendix A) as a way to holistically manage their natural and cultural resources. For both tribal and non-tribal partners, our intent is for the practices and systems they use choose to fit their individual production conditions, operational goals, and overall land and other natural, cultural, and community resources management objectives.

E. Plan to Enroll *and* Serve Under-Served and Small-Scale Producers.

AMERICAN INDIAN NATIONS. Pacific Northwest tribes have extensive land holdings and consider their natural resources integral to their national culture and heritage. Tribes have an interest in accelerating progress towards achieving food sovereignty and using agricultural business development for creating jobs on reservations. Due to legacy land rental trust agreements, lack of access to supply chain infrastructure, and the need for business development plans to secure financing, large-scale potato production has not been a viable land-use opportunity. However, since agricultural production is important to tribal members and their governments, we have and are offering the soil health assessment method and technical assistance services to seven tribes in the geographic region as way for partner tribes to assess present agricultural land use and to improve present and plan for future agricultural development using optimal Climate-Smart management practices and systems. Our team has experience in working with Native Indian nations in projects designed to incorporate tribal values from the beginning.^{xiii}

There will be an average of 50,000 acres of tribal lands enrolled per year for the life of the project. At the time of the final project plan submission for contracting with USDA, three tribes (Nez Perce, Yakama, and Colville) had agreed to participate and tribal government resolution letters are being prepared. The approximate committed number of acres and farmers by tribe are shown in Table 1. The exact number of farmers on reservations to be enrolled is in process of being determined by these three tribes. It is estimated that there may be as many as 130 farmers participating on

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reservations. Three additional tribes (Shoshone-Paiute Duck Valley, Shoshone-Bannock, and Warm Springs) have also expressed interest in participating. The first priority is given to secure contracts with the Nez Perce, Yakama, and Colville for enrolling farmers and acres on their reservations. Once formal Resolution documents are secured and acreages committed by the three tribes, negotiations will begin as needed with the other tribes to fulfill the additional average annual budgeted project acres and financial incentives for reservation farmers. Native American tribes have expressed a desire to holistically manage their natural and cultural resources. Agriculture is a relatively new enterprise for some tribes and is seen as a means towards greater opportunities for self-managing their Nations' land resources, food sovereignty, and self-sufficiency. Significant changes in land tenure policies have also created new opportunities for expanded agricultural production and thus to adopt land management approaches that would benefit from Climate-Smart practices. This project will consider each tribe's priorities for managing agricultural land enterprises utilized for cropping, grazing and pasture, agroforestry, forestry, and upland wildlife habitat and assist them in choosing to implement appropriate approved CSAF practices (Appendix A). Resolution letters are being prepared and will be submitted documenting all commitments demonstrating official Tribal Council final approvals.

SMALL-SCALE PRODUCERS. We conducted recruitment efforts focused on enrolling other small-scale farmers in the three potato-growing regions. These efforts included contacting a network of farmers willing to participate through direct small-scale farmer contacts, agricultural education events, and agricultural associations. We have achieved our initial target of getting commitments for at least 50 commercial and small-scale farmers to participate. These farm entities combined represent 50,000 acres with a range of 25-7,500 acres in size of operation. We will employ a project enrollment ranking evaluation system to ensure a diversity in scales of operations are represented, regions represented, soil characteristics, potato market classes, kinds of rotation crops, DEI demographics, and Climate-Smart strategies employed. In discussions with American Indian Tribes, there may be the opportunity to enroll small-scale farmers on their lands, both tribe members and non-member renters, with the objective to generally improve soil resource quality on each nation's reservation farmland. The range of scale of reservation operators can be 40 to more than 1,000 acres.

MEASUREMENT/QUANTIFICATION, MONITORING, REPORTING, AND VERIFICATION PLAN

FREQUENCY OF GHG AND OTHER ENVIRONMENTAL BENEFITS REPORTING. Due to the great diversity in potential crops that will be produced in rotation with potatoes, associated practices, and their effects, and without knowing what specific production systems, soils, and climates our enrolled farmers will represent, we have presented annual (not quarterly) estimates for greenhouse gas emissions and other environmental benefits in our *Milestones Summary Table* and *OSU Climate Smart Milestones and GANTT Chart*. Since it is not possible to predict in advance greenhouse gas emission reductions on a quarterly basis, we instead propose to report estimated reductions in the fourth quarter of each fiscal year. The first reporting period follows the initial grower enrollment period during Quarters (Q) 3-4 in 2024 and anticipated initial implementation of Climate Smart Practices in Q-4 and Q's 1-3 in 2025. Unlike predictable rotations in some parts of the country (e.g., corn-soybean in the Midwest), we will be engaging and enrolling growers across a wide diversity of cropping systems and management practices. For example, some potato growers in our three states region employ a potato-wheat-onion-potato rotation system. This system uses large amounts of nitrogen fertilizer and results in great soil disturbance in three-out-of-every-four years that can lead to high nitrous oxide and carbon dioxide emissions and soil erosion, respectively. However, other potato growers use a potato-alfalfa-alfalfa-alfalfa rotation that only disturbs the soil in one-out-of-four years and requires no nitrogen fertilizer during the years in alfalfa production. This system significantly reduces potential carbon dioxide and nitrous oxide emissions as well as soil erosion. Adding to this regional complexity is the fact that the tribal nations may enroll croplands, rangelands, and upland woodlands, as well as culturally important areas used for gathering, and small-scale farmers may also produce mixed vegetables and other specialty crops. For all of these reasons, it is not possible to predict in advance the quarterly benefits estimates.

1. Measuring, Monitoring, and Reporting Plan. Measurement, Monitoring, Reporting and Verification will be conducted at multiple scales to: (i) verify that conservation practices are implemented, (ii) establish Soil Health and C Targets, (iii) estimate GHG emission reductions at the county/Major Land Resource Area (MLRA) level, (iv) verify GHG emission reductions at the farm field level, (v) verify soil C-sequestration estimates, changes in soil C, and changes in soil health at the farm field level, and (vi) report on the practices and their impacts on GHG emissions, C-sequestration, and soil health over the five-year project period. Each step is described below:

ESTABLISH SOIL HEALTH TARGETS. The SHI will implement a recently developed and piloted approach for establishing how healthy a soil can become and how much C it can store. The *Soil Health and Carbon Targets* is a unique, place-based method that establishes measurable goals for farmers based on what is physically possible for their particular soils (Fig. 3). This approach has been made possible by SHI's three-year, \$6.5M project to identify the most effective measures of soil health by evaluating 31 soil health measurements at 124 long-term agricultural research sites across the U.S., Canada, and Mexico. Based on this knowledge of how to measure and monitor soil health, SHI will establish Soil Health and C Targets for the predominant agricultural soils for the entire project area in Idaho, Oregon, and Washington. The Soil Health Targets are demonstrated in Figure 3. In this example, the same soil series were sampled on the same day from two adjacent agricultural fields under different management. Management induced differences in the health of that soil are evident in pictures of the soil when managed as "Business As Usual" (i.e., conventional) compared to when managed for optimal soil health ("Target"). Notice how the soil is soupy and has no strength against the weight of a foot in the "Business As Usual" image on the left, and how the soil is aggregated and holding together in the "Target" soil on the right. These images of soil health can be quantified by measurements such as Aggregate Stability so that a numerical Soil Health Target can be established and the current status from adopting a soil health management system can also be assessed. As producers adopt climate-smart practices and make measurable progress toward achieving their Target, they will attain numerous on-farm benefits such as resilience to drought and heavy rainfall, nutrient-use efficiency, natural pest suppression, field trafficability, and yield stability. The ability to monitor and interpret soil health progress in an appropriate geographical context will also allow the project team to quantify the environmental benefits each farmer is providing when using climate-smart practices.

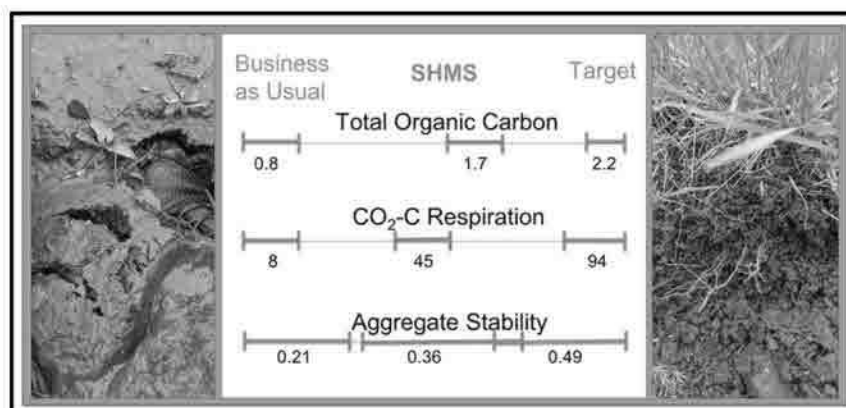


Figure 3. Quantified impacts of management on health of the same soil in two fields separated by a fence in the Palouse Region of Washington state. "Business as Usual" soil (L), Soil Health Management System (SHMS) (middle panel), and the Soil Health Target (R).

Management induced differences in the health of that soil are evident in pictures of the soil when managed as "Business As Usual" (i.e., conventional) compared to when managed for optimal soil health ("Target"). Notice how the soil is soupy and has no strength against the weight of a foot in the "Business As Usual" image on the left, and how the soil is aggregated and holding together in the "Target" soil on the right. These images of soil health can be quantified by measurements such as Aggregate Stability so that a numerical Soil Health Target can be established and the current status from adopting a soil health management system can also be assessed. As producers adopt climate-smart practices and make measurable progress toward achieving their Target, they will attain numerous on-farm benefits such as resilience to drought and heavy rainfall, nutrient-use efficiency, natural pest suppression, field trafficability, and yield stability. The ability to monitor and interpret soil health progress in an appropriate geographical context will also allow the project team to quantify the environmental benefits each farmer is providing when using climate-smart practices.

ANNUALLY ESTIMATED GHG EMISSIONS FOR EACH FARM ENROLLED. GHG emissions will be estimated annually using COMET-Planner for each farm enrolled. Results will be entered into the blockchain record via the ABL interface (Fig. 4). **INDIVIDUAL FARM FIELD VERIFICATION.** Because COMET-Planner estimates GHG emissions using algorithms at the MLRA scale, we will verify GHG emissions at the individual farm field scale using COMET-Farm for a representative number of farms enrolled in the program. **SOIL SAMPLING TO VERIFY.** Since COMET-Farm also provides estimates of soil carbon (C)-sequestration, we will take advantage of that opportunity by verifying soil C-sequestration through soil sampling for soil organic carbon (SOC) and bulk density at the farm field scale. The number and location of fields sampled will be selected to be proportionally representative of the farms, soils, climates, and MLRAs in the population of farms that enroll in the program. Soils will be

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sampled at 0-20 cm depth for verifying COMET-Farm predictions of SOC and at 0-30 cm depth for potential utility in C-market opportunities. **SOIL ORGANIC CARBON AND SOIL HEALTH MONITORING.** SOC will be analyzed by combustion, and soil bulk density measured by the core method (corrected for stone content, if applicable). In addition to assessing SOC, soils will also be analyzed for potentially mineralizable organic-C and aggregate stability. These three soil health indicators will be integrated into the project's education programs to further motivate more growers to adopt and sustain climate-smart, soil health-promoting practices. Those fields selected for soil sampling will be sampled in the same location (verified with GPS coordinates) in Years-1 and -5 to quantify management practice impacts on soil-C stocks (sequestration) and soil health. The project team will conduct the soil sampling, and instruct and verify that the laboratory analyzing the samples follows the laboratory and handling protocols widely used by the scientific community. **ANTICIPATED ENVIRONMENTAL BENEFITS.** All of the above measurements and modeling estimates will be integrated annually to calculate the GHG benefits for each farm, commodity produced, and financial assistance and technical assistance funding expended. Based on estimates published in peer-reviewed journals, we anticipate that the adoption of climate-smart practices on these 100,000 project acres will reduce GHG emissions by 428,510 metric tonnes of CO₂e over the five-year project, while simultaneously reducing erosion by 1,761,000 metric tonnes of soil and reducing N losses through leaching by 3,938,770 pounds of N^{xiv xv xvi xvii xviii xix}³. For every \$100 in financial assistance provided to growers, GHG emissions will be reduced by one metric tonne of CO₂e during this project. We fully expect these benefits to continue to accrue far beyond the life of this project based on interviews with 125 farmers by the *Soil Health Institute* who all indicated they would never go back to using conventional practices after adopting soil health-promoting practices that lead to Climate-Smart outcomes. **INPUTS FOR FURTHER MODELLING.** The GHG emission estimates, C-sequestration estimates, and other bio-physical data produced will be used as inputs to the Tradeoff Analysis Model for Multi-dimensional Impact Assessment (TOA-MD) model (see following and its use as shown in Fig. 6) to assess the potential adoption of Climate-Smart practices, associated socio-economic and environmental tradeoffs, and to estimate the regional contribution to GHG mitigation based on incentives payments to adopt Climate-Smart practices and management systems.

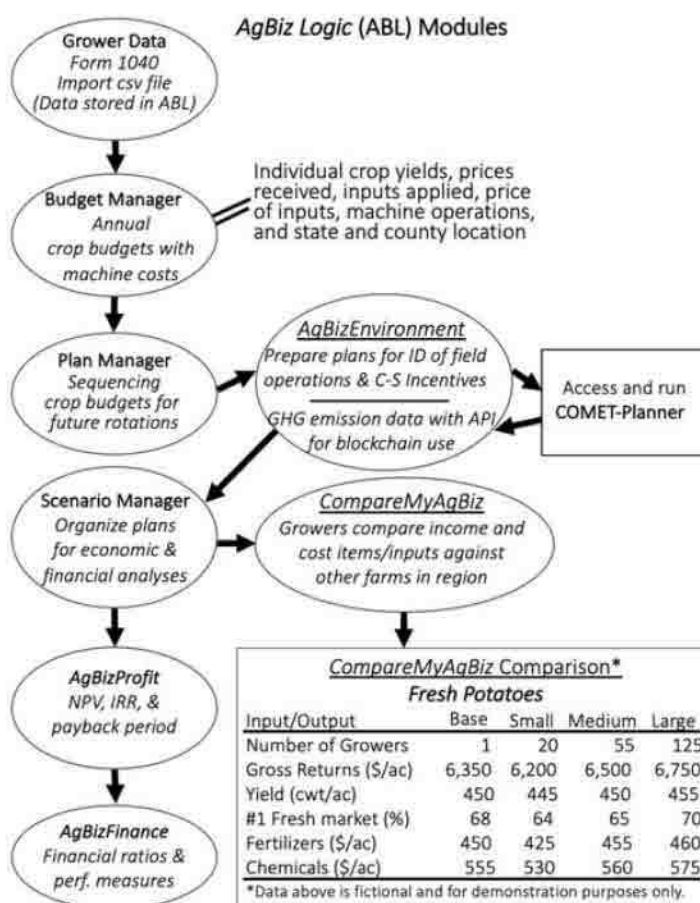


Figure 4. Schematic of AgBiz Logic decision support tools showing the data flow with integration of COMET-Planner.

³ Original GHG estimates were calculated by implementing no-till and cover crop CSAF enhancement practices. We have added in nitrogen management CSAF enhancement to compensate for the reduction in total acres enrolled due to reduced final project award, and still achieve the GHG reductions targets.

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CLIMATE-SMART MANAGEMENT PLANS ARE ANNUALLY SUBMITTED. Implementation of conservation practices (e.g., cover crops, no-till) will be verified annually for each farm enrolled by having each grower submit Climate-Smart Management Plan details on Climate-Smart practices, rotation systems, and time-stamped pictures of their practices implemented. The ABL web-interface will be used to capture all operations and practices and verification records of practices implementation. This information will be uploaded into the blockchain record (Fig 4).

2. ESTIMATING GROWER PROFITABILITY. The decision tool *AgBiz Logic*TM (ABL) analyzes the impact of investment choices on a farm business's profitability. Analyzing long-term farm investments involves determining if an investment, in this case adopting Climate-Smart practices and systems, is profitable and begins with crop-level data compiled in an enterprise budget (Fig. 4). Enterprise budgets will account for annual income and expenses for a production season. They are sequenced in ABL plans as future cropping rotations (up to 365 time periods, each plan can have different investment time periods) with inflation rates for inputs and crop prices. The *AgBizEnvironment* module prepares these plans for COMET-Planner, verifying grower field operations of a Climate-Smart practice and identifying the grower GHG reduction benefit practice with payment.

After accessing COMET-Planner, plans will contain the additional information on GHG emissions data, making all field-level data accessible for blockchain use. An ABL scenario organizes the ABL plans, requiring growers to choose discount rates and beginning and ending investment values for each plan, which then provides the basis for an *AgBizProfit* and *AgBizFinance* analysis. *AgBizProfit* shows the net present value, internal rate of return, the payback period, and GHG emissions for each plan. *AgBizFinance* generates 20 financial ratios and performance measures to assess a business' liquidity and solvency with each Climate-Smart method. The *CompareMyAgBiz* module allows the grower to compare their financial information against other growers of different farm sizes within a specified region to identify problem areas and benchmark year-to-year progress.

The ABL decision tool will highlight the key differences between each Climate-Smart practice to minimize GHG emissions and increase farm profitability and financial feasibility. The ABL program and modules can be accessed at <https://www.agbizlogic.com/>, except for *CompareMyAgBiz* (in development) and *AgBizEnvironment* (to be developed with this project).

PLAN TO DISTRIBUTE AND REPORT GROWER INCENTIVE PAYMENTS. We have initially estimated annual grower incentive payments in the fourth quarter of each project year, beginning in Q-4 2023. It is not possible to predict in advance what Climate-Smart practices and production systems will be chosen by participating growers. The enrollee will represent the wide range of commercial and tribal agricultural production lands across the three-state region. We anticipate the incentive payments will be based on practices costs after *On Implementation* and *Payment at Harvest* on the described ABL-calculated opportunity loss for implementing a practice. Total incentive payments are based on average per acre calculations as shown in Table 1. Actual payments may vary based on the kinds of agricultural systems used, the Climate-Smart practices are deployed, number of practices that are bundled, and number of acres enrolled to achieve the proposed GHG, reduced erosion and reduced nitrogen losses, and other Additional Environmental Benefits targets. Incentive payments will be reported quarterly as they are paid to enrolled program farmers.

PLAN TO DEVELOP AND EXPAND MARKETS FOR CLIMATE-SMART COMMODITIES

LIKELIHOOD OF PROJECT VIABILITY BEYOND THE PILOT PERIOD. This project is designed from the beginning to create a framework for marketing Climate-Smart-labelled, value-added agricultural products. As a part of developing pilot markets, we have included potato processing and fresh market companies that may sell their consumer products labeled as Climate-Smart. Pilot case examples will be developed for these companies featuring specific product lines from farm-to-market. Such companies may share premiums with participating producers for utilizing Climate-Smart practices. Along with potatoes, other rotation crop commodities such as grains, corn, hay, and industrial hemp grown in potato-based rotation systems may also be promoted as potential cash crop rotation components because of their putative Climate-Smart attributes and additional value-added biobased

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materials sales income streams from production and use in biobased manufacturing of consumer products.

CLIMATE-SMART TRACKING THROUGH SUPPLY CHAINS. We will introduce novel ABL accounting system and tracking Web3.0 blockchain technology^{xx} to transparently enter and record the use of Climate-Smart practices (Fig 5). The blockchain technology quantifies, monitors, reports, and verifies Climate-Smart supply chain data from individual grower fields to consumer products. Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a network. This blockchain infrastructure will provide a public ledger allowing full transparency of reporting and data. Grower budget and Climate-Smart practice data from *AgBiz Logic* will be verified in the blockchain. These findings will create a data mapping framework that builds the Blockchain reporting and application.

Accurate grower input data and tracking are critical to the blockchain. An application allows growers to access blockchain data and input anonymous data as well. This approach will reduce the potential for credit double-counting and reduce transaction costs through linked supply chain components. As a part of incentives transactions, chain-of-custody ownership tracking via the block chain through supply chains will be investigated for the potential exchange of C-credits among project participants such as contracts between producers and processors/handlers, and between processors/handlers and product purchasers. The ultimate goal is to provide a structure that minimizes transaction costs between credit traders. Presently, there are no plans to use the funds from this program to support C-credits trading.

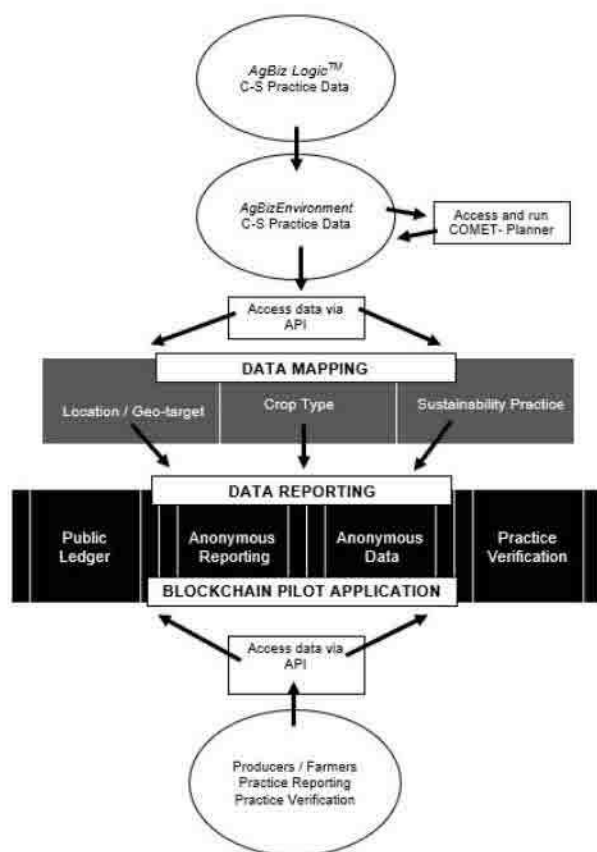


Figure 5. Block chain data structure and its relationship to AgBiz Logic application framework for data input.

EXAMPLES OF VERTICALLY INTEGRATED FIELD-TO-MARKET SUPPLY CHAINS TO CREATE CLIMATE-SMART MARKETS. An emphasis of the Climate-Smart Commodities Program is the creation of markets for value-added CLIMATE-SMART labelled agricultural products. As a part of developing pilot markets, we included companies or processors that source those commodities to sell branded consumer products that could provide a Climate-Smart premium to participating producers and processors. Among our recruited partners, interest in investigating the development of pilot markets and promotions of Climate-Smart labelled potato products has been expressed by Threemile Canyon Farm, Mart Produce, and Lamb Weston, and the Yakama and Nez Perce Tribes. Some of these partners have vertical-control of their product supply chains from contracted producers, to their processing/handling facilities, to buyers of their specialty products for sale in consumer markets. We will collaborate in using our technology and approach to support determining the feasibility of a Climate-Smart-labelled market. Specifically, a pilot marketplace for buyers and sellers could be set up to negotiate and trade carbon credits, utilizing blockchain utilities. Demonstration of a pilot marketplace could be used to increase the acceptance of Climate-Smart practices.

In addition, the *AgBiz Logic* (ABL) decision tool will highlight the key differences between each Climate-Smart practice to minimize GHG emissions and increase farm profitability and financial feasibility. Enterprise budgets will account for annual income and expenses for a production

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season and are sequenced in ABL plans as future cropping rotations and each plan can have different investment time periods. Further analyses can determine the impact of investment choices on a farm's business profitability. Analyzing long-term farm investments can determine if an investment, in this case adopting Climate-Smart practices and systems.

PROJECT FIT INTO BROADER POLICY CONTEXTS. We will also take necessary steps to ensure that this pilot project fits into the broader policy contexts of all three states and Native American tribal government participants. We will identify and evaluate existing policy frameworks and incentive programs that support both climate change mitigation and sustainable agriculture. For example, there are several projects aimed at reducing greenhouse gas emissions, particularly in Oregon and Washington. These include legislation such as Washington's Climate Commitment Act^{xxi}; Oregon Governor Kate Brown's executive order^{xxii} to all state agencies to integrate GHG reduction goals into their planning, budgets, investments and policy making decisions; and resource conservation and climate adaptation plans developed by Native American nations^{xxiii xxiv xxv}. However, the larger initiatives to reduce emissions (particularly with respect to state-level policy) focus mostly on emissions reductions in the electric generation and transportation sectors, with much less attention paid to land management and carbon sequestration programs. These current frameworks provide an opportunity to include the agriculture sector more extensively into climate-related policies and practices through the three-state potato-growing region, as prescribed by this USDA Climate-Smart Commodities program. Additionally, defining and assessing the climate policy framework entails developing a thorough understanding of the network of organizations that promote climate goals and sustainability in agriculture and collaborate with farmers and government agencies, such as the Nature Conservancy's natural climate solutions program^{xxvi}, which promotes regenerative agriculture and improved land management practices. Additionally, there are defined, recognized methods for validating the generation of carbon offsets that may be sold to fund agricultural initiatives.

The second phase is to identify policy constraints to Climate-Smart involvement. This will include assessing existing laws, regulations, programs, and practices to determine their impact, including those that require the agricultural community's engagement, the availability of information and relevant data, the technical assistance required to start and sustain a Climate-Smart program, and financial constraints on the production and marketing of Climate-Smart crops profitably and desired impacts of program implementation. This work will include utilizing pertinent data generated by the project and through engagement with farmers, state and federal program managers, the participating American Indian Nations, and private sector and non-profit entities interested in the development of a market for climate-friendly agricultural products.

The third phase will determine how our project can be made sustainable beyond the life of the pilot program. This includes assessing and pursuing the potential to: (1) modify current policies and practices among states, tribal nations, and other private and non-profit program participants; (2) incorporate this Climate-Smart project into existing policies, such as Washington's Sustainable Farms and Fields program^{xxvii} or Idaho's Industrial Hemp Research and Development Act^{xxviii}; and (3) continue to engage and integrate new/additional participants, such as Native American tribes and private landowners, into the existing and possibly revised policies and practices frameworks that provide financial, technical assistance services, and market opportunities that advance Climate-Smart potatoes and other commodities. A comprehensive assessment of the first two steps will establish a path for recommending measures that can be modified in other existing programs, as well as new measures to remove/address the barriers that limit the attractiveness of and participation in efforts to achieve Climate-Smart outcomes.

ABILITY TO INFORM FUTURE USDA ACTIONS. This pilot project will develop and implement a modeling approach to project potential adoption rates of Climate-Smart practices and evaluate the efficiency of alternative types of policies or contracts for C-sequestration across the region. Our approach takes into account the spatial heterogeneity of soils, agricultural production systems, and the costs of implementing efficient contracts and can inform the design of USDA's Climate-Smart programs. Economic analysis of the potential adoption and impacts of CLIMATE-SMART practices

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in existing potato-based systems will be conducted through a suite of simulation experiments using the Tradeoff Analysis Model for Multi-dimensional Impact Assessment (TOA-MD).^{xxix xxx xxxi} The TOA-MD provides a framework in which bio-physical crop yields, environmental, and economic data such as from the *USDA Census of Agriculture* and social data including poverty, gender, and health measures can be integrated for technology impact assessments and policy analyses at the landscape or population scale (Fig. 6). The TOA-MD model will be parameterized using agricultural census data, experimental data, yield and cost of production data collected from participating growers and complemented with data from ABL and enterprise budgets. Model parameters for crops in rotations with potatoes that have not been previously parameterized (e.g., industrial hemp) will be estimated using information from current systems, secondary data, and analog methods (e.g., use of crop yield variability (CVs) from similar crops to estimate heterogeneity for utilizing new Climate-Smart practices or rotation crops (e.g., industrial hemp)). In addition, COMET-Farm and COMET-Planner data combined with new field measurements for GHG changes associated with switching to Climate-Smart practices and systems will be combined with the TOA-MD to define C-sequestration contracts and estimate the potential amount of C sequestered. Bio-physical and socio-economic heterogeneity in the region will be assessed to define the target population of farms that can be stratified in multiple sub-regions (e.g., MLRA). Data can also be stratified by farm size to look at impacts on small farms and disadvantaged groups.

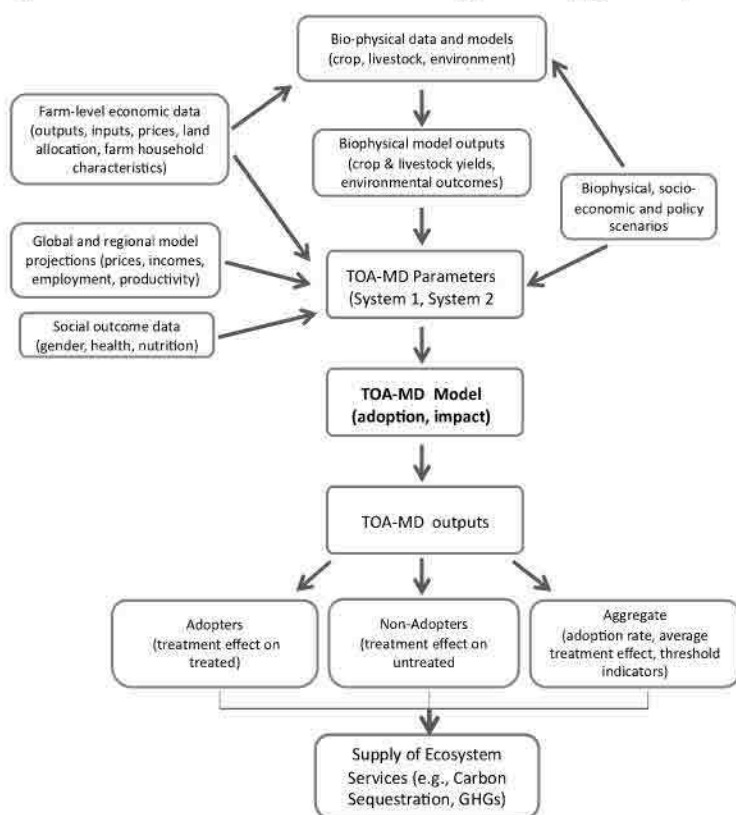


Figure 6. Tradeoff Analysis Model: Landscape-scale technology adoption, environmental impacts and ecosystem services.

The TOA-MD model will simulate the technology adoption rate for hemp as a rotation cash crop with Climate-Smart attributes in potato production systems based on expected profitability, risk, and other behavioral factors. Using the adoption rate, economic and social impacts on adopters (e.g., gains in average farm income, changes in income distribution, and poverty rates among farm households) and environmental impacts (e.g., changes in water and nutrient use and greenhouse gas emissions) can also be simulated. The outputs of the TOA-MD model include the predicted adoption rate of the alternative system, the average impacts and “treatment effects” such as changes in production and profitability for adopters, non-adopters, and the entire population of farms is simulated. To represent the uncertainty in results, sensitivity analysis for key assumptions including hemp prices, productivity, and costs of production will be carried out.

The analysis will utilize data and methods similar to those applied in various studies on GHG mitigation and C-sequestration using the TOA approach.^{xxxii xxxiii xxxiv xxxv xxxvi} This analysis will assess the efficiency of different types of contracts (e.g., per acre or per ton contracts) for carbon sequestration on heterogeneous population of farms. The analysis will include key issues related to carbon sequestration such as technical versus economic potential, additionality, and incentives design using policy scenarios for Climate-Smart support (e.g., financial assistance) and price scenarios to address uncertainty in crops and input prices.^{xxxvii} It will be critical for understanding *ex-ante* the

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potential amounts of C that can be sequestered and greenhouse gases that are reduced and the range of plausible economic incentives that should be provided to maximize adoption of Climate-Smart practices across the region and be used to inform and design programs in other regions.

POST-PROJECT POTENTIAL. The design of the project is such that it is scalable for any geographic area, agricultural commodity, and value chain component in a supply chain. We have addressed ways to determine how our project can be made sustainable beyond the life of the pilot program. These expanded details are detailed in the above project narrative sections. Addressed in those sections are the development and implementation of a modeling approach to project potential adoption rates of Climate-Smart practices and evaluate the efficiency of alternative types of policies or contracts for C-sequestration across the region; modeling to simulate the technology adoption rate for rotation system cash crops produced with Climate-Smart practices based on expected profitability, risk, and other behavioral factors; assessments of the efficiencies of different types of contracts (e.g., per acre or per ton contracts) for carbon sequestration across heterogeneous kinds of farms; and determining how this pilot project fits into the broader policy contexts of the three states and Native American tribal government participants by identifying and evaluating other existing policy frameworks and incentive programs that support both climate change mitigation and sustainable agriculture.

PARTNERSHIP NETWORK. The project team agrees to the terms of the Partnerships Network. All data will be reported and submitted in annual reports to USDA and address all modeled and sampled assessments such as management practices implemented, GHG emissions estimates, C-sequestration estimates, SOC measurements, baseline levels and change over time in soil C-sequestered, baseline levels and change over time in soil health parameters, and the associated environmental benefits to climate change mitigation, water quality, soil health, and erosion.

APPENDIX A

Table of proposed practices adapted from the USDA NRCS Climate-Smart Agriculture and Forestry (CSAF) Mitigation Activities List FY2023 found at: https://www.nrcs.usda.gov/sites/default/files/2023-01/CSAF%20Mitigation%20Activities_2023.pdf

See attached file: OSU Appendix A CSAF Mitigation Activities_2023.xlsx

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Activity	Responsible PI	Totals/Averages	2023				2024				2025				2026				2027			
			1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Required Quantitative Targets by Quarter (Cumulative)																						
Number of Farmer Total:		186	0	115	154	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186
American Indian Reservation Farmers	Management Team	127	0	78	104	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
Commercial Farmers	Management Team	59	0	45	50	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
Number of acres enrolled	Management Team	100,000	0	65,095	89,379	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
American Indian Reservation Farmers	Management Team	50,000	0	27,559	39,574	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Commercial Farmers	Management Team	50,000	0	38,136	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Dollars provided to producers, Total (\$) (accumulating)	Management Team	\$37,192,115			\$7,686,423				\$14,959,944				\$22,315,269				\$29,753,692				\$37,192,115	
American Indian Reservation Farmers (accumulating)	Management Team	\$18,442,115			\$3,698,423				\$7,376,944				\$11,065,269				\$14,753,692				\$18,442,115	
Commercial Farmers (accumulating)	Management Team	\$18,750,000			\$3,750,000				\$7,583,000				\$11,250,000				\$15,000,000				\$18,750,000	
GIS Benefits (Metric: Tons of CO ₂ e Reduced or Sequestered @ average 0.057 metric tons per acre)	Morgan	428,516							428,031				428,852				427,480				428,516	
Number of new marketing channels established	Management Team	3	0	0	4	1	1	0	2	2	3	3	3	3	3	3	3	3	3	3	3	3
Number of marketing channels expanded	Management Team	3	0	0	4	0	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Number of measurement tools utilized by growers	Severett, Morgan, Manrique, Valdez	7	0	0	4	4	4	4	6	6	6	6	6	7	7	7	7	7	7	7	7	7
Other Benchmarks																						
Partnership engagement meetings	Management Team	5	0	1	1	1	1	1	2	2	2	3	3	3	3	4	4	4	4	4	5	
Outreach, training, and other technical assistance	Management Team	14	0	5	10	10	11	11	12	12	13	13	14	14	14	14	14	14	15	15	16	16
Producer/technical audience contacts	Management Team	320	0	18	34	54	72	90	108	126	144	162	180	198	216	234	252	270	288	306	324	
Other IDNRV and supply chain insurability attributes	Morgan	14	0	2	4	5	6	7	8	10	11	12	14	14	14	14	14	14	14	14	14	14
Climate smart technologies employed	Management Team	20	0	6	10	11	13	14	15	16	18	19	20	20	20	20	20	20	20	20	20	20
Reduced Emission (metric tonnes @ average 3,522 tons per acre per year)	Morgan	1,761,000							817,941				932,290				1,346,646				1,761,000	
Reduced Nitrogen Losses through Leaching (pounds per year @ average 7,878 pounds per acre)	Morgan	1,938,779							1,158,461				1,085,230				1,012,000				1,938,779	
Grower behavior (% growers implementing additional practices)	Severett	75	0	85	90	60	65	70	75	75	75	75	75	75	75	75	75	75	75	75	75	
Sanitary policy instruments identified	Bernell	5	0	1	1	1	2	3	3	4	4	5	5	5	5	5	5	5	5	5	5	
Technology impact assessments	Valdez	8	0	0	4	1	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
Partnership Networks																						
Required meetings attended (2 per year)	Project Manager + 1	10	1	1	2	0	3	0	4	0	5	0	6	0	7	0	8	0	9	0	10	
Project Costs																						
American Indian Reservation Farmer Incentives (\$)		\$18,442,115			\$3,698,423				\$14,959,944				\$22,315,269				\$29,753,692				\$37,192,115	
Commercial Farm Farmer Incentives (\$)		\$18,750,000			\$3,750,000				\$7,583,000				\$11,250,000				\$15,000,000				\$18,750,000	
Project Operation Costs:		\$12,807,885	\$0	\$1,569,343	\$1,569,343	\$639,081	\$639,081	\$639,080	\$639,081	\$598,081	\$598,080	\$598,081	\$598,081	\$570,047	\$570,048	\$570,047	\$570,048	\$640,091	\$640,091	\$640,091	\$640,091	
Totals		\$50,000,000	\$0	\$1,569,343	\$9,007,766	\$639,081	\$639,081	\$639,080	\$8,077,504	\$598,081	\$598,080	\$598,081	\$8,096,304	\$570,047	\$570,048	\$570,047	\$8,096,304	\$640,091	\$640,091	\$640,091	\$8,077,514	

Climate-Smart Practices and Limitations

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

NRCS Practice Code	Practice Name
327	Conservation Cover (acres)
328	Conservation Crop Rotation (acres)
329	Residue and Tillage Management, No Till (acres)
340	Cover Crop (acres)
345	Residue and Tillage Management, Reduced Till (acres)
386	Field Border (acres)
393	Filter Strips (acres)
412	Grassed Waterways (acres)
484	Mulching (acres)
590	Nutrient Management (acres)
512	Pasture and Hay Planting (acres)
528	Prescribed Grazing (acres)
550	Range Planting (acres)
381	Silvopasture (acres)
390	Riparian Herbaceous Cover (acres)
391	Riparian Forest Buffer (acres)
420	Wildlife Habitat Planting (acres)
612	Tree/Shrub Establishment (acres)
645	Upland Wildlife Habitat Management (acres)
666	Forest Stand Improvement (acres)

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

N/A



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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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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



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Field Enrollment

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

Table 5. Field Enrollment elements

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



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Field Summary

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

Table 7. Field Summary elements

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 CO ₂ reduction calculated	Calculation of total CO ₂ reduction	Annual
Total carbon stock change calculated	Calculation of change in carbon stock	Annual
Total CH ₄ reduction calculated	Calculation of total CH ₄ reduction	Annual
Total N ₂ O reduction calculated	Calculation of total N ₂ O reduction	Annual
Soil sample result	Numeric result from soil sample	Annual
Measurement type	Type of analysis conducted	Annual



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Additional Environmental Benefits

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

Table 10. Additional Environmental Benefits elements

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.



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Data Descriptions

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

Unique IDs

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

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

State or territory of operation: State or territory name

County of operation: Physical county name

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

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

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



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Project Summary**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



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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



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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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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

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

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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Partner Activities**Unique IDs**

Partner ID

Unique Project ID for each partner

Partner name**Data element name:** Name of partner organization**Reporting question:** What is the official name of the recipient or partner organization?**Description:** Legal name of recipient or partner organization**Data type:** Text**Select multiple values:** NA**Measurement unit:** NA**Allowed values:** Text**Logic:** None – all respond**Required:** Yes**Data collection level:** Partner**Data collection frequency:** Partnership initiation**Partner type****Data element name:** Type of partner organization**Reporting question:** What type of organization is this?**Description:** Legal/financial structure of recipient or partner organization**Data type:** List**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Commodity groups (501c5)
- For-profit
- Individual
- Nonprofit
- State or local agency
- Tribal agency
- University

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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

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

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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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

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

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

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

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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Marketing Activities**Commodity type**

Data element name: Commodity type	Reporting question: What type of commodity is produced by the farmers enrolled in this project?
Description: List a single commodity produced or marketed through incentives from this project. If multiple commodities are produced by the project, use additional rows of the worksheet to report each commodity. Use the FSA commodity list in Appendix B and choose the commodity from the list.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: FSA commodity list
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Marketing channel type

Data element name: Marketing channel type	Reporting question: What type of marketing channel is used to sell this commodity?
Description: List a single type of marketing channel used to sell the commodity produced by farmers enrolled in the project. If a single commodity is marketed through multiple channels, use additional rows of the worksheet to report each combination of commodity and marketing channel. If “other” is chosen, use the additional column to enter the other marketing channel type(s) as free text.	
Data type: List	Select multiple values: No
Measurement unit: Category	Allowed values: <ul style="list-style-type: none"> • Agricultural marketing board • Biorefinery • Commodity broker • Direct to consumer • Direct to institution • Direct to restaurant • Distributor (including grain elevators) • Food hub or cooperative • Food processor • Non-food byproducts processor • Retailer • USDA • Other (specify)
Logic: None – all respond	Required: Yes
Data collection level: Project	Data collection frequency: Quarterly

Number of buyers

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Names of buyers

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

Marketing channel geography

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

Value sold

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

Volume sold

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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 inssetting
- 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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Producer Enrollment**Unique IDs**

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

Producer data change

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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



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Organic farm**Data element name:** Organic farm**Reporting question:** Is any part of the farm currently USDA-certified organic or transitioning to USDA-certified organic?

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

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

- Yes
- No
- I don't know

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

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

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

- Yes
- No
- I don't know

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

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

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



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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



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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**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**Measurement unit:** Category**Reporting question:** What percent of the farm has implemented this CSAF practice (combination) previously?**Select multiple values:** No**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

Required: Yes**Logic:** None – all respond**Data collection level:** Field**Data collection frequency:** Initial enrollment**Field any CSAF practice****Data element name:** Field any CSAF practice**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**Measurement unit:** Category**Reporting question:** What is this field's prior experience with CSAF practices?**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**Logic:** None – all respond**Data collection level:** Field**Data collection frequency:** Initial enrollment**Practice past use - this field****Data element name:** Practice past use - 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**Measurement unit:** Category**Reporting question:** Have this CSAF practice (combination) been implemented previously in this field?**Select multiple values:** No**Allowed values:**

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

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



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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Field Summary**Unique IDs**

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

Commodity type

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

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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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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

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

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

Field GHG reporting**Data element name:** Field GHG reporting 1-3**Reporting question:** How were GHG benefits reported for this field?

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

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

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

Logic: None – all respond**Required:** Yes**Data collection level:** Field**Data collection frequency:** Quarterly**Field GHG verification****Data element name:** Field GHG verification 1-3**Reporting question:** How was implementation of practices to reduce GHG emissions verified for this field?

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

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

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

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



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Field GHG calculations**Data element name:** Field GHG calculations**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**Measurement unit:** Category**Logic:** None – all respond**Data collection level:** Field**Reporting question:** What methods are used to calculate GHG benefits in this field?**Select multiple values:** No**Allowed values:**

- Models
- Direct field measurements
- Both

Required: Yes**Data collection frequency:** Quarterly**Field official GHG calculation****Data element name:** Field official GHG calculation**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**Measurement unit:** Category**Logic:** None – all respond**Data collection level:** Field**Reporting question:** What method was used to calculate the official GHG benefits in this field?**Select multiple values:** No**Allowed values:**

- Models
- Direct field measurements

Required: Yes**Data collection frequency:** Quarterly**Field official GHG ER****Data element name:** Field official GHG emission reductions**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**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Field**Reporting question:** What are the estimated total GHG emission reductions (CO₂eq) in this field?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**Data collection frequency:** Quarterly**Field official carbon stock****Data element name:** Field official carbon stock**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**Measurement unit:** Metric tons CO₂eq**Logic:** None – all respond**Data collection level:** Field**Reporting question:** How much carbon has been sequestered in this field?**Select multiple values:** No**Allowed values:** 0-10,000,000**Required:** Yes**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



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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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

GHG Benefits - Alternate Modeled**Unique IDs**

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

Commodity type**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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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

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

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



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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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

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



Partnerships for Climate-Smart Commodities Data Dictionary for Recipients

February 2023

GHG Benefits - Measured**Unique IDs**

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

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

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

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



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Measurement start date**Data element name:** Measurement start date**Reporting question:** On what date did the measurement start?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements first began.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023 – 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Measurement end date****Data element name:** Measurement end date**Reporting question:** On what date did the measurement end?**Description:** Date that the measurements began. If it was a single point in time, use the same date for start date and end date. If multiple measurements took place over a time period, use the date that the measurements were completed.**Data type:** Date**Select multiple values:** No**Measurement unit:** MM/DD/YYYY**Allowed values:** 01/01/2023– 12/31/2030**Logic:** None – all respond**Required:** If a project conducts soil samples or takes carbon stock or greenhouse gas emission measurements in this field**Data collection level:** Field**Data collection frequency:** Annual**Total CO2 reduction calculated****Data element name:** Total CO2 reduction calculated**Reporting question:** What are the total measured CO2 emission reductions?**Description:** Total annual CO2 emission reductions based on practice implementation in the field calculated from in-field measurements.**Data type:** Decimal**Select multiple values:** No**Measurement unit:** Metric tons 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



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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**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**Measurement unit:** Category**Reporting question:** What is the unit for the reduction in phosphorus losses measured in the field?**Select multiple values:** No**Allowed values:**

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

Required: Yes**Logic:** Respond if yes to 'Reduction in phosphorus loss'**Data collection level:** Field**Data collection frequency:** Annual**Reduction in phosphorus loss purpose****Data element name:** Reduction in phosphorus loss purpose**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**Measurement unit:** Category**Reporting question:** What is the purpose of tracking reductions in phosphorus losses?**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 'Reduction in phosphorus loss'**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**Measurement unit:** Category**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



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Other water quality type**Data element name:** Other water quality type**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**Measurement unit:** Category**Logic:** Respond if yes to 'Other water quality'**Data collection level:** Field**Reporting question:** What type of other water quality metric have been measured in the field?**Select multiple values:** No**Allowed values:**

- Sediment load reduction
- Temperature
- Other (specify)

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

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

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



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Other water quality purpose**Data element name:** Other water quality purpose**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**Measurement unit:** Category**Logic:** Respond if yes to 'Other water quality'**Data collection level:** Field**Reporting question:** What is the purpose of tracking other water quality benefits?**Select multiple values:** No**Allowed values:**

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

Required: Yes**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**Measurement unit:** Category**Logic:** Respond if yes to 'Environmental benefits'**Data collection level:** Field**Select multiple values:** No**Allowed values:**

- Yes
- No
- I don't know

Required: Yes**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**Measurement unit:** Amount**Logic:** Respond if yes to 'Water quantity'**Data collection level:** Field**Select multiple values:** No**Allowed values:** 0-1,000,000**Required:** Yes**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**Measurement unit:** Category**Logic:** Respond if yes to 'Water quantity'**Data collection level:** Field**Select multiple values:** No**Allowed values:**

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

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



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Water quantity purpose**Data element name:** Water quantity purpose**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**Measurement unit:** Category**Reporting question:** What is the purpose of tracking water conservation?**Select multiple values:** No**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**Select multiple values:** No**Measurement unit:** Category**Allowed values:**

- Yes
- No
- I don't know

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

- Kilowatt hours
- Other (specify)

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



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

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

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



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CSAF Practice Sub-questions

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

Table 11. Follow-on questions for select CSAF practices

Practice name and code	Follow-up question	Options (select one)
Alley Cropping (CPS 311)	Species category (select most common/extensive type if using more than one)	Coniferous trees 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
		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)
		Food waste Straw or bedding Wastewater Other (specify)



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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



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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
	Strip width (feet)	1-100
Contour Buffer Strips (CPS 332)	Species category	Grasses Forbs Mix
	Species category (select most common/extensive type if using more than one)	Brassicas Forbs Grasses Legume Non-legume broadleaves
Cover Crop (CPS 340)	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 reseeded Shrubs Trees
	Crude protein (percent)	0-100
Feed Management (CPS 592)	Fat (percent)	0-100
	Feed additives/supplements	Chemical Edible oils/fats Seaweed/kelp Other (specify)
Field Border (CPS 386)	Species category (select most common/extensive type if using more than one)	Forbs Grasses Mix Shrubs



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



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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
Pasture and Hay Planting (CPS 512)	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



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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



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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



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



Appendix A: Climate-smart Agriculture and Forestry Practices

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

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



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



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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 List

CROPS

ALFALFA
ALMONDS
AMARANTH GRAIN
APPLES
APRICOTS
ARONIA (CHOKEBERRY)
ARTICHOKES
ASPARAGUS
ATEMOYA
AVOCADOS
BAMBOO SHOOTS
BANANAS
BARLEY
BEANS
BEETS
BIRDSFOOT/TREFOIL
BLUEBERRIES
BREADFRUIT
BROCCOFLOWER
BROCCOLI
BROCCOLINI
BRUSSEL SPROUTS
BUCKWHEAT
CABBAGE
CACAO
CACTUS
CAIMITO
CALABAZA MELON
CALALOO
CAMELINA
CANARY MELON
CANARY SEED
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
LEEK
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



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

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.